PART 3:
Monitoring and evaluation

Purpose

The third part of the National eHealth Strategy Toolkit (this document) provides guidance on establishing a framework to monitor the action plan developed in Part 2, and to evaluate the outcomes achieved. The main aspects of this work are the development of indicators and targets to be measured, and the definition of the governance and processes required.

Audience

This document is intended for use by government, ministerial and health sector leaders, including personnel in health ministries, departments and agencies who will monitor and evaluate their national eHealth action plan. It is designed to be used by countries that have developed a national eHealth vision and action plan using Parts 1 and 2 of the Toolkit. It is assumed that the outputs from Parts 1 and 2 are available and have been endorsed. It may also be of use to other decision makers who have developed an action plan for national eHealth but are uncertain as to how to monitor and evaluate the results.

Toolkit overview

The Toolkit provides a framework and method for the development of a national eHealth vision, action plan and monitoring and evaluation framework. The Toolkit is designed in three parts, with each part building on the work of the previous one:

• Part 1: A national eHealth vision that responds to health and development goals.
• Part 2: An implementation roadmap that reflects country priorities and the eHealth context.
• Part 3: A plan to monitor implementation and manage associated risks.

How this Toolkit will be used, and the end result, will be based on a country’s context, priorities and vision.

Orientation to Part 3

This document provides guidance on establishing a national monitoring and evaluation framework.

• The introduction summarizes the outputs of Part 2 and how these relate to monitoring and evaluation.
• Chapters 1-2: The elements of a monitoring and evaluation framework, and the method by which the framework is developed.
• Chapters 3-5: Detailed guidance on defining a national monitoring and evaluation framework.

Appendices provide additional information and tools to support this guidebook.
Contents

Foreword
Introduction 1
CHAPTER 1. An eHealth monitoring and evaluation framework 1
CHAPTER 2. Developing an eHealth monitoring and evaluation framework: Overview 3
CHAPTER 3. Define indicators 5
CHAPTER 4. Define baseline and target measures for indicators 18
CHAPTER 5. Define supporting governance and processes 25
CHAPTER 6. Conclusion 33
APPENDIX A. Results Based Management 34
APPENDIX B. Benefits Realisation Management 37
APPENDIX C. Example eHealth Strategies and Roadmaps 39
APPENDIX D. Definition of Terms Used Across the Toolkit
Figures

Figure 1 - Results-based management for national eHealth programs

Figure 2 - Components of an eHealth monitoring and evaluation framework

Figure 3 - A method for developing an eHealth monitoring and evaluation framework

Figure 4 - Define indicators to monitor and evaluate

Figure 5 - Relationship between prioritised stakeholders, eHealth outcomes and eHealth outcome

Figure 6 - Relationship between prioritised stakeholders, eHealth outcomes and outputs, and eHealth output indicators

Figure 7 - Relationship between eHealth outcome and output indicators

Figure 8 - Define baseline and target measures for indicators

Figure 9 - Aligning national monitoring and evaluation timeframes with implementation phases

Figure 10 – Suggested approach to defining target measures for eHealth output indicators

Figure 11 – Define supporting governance and processes

Figure 12 – Example governance model for the national monitoring and evaluation

Figure 13 – Example of a national monitoring and evaluation process

Tables

Table 1 - Examples of eHealth outcomes for stakeholders (non-exhaustive)

Table 2 - Examples of eHealth outputs (non-exhaustive)

Table 3 - Example of eHealth outcome indicators (non exhaustive)

Table 4 - Example of eHealth output indicators (non exhaustive)

Table 5 - Suggested criteria for selecting optimal indicators

Table 6 - Illustrative example of target measures for eHealth output indicators

Table 7 – Illustrative example of target measures for eHealth outcome indicators

Table 8 - Example functions for governing national monitoring and evaluation

Table 9 – Role of governance mechanisms as it relates to national monitoring and evaluation

Table 10 – Example of national and activity-level monitoring and evaluation activities

Table 11 – Example of national and activity-level monitoring and evaluation activities

Table 12 – Deloitte’s Benefits Realisation Management Framework

Table 13 – Examples of eHealth strategies and roadmaps
Introduction

National eHealth vision and action plan

By this point, a government will have established a national vision for eHealth and an integrated eHealth action plan, by completing Parts 1 and 2 of the Toolkit. The action plan will have been endorsed by health sector leadership and supported by the broader stakeholder environment.

The action plan should describe:

- The action lines required to implement the national eHealth vision
- The outputs and related activities for each action line
- The dependencies and timings of activities
- The resources required to deliver the outputs and activities
- The phases in which the action plan will be implemented.

Monitoring and evaluation framework for eHealth

A monitoring and evaluation framework enables a government to track and assess the results of implementing the eHealth action plan. “Results based management” is the management strategy used by the United Nations\(^1\) (Figure 1) and adopted in the Toolkit. The approach focuses on performance and on achievement of outputs, outcomes and impacts by:

- defining indicators that provide insight into the adoption of eHealth and the tangible results for health and non-health stakeholders,
- identifying indicator baseline and target measures to allow monitoring and evaluation of progress over the duration of the plan, and
- describing the governance and processes required.

Figure 1. Results based management for national eHealth programs

---

A monitoring and evaluation framework for a national eHealth strategy is distinct from the program management activities designed to implement and manage a large-scale eHealth program. Program management monitors the execution of the action plan, and is central to answering the question as to whether the country is on track in terms of its implementation of a national eHealth environment. It focuses on:

- **Program inputs**: Funding, budgets, resources and other inputs required to deliver the eHealth action plan.
- **Program activities**: Corresponds to the activities defined in the action plan.
- **eHealth outputs**: The deliverables, such as eHealth components, resulting from the activities undertaken.

By contrast, a monitoring and evaluation framework complements program management by looking primarily at results. It overlaps program management and enables a country to determine whether they are on the right track, but goes beyond it to answer the question as to whether the integrated action plan is delivering the outcomes, impact, and level of change anticipated. It focuses on:

- **eHealth outputs**: The deliverables, such as eHealth components, resulting from the activities undertaken (as above).
- **eHealth outcomes**: The strategic outcomes that eHealth outputs enable, or contribute to enabling.
- **Impact**: The change that eHealth outcomes create for health and non-health sector stakeholders.

A monitoring and evaluation framework assigns accountability (who), and determines the approach (how) and timing (when) for measuring the results. This document focuses specifically on eHealth. Countries seeking information on program management should refer to one of the program management frameworks in wide use, such as PMBOK® or PRINCE2®.

**The strategic importance of monitoring and evaluation**

Monitoring and evaluation plays a critical role in demonstrating the progress that a country is making towards the development of their national eHealth environment, and the results or change that these efforts are delivering. The outputs of monitoring and evaluation form a critical part of ongoing communication regarding a country’s national eHealth program, which in turn is essential to building the support of stakeholders for further adoption and investment in eHealth.

In particular, communicating the progress and results of the eHealth action plan is important to demonstrating to donors or funders the impact of their investments. It can also help in building trust and understanding with potential funders as to how their contribution would be used to further the country’s national eHealth program.

**Establishing a national monitoring and evaluation framework**

Establishing a successful national monitoring and evaluation framework requires dedicated resources and effort, often at various levels, to develop, manage and operate an effective process. Governments should consider monitoring and evaluation as part of the planning and costing of their national eHealth programs, thereby ensuring that appropriate resources are dedicated to the work.

---

2 URL for PMBOK
Countries using their own results based management approaches are encouraged to ensure that these encompass the concepts described in the results chain shown in Figure 1. Appendices A and B provide additional information regarding results based management.
CHAPTER 1

eHealth monitoring and evaluation framework

This section describes the elements to be considered in establishing a monitoring and evaluation framework for national eHealth (Figure 2).

Figure 2. Elements of an eHealth monitoring and evaluation framework

1.1 Indicators for eHealth

An effective monitoring and evaluation framework is constructed around a set of meaningful indicators, the measurement of which provides insight into the adoption, use, and results that eHealth is delivering.

Meaningful indicators should include the perspective of stakeholders, as this ensures that changes or improvements important to stakeholders are measured. Developing and selecting these indicators requires an understanding of eHealth outcomes (formed during Part 1) and outputs (formed during Part 2) important to each stakeholder.

Two types of indicators are considered:

• **Output indicators**: Indicators that provide information and insight as to the adoption of eHealth.
• **Outcome indicators**: Indicators that provide information and insight as to the results obtained.
1.2 Indicator measures

Monitoring the progress of the action plan requires an understanding of where a country is starting from (baseline), and what they are expecting to achieve (target). Targets should be defined for a range of timeframes throughout the duration of the action plan.

1.3 Governing monitoring and evaluation

National governance provides oversight, coordination and guidance for monitoring and evaluation efforts, and ensures timely intervention when there appears to be divergence between what is actually happening and what a country was aiming to achieve through its eHealth program. Governance must be supported by processes that direct how the adoption and results of eHealth are monitored and evaluated.
CHAPTER 2
Developing an eHealth monitoring and evaluation framework: Overview

This section describes how a monitoring and evaluation framework can be developed (Figure 3).

