Vanuatu
Ministry of Health

Health Information Strategic Plan

2016 – 2020

Acronyms and abbreviations

CRVS   Civil registration and vital statistics

CSO   Civil Status Office

DHIS2   District health information system

HIS   Health information system

HIMS   Hospital Information Management System

HMN   Health Metrics Network

HSS   Health Sector Strategy

ICT   Information Communication Technology

IT   Information technology

MOH   Ministry of Health

NSO   National Statistics Office

NSDP   National Sustainable Development Plan

OGCIO   Office of the Government Chief Information Officer

PHIN   Pacific Health Information Network

PSC   Public Service Commission

SDGs   Sustainable Development Goals

TA   Technical assistance

TORs   Terms of reference

VCNE   Vanuatu Centre for Nursing Education

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Key points

Problem statement

In 2007, the health information system (HIS) was assessed using the HMN Assessment tool. The **overall score of the assessment was 41% ('present but not adequate'), indicating that the system needs improvement in all areas**. Key gaps identified include the policy and legislative environment, the amount and capacity of local staff at the national and provincial level, the ability of the health system to track and provide patient-level data, and the dissemination and use of this data to monitor disease burden and inform the policy agenda.

HIS vision

"An integrated, sustainable, well-resourced HIS that collects, analyses and disseminates high quality, user-friendly information in a timely way for better health planning and management, and that empowers people to make healthy life choices."

Priority actions (2016-2017)

1. Establish a cross-sectoral HIS Committee
2. Identify local staff for training/scholarships to establish and maintain databases
3. Conduct a training needs assessment for all HIS related staff
4. Liaise with OGCIO to seek local IT support
5. Develop a set of endorsed data standards and definitions to ensure compliance
6. Develop and endorse a core indicator set that aligns with global targets and meets local needs.
7. Revise existing HIS reporting forms in all health facility types to reduce duplicate data collection and reduce ambiguity in meaning
8. Appoint permanent HIS Officers at all levels
9. Produce annual reports to government
10. Undertake a review of the Hospital Information Management System
11. Incorporate HIS information into MOH planning/budgeting processes
12. Dissemination of all HIS reports to managers and clinicians on a regular basis
13. Allocate budget for the HIS Unit at the national level and HIS activities at the provincial level with dedicated account codes for monitoring and evaluating HIS activities
14. Develop health information policy in consultation with key stakeholders

1   Introduction

1.1   What is a health information system?

A health information system (HIS) refers to any system that captures, stores, manages or transmits information related to the health of individuals, or activities of organizations that work in the health sector. This definition includes things such as district-level routine information systems, disease surveillance systems, and also includes laboratory information systems, hospital patient administration systems and human resource management information systems. It must be remembered that a HIS is much more than a computer database or IT system: it also includes the resources (human and financial) required to collect data; the policies and procedures surrounding data analysis; the quality of reports produced; the use of information by planners and decision makers; and so on.

Overall, a well-functioning HIS is an *integrated effort to collect, process, report and use health information and knowledge to influence policy and decision-making, program action, individual public health outcomes, and research*.[1] Good decision-making at all levels of a health system requires reliable health information that is disaggregated by key variables (such as gender, age and socioeconomic characteristics). At a policy level, decisions informed by evidence contribute to more efficient resource allocation and, at the service delivery level, information about the quality and effectiveness of services can contribute to better health outcomes.

The Health Metrics Network, in their Framework and Standards for Country Health Information Systems,[2] has defined six components of a HIS (Figure 1).
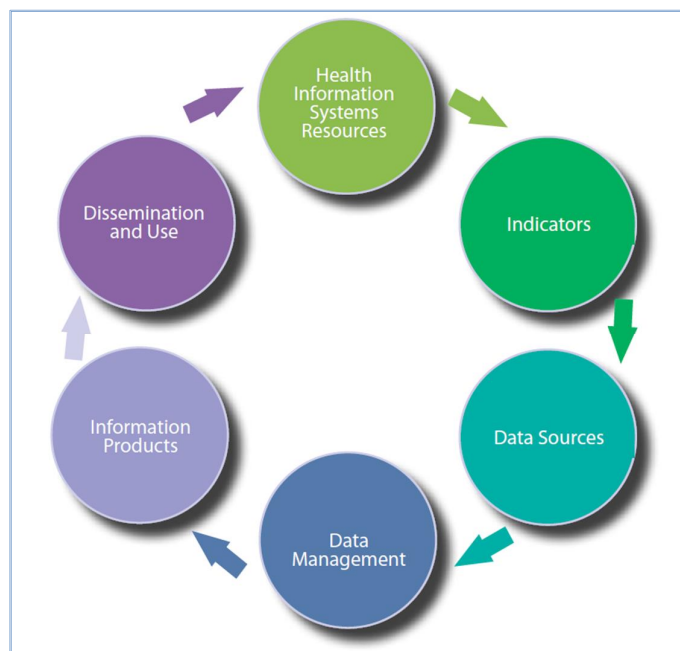

FIGURE 1: COMPONENTS AND STANDARDS OF A HEALTH INFORMATION SYSTEM

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[1] Adapted from the PHIN Regional Health Information Systems Strategic Plan, available at www.phinnetwork.org
[2] Health Metrics Network (2008). *Framework and Standards for Country Health Information Systems, Second Edition.* Geneva: World Health Organization.

1.2   Information needed by the public and the health system

Within the health system, health workers need a wide range of information about their patients to be immediately available. This information is often held in many different locations (laboratories, primary care clinics, hospitals) and reliance on traditional paper records limits the extent to which health workers can share information in a useful, timely and seamless way. Health professionals also need to be quickly informed about urgent health matters such as major changes in practice guidelines, an infectious disease outbreak or a natural disaster.

Service planning, management and evaluation are highly dependent on the availability of good health information. Service managers need information for planning and evaluation, needs assessments, and human resource management. Information on the quality and accessibility of services, as well as their cost, are also vital in making decisions on resource allocation. Senior decision-makers need information on the performance of health services, on health determinants and on the needs of the population when developing policies to influence the future direction of health services. This information is essential for the identification of health priorities, and is invaluable when developing new health policies. Good quality health information is also essential on an ongoing basis to provide support to the Ministry of Health (MOH) in providing quality services in the Vanuatu.

Furthermore, members of the community have an interest in accessing their own personal health information, and understanding health issues that relate to where they live or work; such as rates of diseases in certain areas and health services available.

