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### Abbreviations

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CMU</td>
<td>Computer Maintenance Units</td>
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<td>GIS</td>
<td>Geographical Information System</td>
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<td>HIS</td>
<td>Health Information System</td>
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<td>HMN</td>
<td>Health Matrix Network</td>
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<td>HRM</td>
<td>Human Resource Management</td>
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<td>ICT</td>
<td>Information and Communication Technologies</td>
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<td>ICTA</td>
<td>Information Communication Technology Agency</td>
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<td>IMMR</td>
<td>Indoor Morbidity and Mortality Report</td>
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<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<td>MSD</td>
<td>Medical Supplies Division</td>
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<td>NeGS</td>
<td>National eHealth Guidelines &amp; Standards</td>
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<td>NeHSC</td>
<td>National eHealth Steering Committee</td>
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<td>NGOs</td>
<td>Non-governmental Organizations</td>
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<tr>
<td>OPD</td>
<td>Out Patient Department</td>
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<tr>
<td>PDHS</td>
<td>Provincial Department of Health Services</td>
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<tr>
<td>PGIM</td>
<td>Postgraduate Institute of Medicine</td>
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<tr>
<td>PHN</td>
<td>Personal Health Number</td>
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<td>RDHS</td>
<td>Regional Department of Health Services</td>
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<tr>
<td>RMSD</td>
<td>Regional Medical Supplies Division</td>
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<tr>
<td>WEBIIS</td>
<td>Web-based Immunization Information System</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Background

Health information constitutes all data or information that are generated, captured, transmitted, stored, processed, analyzed and disseminated in either on paper or on electronic format, pertaining to health or healthcare service. Thus, the term encompasses data and information related to preventive health services, curative health services, health administration and research. Healthcare is an information intensive service where it is utilized for care related decisions spanning from diagnosis, treatment and outcome assessment to administrative decisions, planning and monitoring. Therefore, a ubiquitous system that provides comprehensive, accurate, reliable, relevant, accessible, timely and cost effective health information is paramount for evidence-based decisions. Moreover, the ever increasing demand for healthcare, the demand for equitable distribution of care and the increasing demand for higher quality of care has made the Health Information System (HIS) one of the “building blocks” of any health system.

The government of Sri Lanka is committed to provide universal access to essential health care that would benefit its people through preventive and curative state healthcare services. Though most care services are allopathic, there is also a contribution from indigenous forms of medicine. Further, private healthcare organizations, predominantly curative, have also been increasingly involved in the provision of healthcare.

The national HIS of Sri Lanka is a very comprehensive, component-based information system that has gradually developed for about a century. It is an integral and integrated component of the health service delivery framework. This has immensely contributed to making the Sri Lankan healthcare system on par with the best in the world.

The national HIS mainly consists of the information inputs obtained from the state health service. The present sub-systems of the national HIS include curative/hospital information systems, preventive health information systems, population census, civil and vital registration system and routine population based health surveys. These sub-systems capture data relating to mortality and morbidity, disease outbreaks, social determinants of health (such as nutrition, environment, and oral health), population growth, births, marriages, healthcare access, healthcare coverage, human resources for health, quality of services, health financing and other health related data.

The state HIS is predominantly paper based and manual from point of data capture, at point of service, to data transfer to the regional and central levels. Data is analyzed at regional and national levels using computer based analytical tools and manual methods.

Health information is disseminated mainly through national, regional, institutional and program specific publications. The main national publication is the Annual Health Bulletin of Sri Lanka. Most of the publications are paper based. Presently, limited amount of health information is
made available through the official website of the Ministry of Health, Nutrition and Indigenous Medicine and websites of respective health institutions.

Whereas, the larger private healthcare institutions have institutional HISs, the majority of the medium and small scale operations are observed to lack neither the interest nor the capacity to maintain health records. Therefore, the majority of private sector health data with an exception of data on immunization, notifiable diseases and maternal mortality, are not reported to the state. There is no formal system to capture health information generated at point of care of General Practitioners.

**Rationale for Health Information Policy**

The HIS survey conducted by Ministry of Health, Nutrition and Indigenous Medicine in August, 2009, using the WHO - Health Matrix Network (HMN) tool, highlighted some broad areas of concern. The critical areas of deficiency included components related to “Resources” (i.e. policy, planning, HIS institutions, human resources, financing and infrastructure) and “Data Management”. Situational analysis of data sources revealed that the vital statistics, population based surveys and health & disease records were ranked “adequate” whilst health service records and resource records were ranked “present but not adequate” when compared to the HMN gold standard. Detailed health information related issues and gaps were elucidated during the policy formulation.