Figure 3. A method for developing an eHealth monitoring and evaluation framework

The development of a monitoring and evaluation framework is a sequential process that begins with understanding the indicators that need to be monitored and outcomes that need to be evaluated. Baseline and target measures are set for each indicator. Targets serve as the basis for tracking actual progress against planned progress, and determining whether corrective action is required. A monitoring and evaluation framework also describes the governance model and processes through which national monitoring and evaluation will be performed. Stakeholders are consulted throughout the process in order to gain commitment and understanding, as well as to ensure that their roles are considered in the governance structure and processes.

The development of a monitoring and evaluation framework is closely linked to the outputs of Part 1 and 2 of the Toolkit, in particular:

- The important health and non-health sector stakeholders
- The eHealth outcomes on which the national eHealth vision is based
- The eHealth outputs that the action plan will deliver
- The implementation phases and timing for delivery of these outputs.

A considerable portion of developing a monitoring and evaluation framework involves using this existing knowledge.

2.1 Define indicators for eHealth

This step determines the purpose of monitoring and evaluation, based on the eHealth vision, action plan and stakeholder perspectives. It focuses on developing a set of eHealth output and outcome indicators that will measure the results that eHealth delivers. It is important to consider the consultations completed with stakeholders in Part 1, and to link a number of the indicators to outcomes important to stakeholders. It is also important to link indicators to timeframes for measuring other health outcomes where possible (for example, in the national health system reporting processes) to show the contribution of eHealth to these outcomes and to avoid creating separate reporting processes.
2.2 Define baseline and target measures for indicators

This step validates the baseline measures and creates target measures for each indicator. Target measures are defined for different timeframes so that progress can be monitored throughout the execution of the plan.

23 Define supporting governance and processes

This stage defines the governance and processes within which the monitoring and evaluation of eHealth adoption and associated results will be undertaken. Experience shows that monitoring and evaluation of eHealth progress may be done at multiple levels and by multiple parties. It is important that these various monitoring and evaluation efforts are planned and executed within an overall national monitoring and evaluation model.
CHAPTER 3
Define indicators for eHealth

This stage focuses on defining the indicators that will be monitored and the outcomes that will be evaluated during the implementation of the integrated action plan for eHealth.

Objectives

This step defines eHealth output and outcome indicators that will assist in measuring the results of the eHealth action plan. Indicators should be linked to the stakeholders and outcomes identified in Part 1, so that the true success of eHealth is understood, above and beyond noting the progress of eHealth implementation.

Activities

- Identify priority stakeholders for whom it is critical to show results in eHealth
- Review eHealth outcomes for priority stakeholders
- Identify the eHealth outputs that will lead to these outcomes
- Review and confirm focus areas with priority stakeholders
- Develop eHealth adoption and outcome indicators.

Outputs

- eHealth output indicators, which will be used to measure the adoption and take-up of eHealth within the health sector.
- eHealth outcome indicators, which will be used to measure the results of the adoption and take-up of eHealth.
3.1 Identify priority stakeholders

Objective
This step prioritises the health and non-health sector stakeholders identified in Part 1 and Part 2 of the Toolkit for whom it is important to show results of the eHealth action plan. The development of indicators should be informed by the perspective of stakeholders, minimizing the risk that indicators are based on program delivery alone.

Recommended outputs
This step should determine the priority health and non-health sector stakeholders for whom eHealth outcomes are especially important to demonstrate. It is recommended that stakeholders are described at an organization, group or role level rather than a specific individual or political party since these will change with time. For example, a stakeholder could be the defined as the Department of Health (organization-level) or the Health Minister (role-level) rather than the particular individual fulfilling the role of the Health Minister. An example of a group-level stakeholder could be a particular consumer cohort such as Individuals aged 65 years or older.

Approach
This step is based on the knowledge of multi-sectoral stakeholders developed during Part 1 and Part 2. As this may be a long list, this step should focus on stakeholders for whom demonstration of progress and outcomes of eHealth is important to building support and momentum for further adoption of, and investment in national eHealth.

Stakeholders for whom eHealth outcomes may be especially important:
- Consumers
- Healthcare providers
- Healthcare managers and administrators
- Health and medical researchers.

Funding bodies, such as social/economic development agencies and other international donors, should also be given careful consideration during this step. While not a direct beneficiary of national eHealth programs, these bodies may have, as part of the provision of funding, stipulated requirements for monitoring implementation progress and the results of their investment in a national eHealth program. These requirements may identify other stakeholders that should be considered, with a goal of demonstrating how funding from these bodies has been directed towards making progress through eHealth.

3.2 Review eHealth outcomes for priority stakeholders

Objective
This step identifies the outcomes that delivering the integrated action plan for eHealth will have for each of the prioritised stakeholders. It is the delivery of eHealth outcomes that leads to concrete improvements and results for stakeholders, so indicators should be based on these outcomes (Figure 5).
The eHealth outcomes that were described in the national eHealth vision (Part 1) should be linked to each of the prioritised stakeholders. These eHealth outcomes should be explored from the perspective of each stakeholder to describe what delivering that outcome will mean for them. For example, what improvements or changes will a particular stakeholder experience through a particular eHealth outcome being realised?

**Recommended outputs**

This step should describe the eHealth outcomes (concrete improvements) for each prioritised stakeholder, when the integrated action plan for eHealth is implemented. These will be based on the eHealth outcomes described in Part 1 of the Toolkit (Table 1).

**Table 1. Examples of eHealth outcomes for stakeholders (non-exhaustive)**

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Examples eHealth outcomes</th>
</tr>
</thead>
</table>
| Consumers         | • Improve the ability for consumers located in rural and remote locations to access primary care services, and reduce the need to travel large distances to access care  
                    • Enable pregnant women in rural and remote areas to access knowledge and services to assist in managing their pregnancy  
                    • Enable consumers to access knowledge and services that support early detection and treatment of preventable infections and communicable diseases  
                    • Improve care coordination by ensuring their health information can be easily exchanged between their healthcare providers  
                    • Improve access to knowledge resources and support for better management of their chronic conditions, and adhering to treatment and medication regimes |
| Health care providers | • Improve the ability for providers to access health information at the point of care  
                            • Improve the ability for providers to exchange patient information with other providers  
                            • Enable providers to interact with consumers that are located remotely.  
                            • Enable providers to monitor and track their patients more effectively  
                            • Enable providers to access clinical knowledge, evidence and expertise to support skills development and the delivery of healthcare within their local communities |
Stakeholder | Examples eHealth outcomes
--- | ---
Healthcare managers and administrators | • Support national and regional health authorities to predict and plan for the spread of infectious diseases
• Enable national and regional health authorities to monitor and respond to outbreaks and other emergencies in a more rapid manner
• Support the education, training and development of the country’s health workforce
• Provide a reliable and comprehensive data set to inform and monitor the results of clinical, policy, investment and administrative decisions
• Provide access to quality data sources that inform service and workforce planning and to identify and address system inefficiencies
• Enable effective management of the supply, distribution and availability of vaccines and essential medicines

Health and medical researchers | • Provide researchers with greater access to reliable and comprehensive evidence based data to support the design and assessment of treatment regimes
• Improve access to the medical literature, knowledge networks and resources

**Approach**

This step is based on the eHealth outcomes developed during the development of the national eHealth vision in Part 1. Formulating the vision involved defining a set of eHealth outcomes, which answered the question of what will be achieved or changed through using eHealth? The process of developing the vision also involved exploring what each of these eHealth outcomes would mean for stakeholders. This activity should take these eHealth outcomes and refine them where required to describe the concrete results that the vision is expected to deliver to each prioritised stakeholder. The descriptions should be concrete enough to support the identification of indicators that will allow these outcomes to be measured.

### 3.3 Identify eHealth outputs that will lead to these outcomes

**Objective**

This step identifies the outputs of the eHealth action plan that will deliver, or contribute to the delivery of those eHealth outcomes identified in Section 3.2. This understanding provides the context for identifying eHealth output indicators (Figure 5).
The eHealth outputs and associated activities defined in the integrated action plan for eHealth (Part 2) should be linked to the eHealth outcomes defined in the previous step. These eHealth outputs should be explored from the perspective of each outcome to understand which eHealth outputs deliver, or contribute to delivering a particular outcome for a prioritised stakeholder. For example, what eHealth components need to be delivered for a particular stakeholder to experience a particular eHealth outcome?

**Recommended outputs**

This step should produce a description of the eHealth outputs for each eHealth outcome, which describes the components that must be delivered for a particular eHealth outcome to be realised for a stakeholder.