1.3   The six strategic priorities

In line with the Components and Standards of a health information system and the results of the HIS Rapid Assessment conducted, the six strategic priorities and key outcomes of this strategic plan are to:

1. **Strengthen HIS resources:** sustainable financing of the system; policies and regulations are developed; institutional capacity and workforce development are enhanced; sustainable HIS infrastructure is supported.
2. **Strengthen national minimum core indicators:** current indicators are reviewed; relevant indicators for provincial-level management are developed; a clear and explicit official strategy for measurement and analysis is developed.
3. **Improve HIS data sources:** partnerships with other agencies and departments are developed; core dimensions are defined; capacity and practices are enhanced; dissemination, integration and use are improved.
4. **Enhance data management:** procedures are written and implemented; data security procedures are developed; communication links between health facilities and hospitals are improved.
5. **Improve the quality of information products:** data is compiled, managed and analysed to produce information; information is integrated and used as evidence; information is packaged in a variety of formats; annual reports are produced using standard templates.
6. **Increase dissemination and use:** senior managers and policy-makers demand HIS information; HIS summary reports are distributed regularly; health information is used in planning and resource allocation processes.

2 Vision for the Vanuatu the HIS

2.1 Vision

Having a vision statement is important as it helps to lead strategy implementation by providing an overall statement of what and where the system will be in five years. The following vision statement was developed at the HIS Strategic Planning Workshop held in November 2015:

> "An integrated, sustainable, well-resourced HIS that collects, analyses and disseminates high quality, user-friendly information in a timely way for better health planning and management, and that empowers people to make healthy life choices."

A slogan that is simple to remember and repeat was also felt to be necessary:

> "Reliable information, better health".

3   Problem statement and challenges

As with many health information systems in the region, previous investments in Vanuatu's HIS have focused on data collection processes, with limited emphasis on data integration or information use. The HIS is currently fragmented, with routine information flow being segregated due to the existence of multiple information systems set up by various health programs. In addition, many key pieces of health information are not collected or summarised at the facility or provincial level, including many events related to inpatient and outpatient services, disease morbidity, births, deaths, and causes of death. It is important to note that the current data flow is predominately in only one direction; with health staff routinely sending data to the national level but receiving very little feedback.

In 2007, the HIS was assessed using the HMN Assessment tool. The **overall score of the assessment was 41% ('present but not adequate), indicating that the system needs improvement in all areas** (**Figure 2**). Key gaps identified include the policy and legislative environment, the amount and capacity of local staff at the national and provincial level, the ability of the health system to track and provide patient-level data, and the dissemination and use of this data to monitor disease burden and inform the policy agenda.

Since this time, other issues have emerged that have further undermined the effective functioning of the Vanuatu HIS, including the 'failure' of the hospital information system that had been implemented and linked at all hospitals.
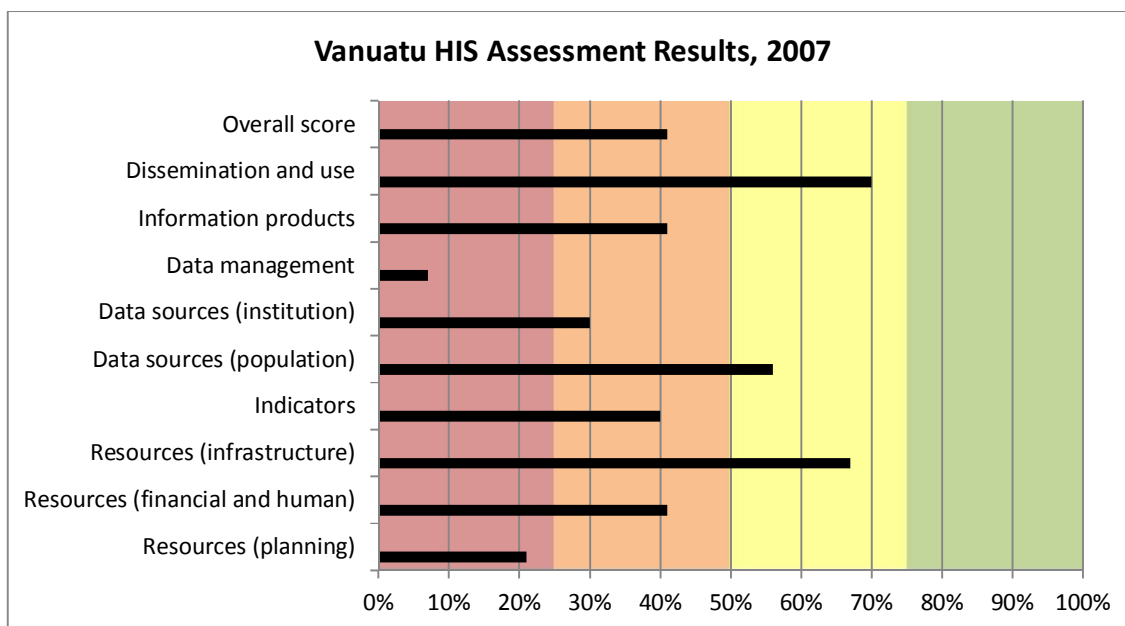
FIGURE 2 RESULTS FROM THE HEALTH METRICS NETWORK ASSESSMENT, VANUATU, 2007

4   HIS contributions to MOH strategic objectives

4.1   Core principles and goals of the health system

The MOH is currently developing their next Health Sector Strategy (HSS) for the period 2016-2020. With a Mission to "protect and promote the health of all people in Vanuatu", the 2010 – 2016 strategy has five core values:

1. A consumer focus
2. Equity
3. Quality
4. Integrity
5. Efficiency.

The broad objectives for the sector are to:

- Improve the health status of the population
- Ensure equitable access to health services at all levels of services
- Improve the quality of services delivered at all levels
- Promote good management and the effective and efficient use of resources.

These objectives will be achieved through three main strategies:

1. Organisational re-structuring and strengthening
2. Better coordination with our partners
3. Development of our operational and strategic planning processes.

The measurement of the success of the new strategy will require information from all parts of the health system. There will be a strong emphasis on the provincial level, with the first point of data analysis happening here.

As the new HSS is developed, it will be important to ensure that information needs are considered and incorporated into the plan, and that suitable monitoring and evaluation information is built into any new data collection systems.