**Major concerns**

The major problems related to the national HIS in Sri Lanka are the lack of clear policies on health information management, compartmentalization of the information governance mechanism, inadequate coordination among existing information systems, limited data sharing, moderate use of information for decision making and insufficient automation leading to relatively modest quality of health information. Moreover, the national HIS has not evolved sufficiently to cater for changing information needs. Thus, a much desired “information culture” within the health sector is not yet achieved.

There are also no clearly defined regional, institutional or programme based focal points for health information management in all areas. Notably, some disciplines have developed information systems to cater to their needs, although, there are no proper mechanisms for integration with the national HIS. Moreover, the lack of integration has led to the repeated capture of the same data elements from different groups, posing an undue burden on the data collection process. Most data collection forms have not undergone timely revisions.

The public health programmes in Sri Lanka operate under designated directorates with a certain degree of autonomy. Many of the information systems belonging to public health programmes were therefore, developed independently and have remained as such even in their implementation. This invariably poses a considerable deterrent to information sharing.
Moreover, the hospital information system in operation has not been revised for more than 20 years. Hence, it is not capable of generating all the required information to fulfill the present day needs; for instance, the hospital system does not capture detailed out-patient data and does not allow life-long continuity of patient records. Although some private sector healthcare institutions generate and are willing to share their information, there is no proper mechanism for integration with the national HIS. There also remains certain information gaps such as data in relation to occupational health, environmental health, injuries, indigenous curative care, M&E data and hospital management information. Further, little emphasis is made on geographically referenced health and health related data – GIS. The digital out puts of medical laboratories and radiological machines are not optimally utilized by linking them to respective information systems.

It is observed that the curative and preventive care information systems together capture a large number of data at the grass-root level. Yet, in general, the existing data is inadequately utilized in formulating policies, preparing plans, and making management and clinical decisions. One key contributor to this the dearth of timely information and the relative rigidity in information retrieval, processing and presentation, is the highly inaccessible paper records and registries. A further contributor to this is the lack of an “information culture” where evidence based decisions are encouraged and considered as the norm.

Presently, the Provincial Department of Health Services (PDHS) as the governing body responsible for the health services of a given province under the devolution of power in 1989, does not comprehensively receive health information of the health institutions (curative and preventive) within the province. Further, the Regional Department of Health Services (RDHS) within a PDHS will only receive health information pertaining to the institutions under it’s preview (curative and preventive), whereas the institutions governed centrally (Line Ministry Institutions) though located within the territory of the RDHS, will directly report to Line Ministry institutions. This deficiency in the information flow has hampered the evidence based decision making process at PDHS and RDHS levels.

Personally identifiable health information requires a high degree of confidentiality. Presently, ethical considerations in information handling, information use, information sharing and information use in research is not adequately covered. The present focus on information security, both physical and virtual also remain minimal.

Automation of health information systems is slow and less coordinated. In this regard, the high initial cost of ICT infrastructure remains a pressing issue. The required skills and knowledge related to ICT among general health staff also remains inadequate. Furthermore, there is little emphasis on planned capacity building, identification of new cadres and recruitment, for information management and ICT, also remain low.
Recent developments
The manual and paper based national HIS is fast becoming obsolete. The need for modernizing the HIS according to contemporary needs is vital; giving emphasis on suitable and selective automation of the manual information systems in a cost-effective and sustainable manner.

eHealth, automation and innovation
WHO describes eHealth as “the transfer of health resources and health care by electronic means”. In general eHealth is the application of information and communication technologies (ICT - all electronic forms) to all or any aspect of health. It includes such applications relating to care delivery (patient management and health service management), public health (preventive and promotive), medical education and health related research.

In realizing a plethora of potential benefits of adopting eHealth, the government of Sri Lanka has spearheaded the process of incorporating ICT applications in the health sector. In line with this, the Ministry of Health, Nutrition and Indigenous Medicine of Sri Lanka has formed the National eHealth Steering Committee (NeHSC)—a national level body for eHealth governance. This initiative is well supported by WHO on the report on Building Foundations for eHealth “National foundation actions form the basis of eHealth in countries”.

Under the guidance of NeHSC, the National eHealth Guidelines & Standards (NeGS) are drafted. The guidelines are set for aspects of the Architectural Model for the National Health Information System, ICT Management, Networking and Connectivity, Communication Interface, Ethics, Privacy, Confidentiality and Security of Information and Data standards. NeGS presently forms the basis for all eHealth initiatives in the state health sector.

Present eHealth initiatives
Notable improvements in the state HIS have taken place in the recent past. The Ministry of Health, Nutrition and Indigenous Medicine in collaboration with the Postgraduate Institute of Medicine (PGIM) has created a unique and especially skilled work force for health information management; viz. doctors trained in Biomedical Informatics, who have been instrumental in spearheading the recent innovations.