Table 2 provides some examples of eHealth outputs for some of the example eHealth outcomes that were provided in the previous section.
### Table 2 - Examples of eHealth outputs (non-exhaustive)

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>eHealth outcomes</th>
<th>Associated eHealth outputs</th>
</tr>
</thead>
</table>
| Consumers                           | Improve the ability for consumers located in rural and remote locations to access primary care services, and reduce the need to travel large distances to access care | - Fit-for-purpose data / telecommunications connectivity established to rural and remote communities  
- National telemedicine service established  
- Fit-for-purpose computing/access infrastructure deployed to rural and remote communities  
- Telemedicine education and awareness programs delivered to rural and remote communities. |
|                                      | Enable pregnant women in rural and remote locations to access knowledge and services to assist in managing their pregnancy | - Fit-for-purpose data / telecommunications connectivity established to rural and remote communities  
- National pre/post natal health knowledge portal established  
- SMS-based pre/post natal support service established  
- Fit-for-purpose computing/mobile handset infrastructure deployed to rural and remote communities  
- Health knowledge and SMS support service education and awareness programs delivered to rural and remote communities. |
|                                      | Improve the ability for providers to exchange a patient’s health information with other providers | - National eHealth data and messaging standards approved  
- Unique health identifiers exist for consumers and care providers  
- Standard-compliant care provider software available from vendors  
- Fit-for-purpose care provider computing infrastructure deployed  
- Fit-for-purpose data / telecommunications connectivity established to care providers  
- National electronic health record (EHR) system available  
- Consumers have opted in to have their health information shared via the national EHR system |
| Care providers                       | Enable providers to access clinical knowledge, evidence sources and expertise to support skills development, and the delivery of healthcare within their local communities | - Fit-for-purpose data / telecommunications connectivity established to health facilities and care providers  
- National care provider knowledge portal service established  
- Mobile knowledge and decision support applications developed and deployed  
- Fit-for-purpose computing/mobile infrastructure deployed to care providers |
| Healthcare managers and administrators| Enable national and regional health authorities to monitor, and respond to outbreaks and other emergencies, in a more rapid manner | - Fit-for-purpose data / telecommunications connectivity established for the health sector  
- Fit-for-purpose computing/mobile infrastructure deployed  
- National disease management and reporting portal service established  
- Surveillance applications for mobile devices developed and deployed |
|                                      | Support the education, training and development of the country’s health workforce | - Fit-for-purpose data / telecommunications connectivity available to the workforce  
- Fit-for-purpose computing infrastructure deployed available to potential workers  
- eLearning portal service and applications established  
- Awareness programs delivered regarding training options. |

### Approach

This step is based on the eHealth outputs developed during the development of the integrated action plan for eHealth in Part 2 of the Toolkit. Formulating the integrated action plan involved identifying the various **eHealth outputs**, required to deliver the strategic recommendations described in the national eHealth vision, and through doing so, deliver the required eHealth outcomes.

Some eHealth outputs will be delivered progressively over time (such as the adoption of a particular eHealth solution by care providers) while others will represent a ‘point in time’ event (such as the commissioning of a national EHR system into live operation). It is important to

---

5 Refer to Section 5.2 Identify and allocate outputs to eHealth activity areas of Part 2 of the Toolkit
identify those eHealth outputs delivered over time as the associated results that will also be
delivered progressively over time and for which the eHealth output and outcome indicators will
need to be defined.

### 3.4 Review and confirm focus areas with priority stakeholders

**Objective**

This step confirms the eHealth outcomes and outputs for monitoring and evaluation. This
involves reviewing the eHealth outcomes and outputs with priority stakeholders, and seeking
their guidance on the focus of monitoring and evaluation efforts.

This step allows the relative importance of different eHealth outcomes and outputs to be
understood from the perspective of priority stakeholders. This is particularly important given
that the resources to undertake monitoring and evaluation will likely be limited and therefore
measuring ‘everything’ is unlikely to be possible.

This step also provides an opportunity to:

- Build stakeholder support
- Gather stakeholder input on indicators that could be used to monitor and evaluate the
  implementation of eHealth outcomes and outputs
- Re-emphasise how the implementation of the integrated action plan for eHealth will deliver
eHealth outputs that support meaningful eHealth outcomes for them.

**Recommended outputs**

This step should produce a confirmed list of the eHealth outcomes and associated outputs that
national monitoring and evaluation efforts will focus on. This step can also be used to gather
stakeholder input regarding those indicators that stakeholders view as important to monitoring
and evaluating the eHealth outcomes and outputs.

**Approach**

This step will require consultation with stakeholders to review and confirm the eHealth
outcomes and outputs that are of particular importance to them. This involves prioritising
which aspects of a country’s eHealth program, in terms of eHealth outcomes and outputs,
will be monitored and evaluated to demonstrate progress and impact of the implementation
of the integrated action plan for eHealth. Consultation with stakeholders should focus on
understanding those aspects that ‘must’ be monitored and evaluated, versus those that ‘should’
or ‘could’ be measured. Typically this discussion will tend to focus more on stakeholder
priorities in the short to medium timeframes.

Once eHealth outcomes and outputs are prioritised, stakeholders should also be consulted
regarding the indicators that they view as being practical and appropriate to support monitoring
and evaluation. In particular, this will begin to form a picture of what can and cannot be
measured, which is an important consideration to monitoring and evaluation.
3.5 Define eHealth output and outcome indicators

Objective

This step defines the indicators that will be monitored and evaluated throughout the execution of the integrated action plan for eHealth. Two types of indicators should be considered:

- **eHealth output indicators**: Indicators that provide information and insight into the adoption of eHealth
- **eHealth outcome indicators**: Indicators that provide information and insight into the results for stakeholders arising from the adoption and use of eHealth.

Output indicators are derived from the eHealth outputs that the integrated action plan (Part 2) will deliver. Outcome indicators are derived from the eHealth outcomes described by the national eHealth vision (Part 1). These indicators are closely related, in that the rate of adoption and take-up (measured by eHealth output indicators) will drive the improvements that stakeholders experience from eHealth (measured by eHealth outcome indicators) (Figure 7).

![Figure 7. Relationship between eHealth outcome and output indicators](image)

The above diagram demonstrates the relationships between eHealth outcome and output indicators. Understanding these relationships plays an important role in establishing targets for indicators. For example, setting realistic and achievable targets for eHealth output indicators will in turn assist in determining the realistic and achievable eHealth outcome indicators.

Some eHealth outputs may not have an associated indicator. This may be the case for those outputs that are not delivered progressively. Commissioning of a national eHealth service into operation or the passing of a particular piece of legislation or policy are examples of such eHealth outputs. eHealth output indicators are typically used for eHealth outputs that are
delivered progressively. The gradual deployment of data communications infrastructure or the take-up of standards-compliant software by care providers are examples of such eHealth outputs.

**Recommended outputs**

This step should produce meaningful indicators that can be used to monitor and evaluate the results of implementing the integrated action plan for eHealth.

Table 3 provides examples of eHealth outcome indicators for the example eHealth outcomes provided in the previous sections.

### Table 3. Example of eHealth outcome indicators (non exhaustive)

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>eHealth outcomes</th>
<th>Indicators</th>
</tr>
</thead>
</table>
| Consumers                           | Improve the ability for consumers located in rural and remote locations to access primary care services, and reduce the need to travel large distances to access care | • % increase in the number of primary care-related consultations conducted via telemedicine  
• % increase in the number of rural and remote consumers that can gain access primary care services via telemedicine  
• Average reduction in time for a rural or remote consumer to access primary care services as a result of telemedicine  
• Consumer satisfaction regarding role of technology in improving their access to health services |
| Care providers                      | Improve the ability for providers to exchange a patient's health information with other providers | • % increase in the number of electronic health information transactions between healthcare providers  
• % reduction in clinician time gathering consumer health and medical history  
• % increase in the number of discharge summaries being received by primary care providers  
• Provider satisfaction of using eHealth to improve information sharing with other providers |
| Enable providers to access clinical knowledge, evidence sources and expertise to assist with skills development, and the delivery of healthcare within their local communities | • % increase in visits to national care provider knowledge portal  
• Provider satisfaction of using eHealth to improve access to knowledge and expertise to support them in delivering care |
| Healthcare managers and administrators | Enable national and regional health authorities to monitor and respond to outbreaks and other emergencies, in a more rapid manner | • % reduction in time to detect, intervene and contain an emerging disease outbreak or similar threat  
• % reduction in time and cost to report and analyse disease outbreaks to support decision making processes and resource allocation decisions  
• Perceptions of issues/challenges affecting use of eHealth for monitoring and response |
| Support the education, training and development of the country’s health workforce | • % increase in the number of health workers entering the health workforce that have been trained in part through eLearning and other similar e-based training  
• % growth in the number of people enrolling for electronic based education and training programs |

Table 4 provides examples of eHealth output indicators for the various eHealth outcomes and associated indicators listed in the above table.
Table 4 - Example of eHealth output indicators (non exhaustive)