5 HIS activity schedule and delivery on HIS Strategy

The following issues have been identified through the assessment, subsequent committee discussions and meetings, and the HIS Strategy Workshop held in November 2015. Many of the issues will require a range of actions to be undertaken, while many of the actions that are identified may address several different issues. Section 5.2 provides a full outline of each priority area and the associated activities.

5.1 Priority areas

Strategic Priority 1: Strengthen HIS resources
HIS resources include the legislative, regulatory and planning frameworks required for a fully functioning system, and the resources required to ensure it remains functional. This includes personnel, financing, logistics support, information and communications technology, and coordinating mechanisms within the system. Key short-term activities and outputs for this priority include:

- Clearly defined roles and responsibilities for HIS staff and appoint staff to permanent positions
- Establishment of an effective governance mechanism (representative national HIS committee)
- Develop Health Information Policy covering all relevant aspects of HIS
- Sustainable funding for ongoing maintenance and operation of the HIS through the creation of a budget-line for HIS activities at the national and provincial levels
- Review the status of the current hospital information management system; conduct a feasibility study, user-needs assessment, and determine technical requirements for potential new electronic information system.

Strategic Priority 2: Strengthen national minimum core indicators
A minimum set of core indicators is a set of data elements that are used, usually at the national level, for collection and reporting on key aspects of health system delivery. A minimum indicator set can support comparisons or 'benchmarking' across organizations, systems or countries. In the immediate- and short-term, key activities include the review of current core indicators and development of relevant indicators for national and provincial-level management that also align to global indicators.

Strategic Priority 3: Improve HIS data sources
Health information systems often rely on a range of data sources. These can generally be divided into two main categories: (1) population-based data (censuses, civil registration and population surveys) and (2) institution-based data (individual, service and resource records). Activities in this area planned are to revise existing HIS reporting forms and update DHIS2 database to ensure all information needed for local and national indicator reporting is being collected in a standardized way.

Strategic Priority 4: Enhance data management
Data management covers all aspects of data handling from collection, storage, quality-assurance and flow; to processing, compilation and analysis. Activities planned related to this priority include:

- Development of procedures for data management, including security and retention of data
- Provision of training on medical record documentation to current health workers, as well as nurses during training.

Strategic Priority 5: Improve the quality of information products

A key aspect of any HIS is the integration, synthesis, analysis and interpretation of information from multiple sources, examining inconsistencies, identifying and accounting for biases, and summarizing health situations and trends. This information can then be made available through user dashboards, reports, queries and alerts. Ensuring that information is packaged in a variety of formats is a key activity for this strategic priority. Under this priority area, key activities include:

- Data is compiled, managed and analysed to produce information
- Information is integrated and used as evidence
- Information is packaged in a variety of formats
- Annual reports are produced using standard templates.

Strategic Priority 6: Increase dissemination and use

As the value of health information is enhanced by making it readily accessible and through providing incentives for, or otherwise facilitating, information use, the HIS will be enhanced by:

- Ensuring senior managers demand health information
- HIS summary reports are distributed regularly
- Health information is used in planning and resource allocation processes.

5.2   Suggested actions and strategic priority area

The following priority areas and actions were identified as the highest priority through discussions with the stakeholders at the HIS Strategy Workshop held in November 2015. Many of the priority areas will require a range of actions to be undertaken, while many of the actions are identified may address several different priorities.

Strategic priority area	Issue	Suggested Actions
(1) Resources	Current HIS roles are not adequate or sustainable: - Issues with high staff turnover (HIS manager on contract basis) - Changes in Government impact HR - Slow PSC process for recruitment	Appoint a permanent national HIS Manager
		Appoint permanent HIS Officers in each province
		Develop and endorse TORs for all HIS positions
		Revise the HIS Unit's organisational structure and lines of accountability from the national to the provincial level
	No national cross-sectorial HIS Committee with no national leadership	Establish a cross-sectorial HIS Committee, including - Developing TORs including members by role/titles/position (not name) - Developing guidelines on proper hand-over processes for new members - Allocation of funds for the Committee from the HIS budget - All developed TORs, function, guidelines, etc., to be endorsed by MOH Executive
	No existing national HIS policy - National Health Sector Strategy doesn't specifically include HIS (indicators have been set; HIS will play a role in measuring these) - No HIS policy to provide guidelines to service delivery areas - Governance of HIS is currently weak	Develop Health Information Policy in consultation with key stakeholders, including: - Emphasis on confidentiality - Include CRVS and ICT issues - Include the SDGs - Include national framework on how to use data from different sectors and programs - Plan for periodic monitoring of this policy through the HIS Committee - Include provision for private health sector reporting (may require legislation)
	No dedicated budget for HIS within the MOH budget	Allocate budget for HIS Unit at the national level and HIS activities at the provincial level with dedicated account codes for monitoring and evaluating HIS activities
	Too few IT officers to support ICT in health, and none located at the provincial level	Liaise with the OGCIO to seek local IT support
	Current Hospital Information Management System is failing and beyond repair.	Conduct a feasibility study, user-needs assessment, and determine technical requirements for potential new electronic hospital information management system.
(2) Indicators	No national core health indicators defined and no national strategy for collection	Develop and endorse a core indicator set that align with global targets and meets local needs
		Incorporate HIS information into MOH planning/budgeting process
		Align indicator development to MOH Health Sector Strategy
		Develop a standardized reporting format for all health indicators at all levels and across programs
(3) Data sources	Current data collection forms and their completion by	Revise existing HIS reporting forms in all health facility types to reduce duplicate data collection

Strategic priority area	Issue	Suggested Actions
	staff are not standardised and often create duplicate data collection	and reduce ambiguity in meaning. Then update the DHIS2 database to ensure all information needed for local and national indicator reporting is being collected in a standardized way
(4) Data management	No policy or procedures currently exist relating to health data storage and use	Develop data management procedures that address: • Information access protocols • Information/record ownership • Retention and destruction of information • Mandatory provision of information by all health care providers to the HIS Unit/MOH
	Poor quality of medical records documentation (handwriting, standard format for dates, etc.)	Develop standard forms for collecting patient information across health care settings
		Provide training on medical record documentation to all current health workers
		Review nursing curriculum and incorporate documentation and information use components
	Limited defined, locally appropriate mechanisms in place for data transmission and storage	Identify local staff for training/scholarships to maintain databases
(5) Information products	No national health data standards and definitions are used across all health data collections	Develop a set of endorsed data standards and definitions and ensure compliance
	Limited tools and procedures available to assess the quality of data	Create a supervision mechanism to ensure the completeness of reporting in a timely manner, using data completion rates available in DHIS2
	HIS staff at all levels need capacity building to transform data into information	Conduct a training needs assessment for all HIS related staff
		Establish a training program to meet the needs identified through the training needs assessment
		Develop an ongoing training program for all health workers in the use of data for evidence-based decision making
(6) Dissemination and use	Health managers and clinicians are not using information for planning, priority setting or resource allocation	Develop clear policy direction for all MOH partners addressing HIS issues
		Sharing of all HIS reports to managers and clinicians on a regular basis
		Produce an annual report to government