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>eHealth outcome indicators</th>
<th>eHealth output indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumers</td>
<td>§ % increase in the number of primary care-related consultations conducted via telemedicine</td>
<td>§ % of rural and remote communities that have access to fit-for-purpose data / telecommunications connectivity</td>
</tr>
<tr>
<td></td>
<td>§ % increase in the number of rural and remote consumers that can gain access primary care services via telemedicine</td>
<td>§ % of rural and remote communities that have access to computing/access infrastructure</td>
</tr>
<tr>
<td></td>
<td>§ Average reduction in time for a rural or remote consumer to access primary care services as a result of telemedicine</td>
<td>§ % of rural and remote communities that have been educated regarding the availability and benefits of the national telemedicine service</td>
</tr>
<tr>
<td></td>
<td>§ Consumer satisfaction regarding role of technology in improving their access to health services</td>
<td>§ Outputs from consumer satisfaction survey and focus groups</td>
</tr>
<tr>
<td></td>
<td>§ % of rural and remote communities that have access to fit-for-purpose data / telecommunications connectivity</td>
<td>§ Outputs from consumer satisfaction survey and focus groups</td>
</tr>
<tr>
<td></td>
<td>§ % of rural and remote communities that have access to computing/access infrastructure</td>
<td>§ Outputs from consumer satisfaction survey and focus groups</td>
</tr>
<tr>
<td></td>
<td>§ % of rural and remote communities that have been educated regarding the availability and benefits of the national telemedicine service</td>
<td>§ Outputs from consumer satisfaction survey and focus groups</td>
</tr>
<tr>
<td></td>
<td>§ Outputs from consumer satisfaction survey and focus groups</td>
<td>§ Outputs from consumer satisfaction survey and focus groups</td>
</tr>
<tr>
<td>Care providers</td>
<td>§ % increase in the number of electronic health information transactions between healthcare providers</td>
<td>§ % of healthcare providers that have standards-compliant software systems</td>
</tr>
<tr>
<td></td>
<td>§ % reduction in clinician time gathering consumer health and medical history</td>
<td>§ % of consumers and health care providers that have obtained their unique health identifier</td>
</tr>
<tr>
<td></td>
<td>§ % increase in the number of discharge summaries being received by primary care providers</td>
<td>§ % of healthcare providers that have access to fit-for-purpose data / telecommunications connectivity</td>
</tr>
<tr>
<td></td>
<td>§ Provider satisfaction of using eHealth to improve information sharing with other providers</td>
<td>§ % of healthcare providers that have access to fit-for-purpose computing infrastructure</td>
</tr>
<tr>
<td></td>
<td>§ Provider perceptions of issues/challenges impacting their use of eHealth to support improve information sharing</td>
<td>§ % of consumers that have registered to participate in the national EHR system</td>
</tr>
<tr>
<td></td>
<td>§ Outputs from provider satisfaction survey</td>
<td>§ Outputs from provider reference group discussions</td>
</tr>
<tr>
<td></td>
<td>§ Outputs from provider reference group discussions</td>
<td>§ Outputs from provider reference group discussions</td>
</tr>
<tr>
<td></td>
<td>§ % increase in visits to national care provider knowledge portal</td>
<td>§ % of rural and remote healthcare providers that have access to fit-for-purpose data / telecommunications connectivity</td>
</tr>
<tr>
<td></td>
<td>§ % of consultations which are being supported by mobile handset knowledge and decision support applications</td>
<td>§ % of rural and remote health providers that have downloaded and installed a knowledge and decision support applications</td>
</tr>
<tr>
<td></td>
<td>§ Provider satisfaction of using eHealth to improve access to knowledge and expertise to support them in delivering care</td>
<td>§ % of rural and remote healthcare providers that have been educated regarding the availability and benefits of the national care provider knowledge portal</td>
</tr>
<tr>
<td></td>
<td>§ Outputs from provider satisfaction survey</td>
<td>§ Outputs from provider satisfaction survey</td>
</tr>
<tr>
<td></td>
<td>§ Outputs from provider reference group discussions</td>
<td>§ Outputs from provider reference group discussions</td>
</tr>
</tbody>
</table>
Stakeholder | eHealth outcome indicators | eHealth output indicators
--- | --- | ---
Healthcare managers and administrators | % reduction in time to detect, intervene and contain an emerging disease outbreak or similar threat | % of healthcare providers that have access to fit-for-purpose data / telecommunications connectivity
| % reduction in time and cost to report and analyse disease outbreaks to support decision making processes and resource allocation decisions | % of healthcare providers that have access to fit-for-purpose computing infrastructure
| Perceptions of issues/challenges impacting their use of eHealth to monitor, track and respond to disease outbreaks and other emergencies | % of rural and remote healthcare providers that have access to mobile handset / coverage
| | % of healthcare providers that have registered to provide information through the national disease management and reporting portal
| | % of healthcare providers that have downloaded and installed mobile handset diseases recording applications, and have registered to provide data through these applications
| | % of healthcare providers that have been educated regarding the availability and benefits of using the national disease management and reporting portal, and the mobile handset applications
| | Outputs from reference group discussions conducted with members of relevant healthcare manager or administrator organisations.
| | % increase in the number of health workers entering the health workforce that have been trained through eLearning and other similar e-based training

Quantitative indicators minimise the level of ambiguity regarding the results achieved. Some outcomes require the use of qualitative indicators, which are usually derived from surveys, questionnaires, feedback and other evaluation mechanisms, and may also allow for greater insights into the potential cause(s) of divergence from expected results. The choice of indicators is explored further in the following section.

3.5.1 Approach
This activity requires internal analysis to define a set of candidate eHealth output and outcome indicators, which can then be confirmed with stakeholders. It requires working through each eHealth outcome or output, and answering the question of what needs to be monitored or measured to monitor progress towards that outcome or output? This should utilise the knowledge developed in Section 3.2 and 3.3 of the document.

Table 5 provides suggested criteria for identifying and selecting optimal indicators.

| Table 5 - Suggested criteria for selecting optimal indicators |
|---|---|
| Criteria | Meaning |
| Linked to objectives | Indicators should provide information that can be linked to and which support the monitoring and evaluation of eHealth outcomes and outputs |
| Quantifiable | Indicators should be concrete, as opposed to conceptual, and should be measurable and easily expressed in relevant units of measurement |
| Observable | Measurement data exists (or will exist) that will allow an indicator to be derived |
| Reliable | The data used for the indicators should not be arbitrarily derived and should reflect accurate, verifiable information as much as is possible |
| Controllable | Indicators should measure the results of delivering the integrated action plan for eHealth, and should be selected to control for the potential impact of activities that fall outside the scope of the integrated action plan |
Criteria | Meaning
--- | ---
Ongoing and comparable | Indicators should provide information that is comparable and relevant across periods, rather than being “one time” indicators of progress

Consultation with stakeholders should focus on confirming the initial set of candidate indicators and identifying any other indicators that should be considered. This may include confirming that indicators meet the selection criteria outlined in Table 5, in particular that they are observable, reliable and controllable. Subject matter experts and stakeholders may also be consulted to gather their input and opinions on how best to measure a particular eHealth outcome or output.

There is little value in defining a set of indicators for which the required measurement data does not exist, or cannot be regularly collected, analysed and reported upon. This step should consider the reality of the country’s current environment, in particular the challenges or barriers that exist to gathering the required data. The result of this may be the need to consider using a mixture of quantitative and qualitative indicators.

The focus on quantitative and qualitative indicators will likely change over the course of implementing the integrated action plan for eHealth:

- In the short-term a government may have limited access to quality data sources to support the monitoring of quantitative indicators, which in turn necessitates a greater focus on qualitative indicators such as surveys, questionnaires and similar forms of evaluation.
- In the medium- to long-term, however, the implementation of the integrated action plan for eHealth should improve the government’s ability to access quality data sources, which in turn may support greater use of quantitative indicators in monitoring and evaluation.

In reality a country will use a mixture of both quantitative and qualitative measures over the course of implementing the integrated action plan for eHealth. Both types of measures can play a useful role in understanding whether the desired outcomes and outputs are being delivered, as well as providing insights into results obtained. Countries need the appropriate skills and expertise exist to do both types of research.

Where possible it is recommended that governments invest effort in determining the optimal set of quantitative indicators, even if these cannot be monitored at the outset of implementation program. This understanding will assist in:

- Identifying additional requirements for eHealth components to support future monitoring and evaluation efforts. For example, this knowledge may identify additional requirements for reporting within national eHealth applications and services to allow adoption and use to be measured.
- Defining proxy qualitative indicators that can be measured until the time when the required data sources exist to measure the optimal quantitative indicator(s).
CHAPTER 4
Define baseline and target measures for indicators

This stage focuses on defining the baseline and target measures for each of the defined indicators.

<table>
<thead>
<tr>
<th>Indicator focus</th>
<th>Measures focus</th>
<th>Governance focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define indicators to monitor and evaluate</td>
<td>Define baseline and target measures for indicators</td>
<td>Define supporting governance and procedures</td>
</tr>
</tbody>
</table>

Objective

To define baseline and target measures for each indicator that needs to be monitored throughout the delivery of the integrated action plan, along with the timeframes for measuring indicators against targets.

Baseline measures provide an understanding of a country’s starting point and assist in defining realistic and achievable target measures for indicators. Target measures allow evaluation of the progress of implementing the integrated action plan for eHealth (i.e. are we achieving what we set out to achieve?).

Evaluating indicators against targets should occur at regular intervals ensure that the program is delivering tangible results to stakeholders in a timely manner and that potential problems are identified and addressed as soon as possible.

Activities

- Define national monitoring and evaluation timeframes for indicators
- Identify baseline measures for each indicator
- Define target measures for eHealth output indicators
- Define target measures for eHealth outcome indicators
- Confirm baseline and target measures with stakeholders.

Outputs

- Indicator monitoring and evaluation timeframes
- Agreed baseline and target measures for eHealth output and outcome indicators.
4.1 Define national monitoring and evaluation timeframes for indicators

Objective

This step defines the timeframes for national monitoring and evaluation defined in Section 3.3. Monitoring and evaluation at regular intervals throughout the execution of the action plan for eHealth allows a government to:

- Determine whether the integrated action plan is delivering the results that were originally set out to be delivered
- Identify issues and challenges affecting the delivery of results, for which corrective actions can be identified and applied
- Regularly communicate the results to stakeholders, which will assist in building further momentum and support for eHealth.

Recommended outputs

This step should produce a set of timeframes for national monitoring and evaluation. Where possible it is recommended that a single set of consistent timeframes be defined for all indicators however there may be instances in which another timeframe is required due to the nature or requirements of a particular indicator.

Approach

In the first instance it is recommended that monitoring and evaluation timeframes align with the implementation phases defined in the integrated action plan for eHealth (Figure 9).

Figure 9. Aligning national monitoring and evaluation timeframes with implementation phases
For example, the Australian National eHealth Strategy defined a set of implementation targets that aligned with the strategy’s three implementation horizons, which in turn lead to the definition of quantitative and qualitative implementation targets for a timeframes of 3, 6 and 10 years.

While the implementation phases provide a good starting point for defining national monitoring and evaluation timeframes, other factors may require the selection of a different set of timeframes including:

- **Specific stakeholder requirements**, particular those stakeholders providing investment funding for national eHealth and have specific indicator monitoring and evaluation requirements that need to be met as part of the provision of funding
- **Political and funding cycles**, such as government election terms and national funding cycles which may influence when the results of investing in eHealth need to be reported on
- **Level and timing of eHealth implementation activity** within the integrated action plan for eHealth, which in turn drives when indicators should be measured. There is little point having monitoring and evaluation timeframes if nothing is expected to be delivered during those particular timeframes. Conversely, periods of very high eHealth activity may require closer monitoring of particular indicators.

### 4.2 Identify baseline measures for each indicator

**Objective**

This step defines the baseline measure for each eHealth output and outcome indicator. Evaluating the progress of eHealth adoption and the results flowing from this requires identification of the starting point (current performance) for each indicator that will be monitored.

Some countries starting their eHealth journey may determine that the baseline measures for many (or all) of their indicators are zero (or the equivalent for qualitative indicators). Other nations who have already made some investment in eHealth, and have realised some tangible results, will need to establish an appropriate set of baseline measures against which the results of further investment in national eHealth can be effectively measured.

**Recommended outputs**

This step should identify baseline measures for each eHealth output and outcome indicator, which represents the value of that indicator at the commencement of the integrated action plan for eHealth.

**Approach**

This step will require research and analysis to determine baseline measures for each indicator. As a first step, it is suggested that countries determine whether their overall starting position warrants further effort in identifying a baseline measure for a particular indicator.

For example, consider a government that has defined an eHealth outcome indicator to measure the **% increase in the number of primary care-related consultations conducted via telemedicine**. If that country has few or no telemedicine services in place, they may opt to define a baseline measure for this indicator as zero. A country that has already made substantial investment in telehealth, however, would need to research and identify an appropriate baseline measure to allow the results of further investment to be quantified and demonstrated.

Once confirmed that a baseline measure for an indicator is required, a country will need to
analyse historical data that allows a baseline measure to be calculated. If no historical data is available, a country may need to consider using a proxy source of data to infer a baseline measure for the indicator.

Examples of potential sources of historical data include:

- Health ministries and authorities
- Health bodies
- Industry and representative groups
- Advocacy groups
- Research and other peer-reviewed publications
- Non-government organisations (NGOs).

The reality is that many countries starting out on their eHealth journey will not have the people, processes or infrastructure in place to support the collection of data that will enable indicators to be measured. By undertaking the above activities a country may likely identify additional requirements that activities within the integrated action plan for eHealth have to fulfil to support national monitoring and evaluation. Activities within the integrated action plan may therefore be required not only to establish eHealth components but also the people, processes and infrastructure by which eHealth adoption and associated results can be measured going forward.

4.3 Define target measures for eHealth output indicators

Objective

This step defines target measures for each eHealth output indicator across the various monitoring and evaluation timeframes defined in Section 4.1. These target measures allow evaluation of the progress of adoption of eHealth in the country, which in turn influences the results that a country will realise from eHealth. It is for this reason that target measures for eHealth output indicators must be defined prior to defining target measures for eHealth outcome indicators.

*While the targets should be ambitious and represent a goal for implementation, it is important that they are realistic and achievable. If the targets are unrealistic they will become irrelevant and demotivating.*

Recommended outputs

This step should produce a set of ambitious yet achievable target measures for each eHealth output indicator for each of the monitoring and evaluation timeframes defined above in Section 4.1.

Table 6 below provides an example of target measures for eHealth output indicators for a government that is seeking to drive better health outcomes through the adoption of technology that supports the use of telemedicine and other forms of remote healthcare delivery.
Table 6 - Illustrative example of target measures for eHealth output indicators

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>eHealth output indicators</th>
<th>Baseline measure</th>
<th>Target measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of rural and remote communities that have access to fit-for-purpose data / telecommunications connectivity</td>
<td>35%</td>
<td>60% 80% 95%</td>
</tr>
<tr>
<td>Consumer</td>
<td>% of rural and remote communities that have access to computing/access infrastructure</td>
<td>5%</td>
<td>30% 50% 70%</td>
</tr>
<tr>
<td>Consumer</td>
<td>% of rural and remote communities that have been educated regarding the availability and benefits of the national telemedicine service.</td>
<td>0%</td>
<td>30% 50% 70%</td>
</tr>
</tbody>
</table>

**Approach**

This step should begin within internal analysis, though may extend to involve input from subject matter expertise and other health and non-health sector stakeholders involved in delivering activities within the integrated action plan for eHealth. Table 6 outlines a suggested approach for undertaking this step.

**Internal analysis**

Internal analysis should focus on drafting an initial set of target measures for each eHealth output indicator. Defining target measures is an estimation exercise, though can be informed through exploring various questions such as:

- **Baseline measures and timeframe.** Where is the country starting from in regard to this eHealth output indicator and what do we think can be realistically achieved within the monitoring timeframe?
- **eHealth activities:** What other eHealth activities (in the action plan for eHealth) are occurring in the same timeframe and how will this influence what can be achieved?
- **External research:** What have other relevant national programs achieved in regard to this eHealth output indicator and what timeframes were associated with this outcome?
- **Target measures for other eHealth output indicators:** What relationships exist between eHealth output indicators, and how do target measures that have been defined for other indicators influence the targets for this indicator?
This step should also take as input the implementation targets that were defined during the development of the integrated action plan for eHealth (Section 10.3 of Part 2 of the Toolkit). These targets describe, at a broad level, the targets for each implementation phase of the integrated action plan and may provide direction as to the specific targets for eHealth output indicators.

This internal activity should establish a set of draft target measures for eHealth output indicators, supported by rationale as to why these measures represent ambitious yet achievable adoption targets.

**Input from subject matter experts and multi-sector stakeholders**

Subject matter experts and stakeholders can provide insight into achievability of the draft target measures for eHealth output indicators through knowledge of:

- Previous involvement in similar initiatives or change programs, and the outcomes that these were able to deliver.
- The particular risks, challenges and barriers to adoption of eHealth within the health sector
- The propensity for particular parts of the health sector and broader national environment to adoption eHealth
- Other national or international programs, initiatives or events that may influence the adoption of eHealth within the country.

The draft indicators should be reviewed in consultation with relevant subject matter experts and multi-sector stakeholders to refine the target measures and ensure the rationale underpinning targets is sound. This may identify the need to revisit the rationale for particular target measures.

### 4.4 Define target measures for eHealth outcome indicators

**Objective**

This step defines target measures for each eHealth outcome indicator across the various monitoring and evaluation timeframes defined in Section 4.1. These target measures allow the monitoring and evaluation of the tangible results for stakeholders as a result of the adoption of eHealth within the country.

It is important that the targets set for the eHealth outcome indicators accurately reflect the results that can be realised given the target rates of eHealth adoption. Targets should be ambitious but relevant to that which can actually be achieved; not meeting targets because they are unrealistic will cause disengagement of stakeholders and the broader program implementation team.

**Recommended outputs**

This step should produce a set of ambitious yet achievable target measures for each eHealth outcome indicator across each of the monitoring and evaluation timeframes defined above in Section 4.1.
### Table 7. Example of target measures for eHealth outcome indicators

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>eHealth outcome indicators</th>
<th>Baseline measure</th>
<th>Target measures 3 Years</th>
<th>6 Years</th>
<th>10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer</td>
<td>% increase in the number of primary care-related consultation conducted via telemedicine</td>
<td>0%</td>
<td>20%</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td>Consumer</td>
<td>% increase in the number of rural and remote consumers that can gain access to primary care</td>
<td>0%</td>
<td>30%</td>
<td>50%</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>services via telemedicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Approach

The process for identifying target measures for eHealth outcome indicators is similar to that used to identify target measures for eHealth output indicators. The primary difference is that the target measures for eHealth output indicators (defined in the previous section) are a key input. Given it is the adoption of eHealth that will drive results for stakeholders, the targets defined for eHealth outcomes will be driven in part by the target measures for eHealth output indicators.

### Internal analysis

Internal analysis should focus on drafting an initial set of target measures for each eHealth outcome indicator. Again defining the target measures is an estimation exercise that can be undertaken through exploring various questions, such as:

- **Related eHealth output indicators** – What results can be achieve given the target measures that have been defined for related eHealth output indicators?

- **Baseline eHealth outcome indicator measures** – Where is the country starting from in terms of the tangible results that are to be measured? Have tangible results already being delivered that need to be accounted for?

- **Monitoring and evaluation timeframes** – What results can realistically be achieved within the monitoring and evaluation timeframe?