5.4   Proposed actions by priority

The table below lists each of the suggested actions in rough order of priority based on improvement goals. Actions have been grouped into sections according to implementation timeframe. The priorities follow a logical order of progress. They also take into account upcoming and concurrent MOH developments that will present opportunities or will necessitate that action be taken. Details have been provided for all actions requiring immediate implementation (2016), and those marked as initial priorities for 2017. As part of the strategy's ongoing monitoring and evaluation and review process, the HIS Committee will need to update the detailed action plan every six months.

Improvement Goal	Actions/ Activities	Sequence of Steps	Timeframe	Resource Requirements			Pre-requisites	Risk / mitigation strategy
				Agencies	Training	Funding		
Actions for immediate implementation (second half of 2016)								
Improved governance of HIS nationally	1. Establish a cross-sectorial HIS Committee (or mechanism for oversight and guidance)	1. Develop TORs for the HIS Committee including members by role/titles/position (not name) 2. Develop guidelines on proper hand-over processes for new members 3. Allocation of funds for the Committee from the HIS budget 4. All developed TORs, function, guidelines, etc., to be endorsed by MOH Executive	Jul - Nov 2016; establishment phase - 5 months; meetings and regular review - ongoing	MOH Executive; HIS Unit; NSO; CSO; OGCIO	None	Funding for meetings of the HIS Committee	None	*Risk*: 1) Change in MOH personnel risks disruption to committee; 2) No appetite for another committee *Mitigation*: 1) Guidelines on proper hand-over processes; 2) Ensure MOH executive support; if needed, incorporate committee functions into an another already established committee
Locally appropriate systems in place for data storage and transmission	2. Identify local staff for training/scholarships to establish and maintain databases	1. Conduct an audit of existing staff skills and training in database management 2. Undertake a training needs assessment 3. Develop a training plan based on the outcome of the assessment 4. Seek funding to implement the plan	Jul – Dec 2016; 6 months *(Activity commenced and will be ongoing)*	HIS Unit; HIS Committee; Donor partners	Dependent on the outcome of the training needs assessment	Training and scholarship funding	Undertake in combination with (3) data transformation training needs assessment; Ensuring (8) appointment	*Risk*: Limited number and high turnover of staff means investment in capacity is sometimes lost. *Mitigation*: Ensure a pool of permanent staff

							of permanent HIS officers at all levels would also be useful	are trained to cover for when staff leave and to build broader institutional capacity and memory
HIS staff at all levels are able to transform data into information that is useful for decision-making	3. Conduct a training needs assessment for all HIS related staff	1. Conduct an audit of existing staff skills and training in data transformation 2. Undertake a training needs assessment 3. Develop a training plan based on the outcome of the assessment 4. Seek funding to implement the plan	Jul – Dec 2016; 6 months *(Activity commenced and will be ongoing)*	HIS Unit; HIS Committee; Donor partners	Dependent on the outcome of the training needs assessment	Training and scholarship funding	Undertake in combination with (2) database management training needs assessment; (8) Appointment of permanent HIS officers at all levels would also be useful	As per activity 2
Adequate ICT support available for MOH ICT investments	4. Liaise with OGCIO to seek local IT support	1. Set up meetings with the relevant area of the OGCIO to discuss IT support at national and provincial levels	Oct – Dec 2016; 3 months	MOH IT, OGCIO	None	None	None	*Risk*: OGCIO unable to support additional IT needs *Mitigation*: Utilise existing support better. Seek out other sources.
Actions for short-term implementation (2016-2017)								
National health data standards and definitions are used across all health data collections	5. Develop a set of endorsed data standards and definitions and ensure compliance	1. Review existing health data standards work undertaken internationally 2. Develop a draft Health Data Standards and Definitions document 3. Undertake consultation on the document with all relevant stakeholders 4. Revise based on the consultation 5. Seek endorsement of the documentation	Oct 2016 – Mar 2017; 6 months	HIS Unit; HIS Committee;	None	TA support	Would be best undertaken when (6) develop and endorse a core indicator set that align with global targets and meets local needs	*Risk*: Ensuring compliance may be difficult *Mitigation*: Endorsement by MOH Executive and advocacy/ awareness strategies required

		6. Publish this document and ensure compliance of all existing and new data collections						
Collection and use of health indicators that align with global targets and meets local needs	6. Develop and endorse a core indicator set that align with global targets and meets local needs	1. Draft a set of health indicators that are aligned with the SDG's and other global reporting requirements, as well as that allow reporting against the MOH Health Sector Strategy 2. Consult with all key stakeholders on the draft indicator set 3. Revise indicators based on consultation 4. Endorse the indicators set for collection and use, including standard reporting outputs 5. Revise data collection tools to ensure consistent collection of data required to report on the indicators	Oct 2016 – Mar 2017; 6 months	HIS Unit; HIS Committee; MOH Executive; Donor partners;	Roll-out of the new indicator set will require training of data collectors on the changes in data required, as well as managers to ensure the appropriate use	TA support; Funding for consultation meetings and national rollout	(1) HIS Committee established; (5) To align with data standards and definitions	*Risk*: Core indicators do not align with National/ International agendas and strategies. *Mitigation*: Consult broadly with stakeholders. HIS to engage in HSS and NSDP processes to ensure indicators are aligned and objectives of strategies can be measured
Consistent data is collected across all settings and is used at all levels	7. Revise existing HIS reporting forms in all health facility types to reduce duplicate data collection and reduce ambiguity in meaning. Then update the DHIS2 database to ensure all information needed for local and national indicator reporting is being collected in a standardized way	1. Review all existing data collection tools in all settings and at all levels of the health system 2. Develop new data collection tools (and procedure manuals) that remove duplicate data collection, minimize reporting burden, only collect data that will be used and align with the core indicator set 3. Seek endorsement of the new forms from all relevant stakeholders (e.g. program managers) 4. Roll out the new collection tools in all settings 5. Revise the DHIS2 database to capture the data from the new tools and report on this in a standardized way	Oct 2016 – Jun 2017; 9 months	HIS Unit; Provincial HIS Officers	Training on the use of the new tools	Potential TA support for tool revision; Printing of new forms; TA support to revise the DHIS2 database; National training on use of the tools	(6) Develop and endorse a core indicator set that align with global targets and meets local needs	*Risk*: Programs lobby for inclusion of too many data elements which may impact on data quality *Mitigation*: Technical discussion with programs regarding the utility of data through routine systems & the trade-off between the quantity and quality of data
Adequate HIS human resources in place	8. Appoint permanent HIS officers at all levels	1. Develop and endorse TORs for all HIS positions 2. Revise the HIS organizational	Jan – Jun 2017; 6 months	MOH Executive; HIS Unit; HR Unit	None	None	Dependent on budget space and	*Risk*: Slow recruitment process and lack