This internal activity should establish a set of draft target measures for eHealth outcome indicators which will reflect the tangible results that can be expected, given the rates of adoption of eHealth anticipated.

### Input from subject matter experts and multi-sector stakeholders

Subject matter experts and stakeholders can provide insight into the potential to realise tangible results for stakeholders, given the levels of eHealth adoption anticipated and targeted by the eHealth output indicators.

Considerations include:

- Given the level of adoption of an eHealth service or solution, what do they anticipate that will mean in terms of delivering health and health-related services to the population?

- Given the change in the ability to deliver clinical services, what does that mean in terms of patient outcomes?

- Does the target proposed accurately reflect the target they would anticipate given the level of adoption anticipated?

The draft list of indicators should be reviewed in consultation with relevant subject matter experts and multi-sector stakeholders to refine the target measures and ensure the rationale underpinning targets is sound. This may identify the need to revisit the rationale for particular target measures.
CHAPTER 5
Define supporting governance and processes

This stage focuses on defining the national governance and processes for monitoring and evaluating the results of implementing the integrated action plan for eHealth.

<table>
<thead>
<tr>
<th>Indicator focus</th>
<th>Measures focus</th>
<th>Governance focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define indicators to monitor and evaluate</td>
<td>Define baseline and target measures for indicators</td>
<td>Define supporting governance and procedures</td>
</tr>
</tbody>
</table>

Objective

To define the governance and processes within which the monitoring and evaluation of eHealth adoption and associated results will be undertaken. Experience shows that monitoring and evaluation of implementation progress may occur at multiple levels and by multiple parties. It is important that these various monitoring and evaluation efforts are planned and executed within an overall national monitoring and evaluation model that supports the monitoring and evaluation of relevant indicators for the program.

Activities

- Define a governance model for national monitoring and evaluation
- Define a process for national monitoring and evaluation

Outputs

- Governance model for national monitoring and evaluation
- High-level process for undertaking national monitoring and evaluation.
5.1 Define a governance model for national monitoring and evaluation

Objective

This step defines a governance model for national monitoring and evaluation of adoption of eHealth and the tangible results flowing from this. This model should describe the governance functions and structure within which national monitoring and evaluation will be undertaken.

Monitoring and evaluation is typically a distributed effort performed by various parties, who may or may not form part of the work program described by integrated action plan for eHealth. There is a need to ensure that the collective efforts of these various parties support and contribute towards national monitoring and evaluation requirements. A governance model provides the structure by which these efforts are aligned to support national monitoring and evaluation.

The governance model for national monitoring and evaluation should be viewed as being distinct from the broader program management function. Program management provides overall governance and oversight of the execution of the integrated action plan for eHealth. Monitoring and evaluation of eHealth adoption and associated results is typically a specialised role that typically sits separately from yet complements broader program management, which also ensures an independent perspective on program progress.

A range of functions should be considered in defining an effective governance model for monitoring and evaluation of eHealth. Examples of these functions are described below in Table 8.

<table>
<thead>
<tr>
<th>Function</th>
<th>Purpose</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring oversight and steering</td>
<td>Provide executive-level oversight in regard to national monitoring and reporting (i.e. input, escalation, review and endorsement of deliverables)</td>
<td>Health Department – departmental executive committee</td>
</tr>
<tr>
<td>Project management</td>
<td>Provide overall management of national monitoring and reporting functions (i.e. planning and scheduling, progress monitoring, financials, risk management)</td>
<td>Health Department – performance management business unit</td>
</tr>
<tr>
<td>National indicator development</td>
<td>Develop national eHealth output and outcome indicators to enable monitoring of the delivery of the integrated action plan for eHealth, and through doing so, the national eHealth vision</td>
<td>Health Department – performance management business unit</td>
</tr>
<tr>
<td>National measures definition</td>
<td>Define national baseline and target measures for eHealth output and outcome indicators, against which national progress can be measured</td>
<td>Health Department – performance management business unit</td>
</tr>
<tr>
<td>National capability development</td>
<td>Develop national monitoring processes and supporting frameworks, tools and templates, and the communication and education of others regarding these processes and timelines</td>
<td>Health Department – performance management business unit</td>
</tr>
<tr>
<td>Activity monitoring and evaluation</td>
<td>Define activity-specific indicators and targets aligned to national indicators and targets, and the subsequent monitoring and reporting of these</td>
<td>Health Department – performance management business unit</td>
</tr>
<tr>
<td>Health sector monitoring and evaluation</td>
<td>Define health sector-specific indicators and targets (if required) aligned to national indicators and targets, and the subsequent monitoring and reporting of these</td>
<td>Health Department Performance management business unit, Public and private care providers</td>
</tr>
<tr>
<td>Non-health sector monitoring and evaluation</td>
<td>Define broader non-health sector-specific indicators and targets (if required) aligned to national indicators and targets, and the subsequent monitoring and reporting of these</td>
<td>Health Department eHealth program management office, Non-health sector infrastructure and service providers</td>
</tr>
</tbody>
</table>
Recommended outputs

The step should produce a definition of the governance model required to monitor and evaluate eHealth during the implementation of the integrated action plan for eHealth. The governance model should identify and describe the:

- Governance mechanisms required to deliver the governance functions described above in Table 8
- The structure and relationships between these various governance mechanisms.

A governance mechanism is a committee, council, team or special group that has the mandate or responsibility to perform one or more of the functions described above in Table 8. The composition of a governance mechanism should be selected to best carry out this mandate or responsibility (Figure 12).

Figure 12 – Sample governance model for the national monitoring and evaluation

In the above example the responsibility for monitoring and evaluation at a national level belongs to the National monitoring and evaluation function. This organisation complements the
program management organisation, and provides an independent view of eHealth adoption and associated results to the program steering committee. This function may be implemented as a new organisational group, or could sit within an existing government entity or eHealth agency. Alternatively, it may be sourced from the market such as via a professional services firm.

Individual eHealth projects, including external projects on which the integrated action plan is dependent, are responsible for monitoring and evaluating their own progress within the overall framework defined by the National monitoring and evaluation function. This framework enables the rolling up of project level performance into the defined eHealth output and outcome indicators which will be reported on at the required monitoring and evaluation timeframes.

Table 9 below provides further details regarding each of the governance mechanisms in the above example.

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health sector leadership</td>
<td>§ Acting as the vocal and visible champion of the national eHealth work program</td>
</tr>
<tr>
<td></td>
<td>§ Accountable for the delivery of national eHealth adoption and associated results</td>
</tr>
<tr>
<td>Program steering committee</td>
<td>§ Provides monitoring and evaluation oversight and steering, which includes:</td>
</tr>
<tr>
<td></td>
<td>§ Provides guidance and input to definition of national indicators, measures, and monitoring and evaluation timeframes</td>
</tr>
<tr>
<td></td>
<td>§ Reviews and endorses national indicators, measures, and monitoring and evaluation timeframes</td>
</tr>
<tr>
<td></td>
<td>§ Assist in resolving risks, issues and conflicts related to monitoring and evaluation</td>
</tr>
<tr>
<td></td>
<td>§ Reviewing and endorsing recommendations regarding corrective actions to the program to address divergences between actual and target targets</td>
</tr>
<tr>
<td></td>
<td>§ Ensure targets are being achieved and that corrective actions are made to the eHealth work program to resolve divergences</td>
</tr>
<tr>
<td>Program management organisation</td>
<td>§ Ensuring monitoring and evaluation processes and tools are aligned and integrated with broader program management processes and tools</td>
</tr>
<tr>
<td></td>
<td>§ Working with the National monitoring and evaluation function to identify options for taking corrective action to address divergences between actual and target indicator measures</td>
</tr>
<tr>
<td></td>
<td>§ Actioning corrective actions that have been endorsed by the program steering committee</td>
</tr>
<tr>
<td>National monitoring and evaluation function</td>
<td>§ Project management (i.e. day-to-day management of activities, progress, financials, risks and issues)</td>
</tr>
<tr>
<td></td>
<td>§ Development of national eHealth output and outcome indicators</td>
</tr>
<tr>
<td></td>
<td>§ Development of baseline and target measures for indicators</td>
</tr>
<tr>
<td></td>
<td>§ Liaising with subject matter experts and multi-sector stakeholders to gain input into definition of indicators and baseline/target measures for indicators</td>
</tr>
<tr>
<td></td>
<td>§ Confirming indicators, and associated baseline and targets, with decision makers</td>
</tr>
<tr>
<td></td>
<td>§ Develops and communicates processes, schedules, templates, tools and other collateral required to support the deployment and operation of the national monitoring and evaluation process</td>
</tr>
<tr>
<td></td>
<td>§ Collate and analyse activity, health sector and non-health sector reporting to report against national indicators and targets, and identify where corrective actions may be required</td>
</tr>
<tr>
<td></td>
<td>§ Develop recommendations regarding corrective actions, and advise the program steering committee regarding these recommendations (Note: The national monitoring and evaluation function does not have accountability for correcting program actions)</td>
</tr>
<tr>
<td></td>
<td>§ Provide expert support in the monitoring, analysis and evaluation of eHealth adoption and associated results</td>
</tr>
<tr>
<td></td>
<td>§ Provide broader research and analytical capabilities to support monitoring and evaluation of eHealth outputs and outcomes, potentially through the provision of data and insights from other national and international eHealth programs</td>
</tr>
<tr>
<td>Subject matter experts</td>
<td>§ Provide input into the definition of, and insights into the achievability of the draft target measures for indicators</td>
</tr>
<tr>
<td></td>
<td>§ Provide input into corrective actions that may be appropriate to address divergences</td>
</tr>
<tr>
<td>Multi-sector stakeholders</td>
<td>§ Provide input into the definition of, and insights into the achievability of the draft target measures for indicators</td>
</tr>
<tr>
<td></td>
<td>§ Provide input into corrective actions that may be appropriate to address divergences</td>
</tr>
<tr>
<td>Mechanism</td>
<td>Responsibilities</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------</td>
</tr>
</tbody>
</table>
| **eHealth project** | ▪ Define eHealth output and outcome indicators and targets aligned to national indicators and targets  
▪ Undertake monitoring and evaluation of activity-level indicators  
▪ Report on activity-level indicators to the National monitoring and evaluation function in accordance with defined processes, schedules, templates and tools |
| **External eHealth projects on which the integrated action plan is dependent** | ▪ Define eHealth output and outcome indicators and targets aligned to national indicators and targets  
▪ Undertake monitoring and evaluation of activity-level indicators  
▪ Report on activity-level indicators to the National monitoring and evaluation function in accordance with defined processes, schedules, templates and tools |
| **Broader health sector monitoring team(s)** | ▪ Same as per External eHealth projects except their focus is on the eHealth outputs and outcomes within a particular part or segment of the country’s health sector |
| **Broader non-health sector monitoring team(s)** | ▪ Same as per External eHealth projects except their focus is on the adoption eHealth outputs and outcomes in other sectors (e.g. ICT industry), and broader social and economic development flowing from eHealth. |

**Approach**

*A suggested approach for defining a governance model for national monitoring and evaluation involves:*

- Confirming the governance functions that will be required to effectively perform national monitoring and evaluation, such as those described earlier in Table 8
- Identifying existing governance mechanisms that could perform one or more of the required governance functions, which in turn may consider various factors such as:
  - **Mandate** – The scope of responsibilities officially given to that governance mechanism
  - **External perception** - The perception of that governance mechanism within the wider health sector, which in turn creates permission for that mechanism to perform its role
  - **Engagement and influence** – The ability of that governance mechanism to engage with, influence and consult with stakeholders
  - **Internal capabilities** – The capabilities of that governance mechanism in order to effectively deliver its responsibilities.
- Defining a pragmatic governance model that will deliver the required governance functions, taking into account:
  - Existing governance mechanisms that can be leveraged
  - New governance mechanisms that need to be developed to address ‘gaps’.
- Clearly define the role and responsibilities of each governance mechanism, and the nature of the relationships and interactions between governance mechanisms.
5.2 Define a process for national monitoring and evaluation

Objective

This step defines the process by which national monitoring and evaluation will be undertaken. National monitoring and evaluation will be an ongoing process, sitting in the background of the implementation program, with monitoring and evaluation undertaken at the agreed monitoring timeframes for each of the indicators that have been identified.

It is not the focus of this step to define detailed processes that will occur at the eHealth activity level, such as within specific initiatives and projects that form part of the integrated action plan. eHealth activities will need to ensure their own specific monitoring and evaluation processes are aligned with the national approach, and with other requirements which form part of the overall governance approach (i.e. alignment with and usage of national frameworks, tools and templates for monitoring and evaluation of eHealth).

Recommended outputs

This step should produce a clear description of the national process for monitoring and evaluation of eHealth during the implementation of the integrated action plan for eHealth (Figure 13).

Figure 13. Example of a national monitoring and evaluation process

- eHealth output and outcome indicators
- Monitoring and evaluation timeframes
- Baseline and target measures for indicators
- Governance model (mechanisms, roles, responsibilities)

Perform detailed planning and preparation regarding monitoring and evaluation of eHealth adoption and associated results

Deliver eHealth activities and measure the impact of these activities on eHealth adoption and the results that follow from this adoption for stakeholders

Analyse and report on actual versus target eHealth adoption and results

Agree corrective actions require to address divergences between target and actual outcomes

Corrective action planning

Progress analysis and reporting

Execution and measurement

Re/refinement to indicators, target measures, and monitoring and evaluation timeframes

Review and agree refinements to indicators, target measures, and monitoring and evaluation timeframes

Planning and initiation

Perform detailed planning and preparation regarding monitoring and evaluation of eHealth adoption and associated results

Chapter 5. Define supporting governance and processes » page 32

© WHO & ITU • Review Version December 2011
### Table 10 – Example of national and activity-level monitoring and evaluation activities

<table>
<thead>
<tr>
<th>Process</th>
<th>National-level (non-exhaustive)</th>
<th>Activity-level (non-exhaustive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning and initiation</td>
<td>§ Define and communicate national evaluation schedule and milestones</td>
<td>§ Establish local monitoring and evaluation roles and responsibilities</td>
</tr>
<tr>
<td></td>
<td>§ Develop and communicate national monitoring and evaluation frameworks, tools and templates</td>
<td>§ Define detailed monitoring and evaluation timelines and milestones that align with national timings</td>
</tr>
<tr>
<td></td>
<td>§ Provide advice and support to activity-level teams in defining appropriate indicators and targets that support national level indicators and targets</td>
<td>§ Develop and deploy detailed monitoring and evaluation procedures, tools and templates that align with national requirements</td>
</tr>
<tr>
<td></td>
<td>§ Provide advice and support to activity-level teams in defining appropriate indicators and targets that support national level indicators and targets</td>
<td>§ Define detailed indicators that support measurement of national indicators</td>
</tr>
<tr>
<td></td>
<td>§ Establish local monitoring and evaluation roles and responsibilities</td>
<td>§ Define target measures that support national targets</td>
</tr>
<tr>
<td></td>
<td>§ Define detailed monitoring and evaluation timelines and milestones that align with national timings</td>
<td>§ Define indicator measurement approaches</td>
</tr>
<tr>
<td>Execution and measurement</td>
<td>§ Collect measurement data whilst activity is being undertaken</td>
<td></td>
</tr>
<tr>
<td></td>
<td>§ Develop and track current indicator measures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>§ Identify and resolve issues in developing current indicator measures</td>
<td></td>
</tr>
<tr>
<td>Progress analysis and reporting</td>
<td>§ Collate activity-level reports on actual versus target performance for indicators</td>
<td>§ Develop reports that describe actual versus target performance for activity-level indicators</td>
</tr>
<tr>
<td></td>
<td>§ Liaise with activity-level teams to explore performance and understanding causes of divergences</td>
<td>§ Identify causes of divergences in actual and target performance at the activity level</td>
</tr>
<tr>
<td></td>
<td>§ Develop reports that describe actual versus target performance for national-level indicators</td>
<td></td>
</tr>
<tr>
<td></td>
<td>§ Identify causes of divergences in actual and target performance at the national level</td>
<td></td>
</tr>
<tr>
<td>Corrective action planning</td>
<td>§ Liaise with activity-level teams to understand corrective actions that can be taken to address activity-level and program-level to divergences</td>
<td>§ Identify local actions that can be taken to address divergences in actual and target performance for activity-level indicators</td>
</tr>
<tr>
<td></td>
<td>§ Identify and assess program-level corrective actions to address divergences in actual and target performance at the national level</td>
<td>§ Identify program-level actions that can be taken to address divergences in actual and target performance for activity-level indicators</td>
</tr>
<tr>
<td></td>
<td>§ Assess impact, costs and risks of implementing program-level corrective actions</td>
<td>§ Assess impact, costs and risks of implementing local and program-level actions for the activity in question</td>
</tr>
<tr>
<td></td>
<td>§ Review and gain endorsement program-level corrective actions with the program steering committee</td>
<td>§ Manage changes in scope (if required) to implement corrective actions</td>
</tr>
<tr>
<td></td>
<td>§ Manage changes in scope of national program (if required) to implement corrective actions</td>
<td></td>
</tr>
<tr>
<td>Refinement</td>
<td>§ Identify national target measures for indicators that may be unrealistic or unachievable within the required timeframe</td>
<td>§ Identify activity target measures for indicators that may be unrealistic or unachievable within the required timeframe</td>
</tr>
<tr>
<td></td>
<td>§ Liaise with activity-level teams to understand changes to activity-level targets</td>
<td>§ Refine target measures for indicators to be realistically achievable</td>
</tr>
<tr>
<td></td>
<td>§ Understand implications on national level target measures for indicators</td>
<td>§ Agree changed target measures for indicators for future monitoring periods.</td>
</tr>
<tr>
<td></td>
<td>§ Develop revised national target measures for Indicators</td>
<td></td>
</tr>
<tr>
<td></td>
<td>§ Review and gain endorsement of revised national target measures with the program steering committee.</td>
<td></td>
</tr>
</tbody>
</table>
Approach

Defining a pragmatic process for the national monitoring and evaluation of eHealth is a complex undertaking, particularly for large-scale eHealth programs in which a range of parties will be involved in monitoring and evaluation.