	(Some positions are currently funded through donors and development partners)	structure including lines of accountability from the national to the provincial level 3. Appoint National HIS Officer 4. Appoint Provincial HIS Officers					finalization of MOH structure	of funds create unstable workforce and gaps in core HIS functions *Mitigation*: WHO supports vacant positions over short-term when requested by MOH. MOH commit to recruitment process.
Health managers and clinicians are using information for planning, priority setting and resource allocation	9. Produce an annual report to government *(A HIS appendix of statistics is currently prepared for the MOH Annual Report. This activity refers to a stand-alone report based on the core indicator framework)*	1. Review examples from other countries and literature on best practice for annual health reports 2. Draft an outline for the annual report for consultation, incorporating core indicator and HSS measures 3. Consult on the format both within the MOH and with other government agencies 4. Revise based on consultation 5. Produce the report for submission to parliament by the Minister.	Jan – Jun 2017; 6 months	HIS Unit; HIS Committee	None	Possible TA	(6) Develop and endorse a core indicator set that align with global targets and meets local needs	As per activity 17
Locally appropriate systems in place for data storage and transmission	10. Conduct a feasibility study, user-needs assessment, and determine technical requirements for potential new electronic hospital information management system (HIMS).	1. Review current system 2. Conduct feasibility study and user-needs assessment 3. Depending on the outcomes, determine technical requirements for potential new electronic patient information system 4. Source funding 5. Develop implementation plan should a new system be recommended	Jan – Dec 2017; 1 year	HIS Unit; HIS Committee; MOH Executive; HIMS Working Group	Training, if new system implemented	TA for feasibility study, user-needs analysis and determining technical requirements	(7) Revision of Hospital HIS forms would be useful	*Risk:* 1) Lack of coordination to conduct proper needs analysis (risks adopting inappropriate system); 2) Lack of HR to complete the work; 3) Potential costly implementation may inhibit progress *Mitigation*: 1) Establish working group to oversee

								& coordinate assessment; 2) Seek technical support; 3) Seek financial support – a thorough & valid needs analysis will facilitate buy-in from donors. (Further risk analysis will be outlined in project documents)
Data collected is used for planning and management of the MOH	11. Incorporate HIS information into MOH planning/budgeting process *(Only minimal analysis and use at present)*	1. Review existing MOH plans and budgets and determine where health information could be used to inform future decision making in the MOH 2. Establish a reporting mechanism that provides the relevant information to MOH managers on a regular basis	Feb – Apr 2017; 3 months	HIS Unit; MOH Corporate Services; MOH Executive	None	Potentially (TA support)	None	*Risk*: Budget timelines are tight with limited HR pool to complete the analysis *Mitigation*: Ensure data is available and that discussion occurs before budget process begins
Health managers and clinicians are using information for planning, priority setting and resource allocation	12. Dissemination of all HIS reports to managers and clinicians on a regular basis *(HIS bulletins and Newsflashes are currently disseminated but this activity refers to a broader consultation to ensure the products align with user needs)*	1. Develop a draft suite of reports to meet the regular information needs of managers and clinicians 2. Undertake consultation with all relevant stakeholders on these reports 3. Revise based on consultation 4. Finalise and commence regular distribution of reports	Apr – Jun 2017; 3 months	HIS Unit; MOH Curative Services; MOH Executive	None	Possible TA; May require consultation meetings	(6) Develop and endorse a core indicator set that align with global targets and meets local needs (3) Conduct a training needs assessment for all HIS related staff	*Risk*: High workloads, lack of HIS personnel and technical capacity to produce reports *Mitigation*: Build technical capacity within HIS unit; ensure HIS vacancies are filled; ensure dissemination strategy is realistic and manageable.
Adequate funding available for HIS staffing and activities	13. Allocate budget for the HIS Unit at the national level and HIS activities at the provincial	1. Review existing budget to determine where current HIS funding is allocated 2. Establish a unique cost code for	Jun – Jul 2017; 2 months (for implement-ation in 2018	HIS Unit; MOH Corporate Services; Finance Unit	None	Internal MOH budget allocation	None	*Risk*: Lack of high-level support for separate allocation

	level with dedicated account codes for monitoring and evaluating HIS activities	HIS activities for implementation in the next budget	budget)					Mitigation: Advocate through DG and MOH Executive
Improved consistency and coordination of health data collection and use nationally	14. Develop Health Information Policy in consultation with key stakeholders, including: • Emphasis on confidentiality • Include CRVS and ICT issues • Include the SDGs • Include national framework on how to use data from different sectors and programs • Plan for periodic monitoring of this policy through the HIS Committee • Include provision for private health sector reporting (may require legislation)	1. Draft a Health Information Policy utilizing similar policies from other countries as a guide. 2. Undertake a consultation process for the policy with all key stakeholders, including private sector actors 3. Obtain endorsement of the policy 4. Undertake national training/awareness of the policy to all relevant MOH and other agency staff 5. Develop a plan for regular review and update of the policy	Jul – Nov 2017; Establishment phase - 5 months; Regular review - ongoing	HIS Committee; HIS Unit; MOH Executive;	National training/ awareness of the new policy	TA for policy development; Funding for consultation meetings and national rollout	(1) HIS Committee established	Risk: Implementing & enforcing policy may be challenging, particularly engaging the private sector Mitigation: High-level endorsement and advocacy/ awareness strategy critical. Engage all stakeholders during formulation of policy.
Actions for medium-term implementation (2018 – 2020)								
High quality data is regularly collected and available for use by the MOH	15. Establish a supervision mechanism to ensure the completeness of reporting in a timely manner utilising the data from DHIS2	1. Identify which managers have responsibility for ensuring data is submitting from each health facility 2. Develop standard reports from DHIS2 on the quality of data submitted, including completeness rates 3. Provide these reports to the relevant managers and the HIS Committee on a regular basis, and require managers to follow up on all incomplete submissions and report back to the HIS Committee	Jan – Apr 2018; 4 months	HIS Unit; HIS Committee; Provincial Managers	None	Potentially (TA support)	None	Risk: Management & facility staff turnover Mitigation: Provincial HIS officers to play a key supporting role monitoring staff changes and assisting managers to supervise the submission of forms

Appropriate patient records are maintained at all health care settings	16. Develop standard forms for collecting patient information across health care settings	1. Collect examples of all forms currently in use in all health care settings 2. Review examples from other countries and literature on best practice for collecting health service records 3. Develop a draft form 4. Pilot in a select number of health facilities 5. Review and finalise new forms 6. Print new forms 7. Rollout the new forms to all health care settings	Jan – Jun 2018; 6 months	HIS Unit;	Training on how to use the new forms	Funding for printing of new forms; Funding for national roll-out of forms and training; Possible TA required	(6) Develop and endorse a core indicator set that align with global targets and meets local needs	*Risk*: No sustainability across different levels of health system *Mitigation*: Determine clear mechanism to fund & supply materials to facilities; step-by-step roll-out
Data in the MOH is managed in a standardised way	17. Develop data management procedures that address: • Information access protocols • Information/record ownership • Retention and destruction of information • Mandatory provision of information by all health care providers to the HIS Unit/MOH	1. Draft a data management procedure with reference to any relevant legislation or policies 2. Consult on the draft procedure document with all relevant stakeholders 3. Revise the document based on the consultation 4. Endorse the procedures 5. Provide training in the new procedures to all relevant staff	May – Aug 2018; 4 months	HIS Unit; HIS Committee; MOH Executive	Training for staff at the national and provincial levels on the new procedures	Potential TA support; Funding for consultation meetings and national rollout	(14) Develop Health Information Policy	*Risk*: Implementing & enforcing procedures may be challenging *Mitigation*: High-level endorsement and advocacy/ awareness strategy critical. Engage all stakeholders during formulation of policy
Appropriate patient records are maintained at all health care settings	18. Provide training on medical record documentation to all current health workers	1. Develop a training module for medical record documentation 2. Undertake a program of training nationally for all existing health workers 3. Evaluate medical record documentation through a national audit program	Jul – Dec 2018; Training – 3 months Audit – 3 months	HIS Unit; MOH Curative Services	Medical record documentation training to be combined with training on the use of the new forms	Funding for training and auditing; Possible TA	(16) Develop standard forms for collecting patient information across health care settings	As per activity 12 above + *Risk*: Low acceptance of change to reporting processes *Mitigation*: Advocacy & awareness of how improved data quality will impact on decision-

								making; Ensure management and executive buy-in
Appropriate patient records are maintained at all health care settings	19. Review nursing curriculum and incorporate documentation and information use components *(This is additional to activities already underway to incorporate lessons on use of aggregate data forms into the curriculum)*	1. Meet with Nursing School management to discuss what (if any) components on documentation and information use are currently contained in the curriculum 2. Based on these discussions and an analysis of the current curriculum, draft new curriculum content for use in the nursing school 3. Consult with the Nursing School management on the draft content and seek their commitment for its incorporation in future educations	Sep – Dec 2017; 4 months	HIS Unit; MOH Executive; VCNE	None	Potential TA support	(18) Provide training on medical record documentation to all current health workers	*Risk*: Requires agreement by nursing school *Mitigation*: Education & advocacy on the importance of health information to health service delivery; Management and MOH executive buy-in

5.5   Proposed actions by level of responsibility

The following table sets out each action by level of responsibility, using the Responsibility Assignment Matrix (RAM), which describes the participation by various agencies in completing tasks for the strategic plan. These responsibilities were identified during the HIS Strategic Planning Workshop in November 2015 but it is noted that the HIS unit will drive the plan. Key responsibility roles are defined below:

- **Responsible (R)**. Those who do the work to achieve the task. There is at least one agency with a participation type of responsible for each action, although others can be delegated to assist in the work required
- **Accountable (A)**. The lead agency ultimately answerable for the correct and thorough completion of the action/activity, and the one who delegates work to those responsible. **There must only be one accountable agency for each activity.** Due to potential staff changes, it is assumed that the manager of each agency/unit is the accountable individual on each occasion.
- **Consulted (C)**. Those agencies (or individuals) whose opinions are sought on an activity or item, and with whom there is usually two-way communication
- **Informed (I)**. Those agencies (or individuals) who are kept up-to-date on activity progress, often only on completion of the activity; and with whom there is one-way communication.

Improvement Goal	Actions/ Activities	HIS Committee	HIS Unit	MOH Executive	MOH Corporate, Services	Other (specify)
Actions for immediate implementation (2016)						
Improved governance of HIS nationally	1. Establish a cross-sectorial HIS Committee		C	A R		
Locally appropriate systems in place for data storage and transmission	2. Identify local staff for training/scholarships to establish and maintain databases	I	A R			OGCIO (C)
HIS staff at all levels are able to transform data into information that is useful for decision-making	3. Conduct a training needs assessment for all HIS related staff	I	A R	I		
Adequate ICT support available for MOH ICT investments	4. Liaise with OGCIO to seek local IT support	I	C			MOH IT (A) (R)
Actions for short-term implementation (2016-17)						
National health data standards and definitions are used across all health data collections	5. Develop a set of endorsed data standards and definitions an ensure compliance	A R	R			NSO (C)
Collection and use of health indicators that align with global targets and meets local needs	6. Develop and endorse a core indicator set that align with global targets and meets local needs	A R	R	I	I	Programs (C)
Consistent data is collected across all settings and is used at all levels	7. Revise existing HIS reporting forms to reduce duplicate data collection and reduce ambiguity in meaning. Then update the DHIS2 database to ensure all information needed for local and national indicator reporting is being collected in a standardized way	I	A R			Programs (C) Hospitals (C)
Adequate HIS human resources in place	8. Appoint permanent HIS officers at all levels	I	C	A R		
Health managers and clinicians are using information for planning, priority setting and resource allocation	9. Produce an annual report to government	I	R		A	
Locally appropriate systems in place for data storage and transmission	10. Conduct a feasibility study, user-needs assessment, and determine technical requirements for potential new electronic hospital information management system.	C	C	I	I	HIMSWG (A) (R)
Data collected is used for planning and management of the MOH	11. Incorporate HIS information into MOH planning/budgeting process	C	C		A R	