The process described in Figure 1213 can assist countries to identify and define the various processes and activities that will need to be implemented at a national- and activity-level to support monitoring and evaluation. These should be mapped back to the various governance mechanisms defined in Section 5.1 to ensure roles and responsibilities are clearly understood. Countries may also find it useful to undertake research into how the monitoring and evaluation of eHealth have been approached by other countries.
CHAPTER 6
Conclusion

This Toolkit has been developed as a guide to assist countries in developing a vision for national eHealth, an integrated plan to achieve that vision, and a framework by which results can be monitored and evaluated. Like all strategies and plans, the outcomes of this Toolkit are not static and represent a point-in-time understanding of what a country needs to achieve to address their particular goals and challenges. For example, the various eHealth visions, strategies and plans that are referenced in Appendix C represent a point-in-time view for each of the countries that developed them.

Changes in a country’s strategic context will require updating the vision for eHealth and associated action plan so that it remains relevant. This requires understanding the key triggers for refreshing the vision and integrated action plan, whether specific events that change a nation’s strategic context for eHealth or a defined period of time after which a revision is required.

Ongoing engagement and collaboration with key health and non-health stakeholders must also be maintained. Success in implementing a national eHealth vision is heavily dependent on having the continued support and guidance of stakeholders, and thus is not something that concludes following the development of a national eHealth strategy.

Continued communications with stakeholders forms an important part of ongoing stakeholder engagement. As emphasised in this part of the Toolkit, stakeholders should be regularly informed on the progress of the program, and in particular, any impacts or results that implementation of the progress has realised. This ensures transparency regarding progress on national eHealth, which is essential to maintaining stakeholder support and momentum for further activity and investment in eHealth.
APPENDIX A.

Results Based Management

Results Based Management (RBM) has become increasingly important for the United Nations as they have sought to improve their ability to respond to new demands within the limits of resource constraints, and to demonstrate that they have delivered on expectations. It is also of direct relevance to the establishment of monitoring and evaluation for a national eHealth program.

The goal of RBM

The goal of results based management is to shift managerial and administrative emphasis from a process-focused approach to one based on performance and results (outcomes). It is a management strategy that focuses on performance and achievement of outputs, outcomes and impacts. Organisations and programs that apply results based management seek to:

- Focus the organisation or program efforts and resources on expected results
- Improve the effectiveness and sustainability of operations (or program activities)
- Improve accountability for resources used.

Key concepts in RBM

Figure 1314 below highlights the key concepts in RBM, and lays out a logical framework in which to guide the planning and execution of a result based management approach.

**Figure 14 – Logical framework for results based management**
Results-based management is a planning process from top-down and a management process in the reverse direction. Planning starts with defining objectives -- future end-states, deciding what accomplishments are expected if the objective is to be achieved, determining which output will lead to those accomplishments, defining the activities necessary to produce those outputs and, finally, identifying the inputs that are necessary to carry out the activities.

The management process is exactly the opposite. The inputs are acquired and deployed to carry out the activities, the activities lead to the production of outputs and, if they are well designed and executed, the output will lead to the expected accomplishments (or expected results).

Table 11 below defines a number of the key concepts in result based management frameworks.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>An overall desired achievement involving a process of change aimed at meeting certain needs of identified end-users within a given period of time (i.e. the situation that would be observed at the end of a specific period)</td>
</tr>
<tr>
<td>Expected accomplishment</td>
<td>A desired outcome involving benefits to end-users, expressed as a quantitative or qualitative standard, value or rate. The direct consequence or effect of the generation of outputs and lead to the fulfilment of a certain objective. It is a change that can be observed to have taken place. It is something that has to happen if an objective is to be achieved</td>
</tr>
<tr>
<td>Indicator of achievement</td>
<td>The measures of whether and/or the extent to which the objectives and/or expected accomplishments have been achieved. Correspond either directly or indirectly to the objective or the expected accomplishment for which they are used to measure performance. All results should have a corresponding indicator of achievement.</td>
</tr>
<tr>
<td>Results achieved</td>
<td>The actual outcome that delivers benefits to end-users, expressed as a quantitative or qualitative standard, value or rate. It describes what has actually been achieved.</td>
</tr>
<tr>
<td>Verification of Results</td>
<td>The actual measures that demonstrate that a particular result has been achieved.</td>
</tr>
<tr>
<td>Output</td>
<td>Tangible products or services delivered by a program to end-users in order to induce outcomes. Outputs are produced by activities.</td>
</tr>
<tr>
<td>Activity</td>
<td>An action taken to transform inputs into outputs</td>
</tr>
<tr>
<td>Input</td>
<td>Personnel and other resources necessary for producing outputs and achieving accomplishments. Inputs are the objects of expenditure that are used to undertake activities.</td>
</tr>
</tbody>
</table>

Monitoring and evaluation in RBM

*Monitoring and evaluation - or M&E as it sometimes called - is an integral part of RBM:*

- Monitoring is the continuing function of collecting data indicating the extend of progress and achievement of objectives, and progress in the use of allocated funds
- Evaluation is the process that seeks to determine as systematically and objectively as possible the relevance, effectiveness, and impact of an activity in light of its goals, objectives and accomplishments.

The focus of M&E is best demonstrated through understanding its relationship to the key concepts that were introduced in the previous section (Figure 1415).
Monitoring is primarily focused on implementation and the measurement of execution. Evaluation is primarily focused on measuring the change and impact that implementation has had in terms of the objectives and results that were originally sought from the program.

Establishing an effective M&E program requires a number of activities that need to be undertaken, including:

- Understanding the expected accomplishments of the program
- Ensuring that expected accomplishments can be really be evaluated
- Understand and reviewing performance indicators to ensure that are pragmatic, simple and achievable
- Determine when the program will be evaluated, which may be a specific times in the program or at other key events in the program (i.e. problem is perceived, results are supposed to have happened)
- Planning acquisition and collection of information to support evaluation, including:
  - Data sources
  - Collection method
  - Baseline data for performance indicators
  - Time required for collection
  - Responsible organisation / personnel
- Collect and analyse evaluation data, and draw appropriate conclusions
- Develop recommendations (including corrective actions) and lessons learned.
## Appendix B

### Examples of eHealth Strategies

A number of countries have made their eHealth Strategies or eHealth Roadmaps publicly available via the internet. The following table lists a selection of these publications as examples of how different countries have documented their eHealth Strategies and Roadmaps. It should be noted that none of these have been developed using the approach proposed in this toolkit as they pre-date the toolkit’s development.

**Table 13. Examples of eHealth strategies**

<table>
<thead>
<tr>
<th>Country</th>
<th>Type</th>
<th>Link</th>
<th>When Published</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Commission</td>
<td>Repository of eHealth strategies and priorities for EU member states</td>
<td><a href="http://www.ehealth-era.org/database/database.html">http://www.ehealth-era.org/database/database.html</a></td>
<td>N/A</td>
</tr>
<tr>
<td>Finland</td>
<td>eHealth Roadmap- Finland</td>
<td></td>
<td>2007</td>
</tr>
<tr>
<td>Kenya</td>
<td>National eHealth strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>BAG/National Ministry of Health</td>
<td></td>
<td>2007</td>
</tr>
</tbody>
</table>
## APPENDIX C

### Definition of terms used

<table>
<thead>
<tr>
<th>Part</th>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I: Establishing a national eHealth vision</td>
<td>Strategic goals and challenges</td>
<td>Strategic health sector goals and challenges and/or other national development goals that can be best supported by eHealth. While there may be many different health sector goals and challenges, only some of these could be directly supported by eHealth and where a national eHealth vision will have the most impact.</td>
</tr>
</tbody>
</table>
|                                           | eHealth Outcomes                            | What will be achieved or changed through using eHealth, and how will the health system and services change by:  
- Improving the information flows within the health sector  
- Improving electronic access to health services and information. |
|                                           | eHealth Vision                              | High-level statement that describes the strategic benefits and outcomes for the country in general or for the health system and population through the strategic changes to health system and services introduced by eHealth (eHealth Outcomes). |
|                                           | National eHealth environment                | The national eHealth environment is made up of eHealth components representing the enabling and foundation elements for eHealth as well as technical capabilities that form together an "ecosystem" for eHealth in a country. |
|                                           | eHealth Components                          | The building blocks of a national eHealth environment which will allow the eHealth outcomes to be achieved. They describe what is needed to be introduced or strengthened to achieve the eHealth vision in terms of:  
1. Leadership and governance  
2. Strategy and investment  
3. Services and applications  
4. Infrastructure  
5. Standards and interoperability  
6. Legislation, policy and compliance  
7. Workforce |
|                                           | Strategic Recommendations                    | Strategic recommendations describe the high–level actions required to deliver the national eHealth environment. These actions may describe how new eHealth components will be delivered, or how existing eHealth components will be repurposed or extended. |
| Part II: Developing an integrated action plan for eHealth | Action Lines                               | Broad areas to group national activities of similar focus and intent that are required to deliver a nation’s eHealth vision                                                                                                                                                  |
|                                           | eHealth Outputs                             | The specific achievements, deliverables, results or changes required to deliver a strategic recommendation.                                                                                                                                                                     |
|                                           | Activities                                  | The set of activities which need to be undertaken to deliver a particular output                                                                                                                                                                                        |
| Part III: National eHealth monitoring and evaluation guidelines | Output Indicators                           | Indicators that provide insights into the adoption and take-up of eHealth within the country’s health sector                                                                                                                                                                  |
|                                           | Outcome Indicators                          | Indicators that provide insights into the tangible results for stakeholders that arise from the adoption and usage of eHealth                                                                                                                                              |