Health managers and clinicians are using information for planning, priority setting and resource allocation	12. Dissemination of all HIS reports to managers and clinicians on a regular basis	I	A R			
Adequate funding available for HIS staffing and activities	13. Allocate budget for the HIS Unit at the national level and HIS activities at the provincial level with dedicated account codes for monitoring and evaluating HIS activities	C	C		A R	
Improved consistency and coordination of health data collection and use nationally	14. Develop Health Information Policy in consultation with key stakeholders	A R		I		NSO, CR (C)
Actions for medium-term implementation (2018-2020)						
High quality data is regularly collected and available for use by the MOH	15. Establish a supervision mechanism to ensure the completeness of reporting in a timely manner utilising the data from DHIS2	I		A R		
Appropriate patient records are maintained at all health care settings	16. Develop standard forms for collecting patient information across health care settings	I	A R			Programs (C) Hospitals (C)
Data in the MOH is managed in a starndardised way	17. Develop data management procedures that address: • Information access protocols • Information/record ownership • Retention and destruction of information Mandatory provision of information by all health care providers to the HIS Unit/MOH	I	A R			
Appropriate patient records are maintained at all health care settings	18. Provide training on medical record documentation to all current health workers	I	A R			
Appropriate patient records are maintained at all health care settings	19. Review nursing curriculum and incorporate documentation and information use components	A R				Nursing school (R)

5.6   Template for national budget 2016–17 (Immediate and short-term implementation)*

Expenditure type			Funding source	
ACC	Accommodation		MOH	Ministry of Health
ADMIN	Printing, consumables, etc.		WHO	World Health Organization[#]
CONSLT	Consultant fees		DFAT	Australian Government, Department of Foreign Affairs and Trade
HR	Human resources (i.e. wages)		OTH	Other sources
MTG	Meeting Costs			
PROCR	Procurement costs			
TRAIN	Training costs			
TRV	Travel costs			
WSHOP	Workshop costs			

#	Activity details — Title	Expenditure type(s)	Components	Duration	Unit cost (Vatu)	Multiplier	Total cost (Vatu)	Funding source
1	Establish a cross-sectoral HIS Committee	ADMIN, MTG	Develop guidelines, TORs etc.; Conduct committee meetings every 2 months *(Costs of meetings are included)*	July 16 – Dec 17 *(initially)*	5,000	9 (meetings)	45,000	MOH/DFAT
2	Identify local staff for training/scholarships to establish and maintain databases	ADMIN, (TRAIN)	Undertake audit and assessment and develop plan. *(Note: staff training staff will be determined after plan is developed. Therefore costs of training are not included as part of this activity)*	July 16 – Dec 16	–	–	–	*Costs of training staff will initially be covered by WHO*
3	Conduct a training needs assessment for all HIS related staff	ADMIN, (TRAIN)	Undertake needs assessment. *(Note: staff training staff will be determined after plan is developed. Therefore costs of training are not included as part of this activity)*	July 16 – Dec 16	–	–	–	*Costs of training staff will initially be covered by WHO*
4	Liaise with OGCIO to seek local IT support	NIL	Meeting with OGCIO at no cost.	Oct 16 – Dec 16	–	–	–	–
						Total (2016)	$	45,000Vt

5	Develop a set of endorsed data standards and definitions to ensure compliance	ADMIN, CONSLT, TRV, WSHOP	Costs for TA; Conduct workshop; Review and develop standards *(Conduct with activity 5 to reduce costs)*	Oct 2016 – Mar 2017	2,000,000	1 (TA + Workshop)	2,000,000	WHO
6	Develop and endorse a core indicator set that aligns with global targets and meets local needs	ADMIN, CONSLT, TRV, WSHOP	Costs for TA; Conduct workshop; Review and develop standards *(Conduct with activity 6 to reduce costs)*	Oct 2016 – Mar 2017	2,000,000	1 (TA + Workshop)	2,000,000	WHO
7	Revise existing HIS reporting forms in all health facility types to reduce duplicate data collection and reduce ambiguity in meaning	ADMIN, CONSLT, TRV, WSHOP	TA for tool revision; Consultation/workshop with programs; Printing new books; Possible TA for DHIS2 update; Training of health staff on revised forms.	Oct 2016 – Jun 2017	4,000,000	1 (X2 TA + Workshop + Trainings + Printing)	4,000,000	WHO; MOH – To contribute to Printing & Training
8	Appoint permanent HIS Officers at all levels	HR	Develop TORs/PDs and revise HIS organizational structure; Appoint Officers *(These are long-term costs outlined in the new structure and are not specific to this strategic plan)*	Jan – Jun 2017	–	–	–	MOH *(Long-term HR costs)*
9	Produce annual reports to government	ADMIN	Printing costs	Jan – Jun 2017 *(initially)*	1,000	50	50,000	MOH
10	Conduct a feasibility study, user-needs assessment, and determine technical requirements for potential new electronic hospital information management system (HIMS).	ADMIN, CONSLT, HR, MTG, TRV, WSHOP	Technical Assistance required; Local HIS/IT positions within new structure will initially be recruited through Special Service Agreements to support consultant and for institutional memory; Funds required to conduct consultations; Printing	Jan – Dec 2017 (For *assess-ment phase*)	7,000,000	1 (TA + local hire x2 + consultat-ions + printing)	7,000,000	WHO
11	Incorporate HIS information into MOH planning/budgeting processes	CONSLT	Possible technical assistance	Feb – Apr 2017	1,000,000	1	1,000,000	WHO

12	Dissemination of all HIS reports to managers and clinicians on a regular basis	ADMIN; CONSLT; WSHOP	Possible technical assistance; Workshop/ consultation; Printing	Apr – Jun 2017	1,500,00	1 (TA + Workshop + Printing)	1,500,00	WHO; MOH – Contribute Printing & Consultation costs
13	Allocate budget for the HIS Unit at the national level and HIS activities at the provincial level with dedicated account codes for monitoring and evaluating HIS activities	NIL	Consultation and agreement with Corporate Services and Finance Unit	Jun – Jul 2017	–	–	–	No costs required to allocate budget
14	Develop health information policy in consultation with key stakeholders	ADMIN, CONSLT, MTG, TRAIN, TRV	Costs for TA; Conduct meeting/consultations; Develop policy and review plan; Awareness campaign/ training	Jul – Nov 2017	2,500,000	1 (TA + Meeting + Awareness)	2,500,000	WHO
					Total (2017)	**$**	20,050,000	
					Total (2016-17)	**S**	20,095,000	
					Secured funding	**$**	20,095,000	
					Funding to be found	**$**	0	

*Costs of activities are calculated by estimating the maximum potential costs for each activity to take place. They are likely to be overestimated. Subsequent six-monthly reviews of the plan will revise these figures as more detailed calculations are prepared.
WHO funding for HIS activities is kindly provided by DFAT

6   Monitoring and Evaluation

Monitoring and evaluation of the implementation of this plan should be an ongoing process, with the national HIS Committee reviewing progress on current activities at regular intervals. A more formal review should be undertaken annually, and consist of a progress report against each of the key activities, as well as a stock take of overall impact and system performance.

TABLE 1: INDICATORS FOR MONITORING PROCESS AGAINST IMMEDIATE & SHORT-TERM ACTIONS (2016-17)

Improvement Goal	Actions/ Activities	Evidence of achievement	Verifiable indicators
Improved governance of HIS nationally	1. Establish a cross-sectoral HIS Committee	Describe here what actions took place	1. Terms of reference 2. Committee meeting minutes
Locally appropriate systems in place for data storage and transmission	2. Identify local staff for training/scholarships to establish and maintain databases	Describe here what actions took place	1. Training register of staff receiving scholarships 2. Development of standard procedures for database management
HIS staff at all levels are able to transform data into information that is useful for decision-making	3. Conduct a training needs assessment for all HIS related staff	Describe here what actions took place	1. Training needs assessment report 2. Training schedule
Adequate ICT support available for MOH ICT investments	4. Liaise with OGCIO to seek local IT support	Describe here what actions took place	1. MOU between MOH and OGCIO
National health data standards and definitions are used across all health data collections	5. Develop a set of endorsed data standards and definitions an ensure compliance	Describe here what actions took place	1. National standards 2. Names of health facilities standards disseminated to
Collection and use of health indicators that align with global targets and meets local needs	6. Develop and endorse a core indicator set that align with global targets and meets local needs	Describe here what actions took place	1. Core indicator framework 2. Core indicator reports
Consistent data is collected across all settings and is used at all levels	7. Revise existing HIS reporting forms and update the DHIS2 database	Describe here what actions took place	1. Revised forms 2. Database(s) compatible with forms
Adequate HIS human resources in place	8. Appoint permanent HIS officers at all levels	Describe here what actions took place	1. Updated job descriptions
Health managers and clinicians are using information for planning, priority setting and	9. Produce an annual report to government	Describe here what actions took place	1. Annual Report

Improvement Goal	Actions/ Activities	Evidence of achievement	Verifiable indicators
resource allocation			
Locally appropriate systems in place for data storage and transmission	10. Conduct a feasibility study, user-needs assessment, and determine technical requirements for potential new electronic HIMS	Describe here what actions took place	1. Progress reports 2. Final technical report and recommendations
Data collected is used for planning and management of the MOH	11. Incorporate HIS information into MOH planning/budgeting process	Describe here what actions took place	1. Policy briefs developed prior to planning process 2. Meeting minutes with MOH executive
Health managers and clinicians are using information for planning, priority setting and resource allocation	12. Dissemination of all HIS reports to managers and clinicians on a regular basis	Describe here what actions took place	1. HIS reports 2. Dissemination records (emails)
Adequate funding available for HIS staffing and activities	13. Allocate budget for the HIS Unit at the national level and HIS activities at the provincial level with dedicated account codes for monitoring and evaluating HIS activities	Describe here what actions took place	1. Developed concept paper 2. Date of submission to MOH 3. Budget line allocation
Improved consistency and coordination of health data collection and use nationally	14. Develop Health Information Policy in consultation with key stakeholders	Describe here what actions took place	1. National policy 2. Names of health facilities policy disseminated to

Appendix 1: 2016–2018 Activity Gantt chart

#	Task Name	2016 Jul	Aug	Sep	Oct	Nov	Dec	2017 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2018 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Establish a cross-sectoral HIS Committee	▓	▓	▓	▓	▓																									
2	Identify local staff for training/scholarships to establish and maintain databases	▓	▓	▓	▓	▓	▓																								
3	Conduct a training needs assessment for all HIS related staff	▓	▓	▓	▓	▓	▓																								
4	Liaise with DGCID to seek local IT support				▓																										
5	Develop a set of endorsed data standards and definitions and ensure compliance				▓	▓	▓	▓	▓	▓																					
6	Develop and endorse a core indicator set that align with global targets and meets local needs				▓	▓	▓	▓	▓	▓																					
7	Revise existing HIS reporting forms in all facility types				▓	▓	▓	▓	▓	▓	▓																				
8	Appoint permanent HIS officers at all levels							▓	▓	▓	▓	▓																			
9	Produce an annual report to government							▓	▓	▓	▓	▓																			
10	Review the Hospital Information Management System							▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓													
11	Incorporate HIS information into MOH planning/budgeting process								▓	▓																					
12	Dissemination of all HIS reports to managers and clinicians on a regular basis											▓	▓	▓																	
13	Allocate budget for the HIS Unit at the national level and HIS activities at the provincial level with dedicated account codes for monitoring and evaluating HIS activities												▓	▓																	
14	Develop Health Information Policy in consultation with key stakeholders														▓	▓	▓														
15	Establish a supervision mechanism to ensure the completeness of reporting in a timely manner utilising the data from DHIS2																			▓	▓	▓	▓								
16	Develop standard forms for collecting patient information across health care settings																			▓	▓	▓	▓	▓							
17	Develop data management procedures																						▓	▓	▓						
18	Provide training on medical record documentation to all current health workers																								▓	▓	▓	▓	▓	▓	
19	Review nursing curriculum and incorporate documentation and information use components																										▓	▓	▓		