Further to these developments, the electronic version of the Indoor Morbidity and Mortality Report (IMMR) is successfully replacing its manual counterpart. Thus, the morbidity and mortality data collection process and resulting compilation of annual health statistics will be fully automated within the next 3 years.

An electronic patient management system for OPD patients is tested in several medium scale hospitals, whilst, a fuller version for in-ward patients is also being developed and tested; the current key focus being registration of all patients and capturing the discharge diagnosis. Steps are taken to establish Computer Maintenance Units (CMU) in selected institutions to ensure the sustainability of these information systems. Presently, births are electronically captured in a majority of labour rooms through WEBIIS. Furthermore, continued constructive discussions are
being held to streamline the data collection processes of Maternal and Child Health and immunization. A unique identifier viz. the Personal Health Number (PHN) is presently being pilot tested. This identifier will pave the way for continuity of care and life-long health records, leading to the capture of number of patients as opposed to episodes.

A HRM system to handle the complicated appointments, transfers and promotions of doctors is functional. Modification of a similar system to handle other staff categories is in the pipeline.

The MSD has implemented a system for medical supplies management from central level, through RMSDs to health institutions.

**This Policy**

This National Policy on Health Information falls in line with and supports objectives set out in the National Health Policy. The present effort of formulating this Policy was initiated by the timely action of the relevant authorities for “Health Information System Modernization”, with the primary view of overcoming the identified information related issues and achieving the stipulated national health goals.

It is also aimed at defining the direction for systematically converting appropriate areas of HIS to an electronic information system in future and encourage innovations. The outcome of this is the use of reliable and good quality information through a resilient HIS, leading to improved health systems performance, quality of health care, universal access, increased service delivery, reduced burden, increased efficiency, and improved cost-effectiveness. Moreover, the policy will facilitate the informed decision making process.

**The policy process**

The results of the Health Matrix Network (HMN) survey in August, 2009, was instrumental in getting the initial direction to the policy process. The policy formulation process was further based on a comprehensive situation analysis done through a series of focused group discussions involving relevant high level stakeholders, representing the major Health Information sub-systems. These discussions were held from mid-August, 2012 to February, 2013. The key analysts were the Health Information Unit and the Policy Development & Analysis Unit.

The draft version was discussed extensively with a wider forum which included officials at the highest level of the Ministry of Health, Nutrition and Indigenous Medicine and Indigenous Medicine, Department of Census and Statistics, Registrar Generals Department, World Health Organization, World Bank and other funding agencies and NGOs. The development of the final version and public scrutiny which followed, led to the overall consensus prior to Cabinet approval.
Guiding principles
The Health Information Policy is to be implemented abiding by the following guiding principles;
1. Citizen centric approach
2. Good governance and transparency
3. Upholding national values of free healthcare, right to health, universal health coverage, equity and social justice
4. Encouraging multiple stakeholder involvement, collaboration and partnerships for information dissemination and sharing
5. Evidence based decision making and accountability
6. Ensuring privacy and confidentiality of healthcare recipients
7. Sensitivity towards cultural diversity and social norms
8. Systems-approach to health information with a focus on interoperability
9. Minimal data redundancy in data capture
10. Conformity to technology relevance, simplicity, cost-effectiveness and judicious & efficient use of information resources
11. Sustainability of information system

In keeping with above principles the policy vision, mission, objectives and the key policy areas with statements for implementation are as follows:

Vision
A Health Information System (HIS) which augments an effective, efficient, equitable, economical and quality healthcare service; while ensuring privacy and confidentiality of care recipients.

Mission
To provide quality and timely health information for evidence based decision making through establishment of a ubiquitous, integrated, resilient, dynamic, cost-effective and sustainable Health Information System.

Policy Objectives
The broad objectives of this policy are;
1. To ensure 50% of all health institutions generate, disseminate and use timely and quality health information to support organisational management and development.
2. To make available comprehensive systems for personalized and community based health information management for shared and continuous care of care recipients who receive care at 50% of all Base Hospitals, District General Hospitals, Provincial General Hospitals and Teaching Hospitals.
3. To ensure optimal data/information sharing and access to, health information in relation to all sharable data in health information systems, while ensuring ethical considerations and confidentiality of care recipients.
4. To encourage suitable innovations related to health information management and eHealth in all information processes; while ensuring interoperability of information systems.
5. To ensure security and integrity of all health data/information.
6. To ensure sustainability of all health information systems.

This policy gives direction in five areas related to HIS to achieve the above policy objectives.
1. Health Information Related Resources
2. Indicators and Data Elements
3. Data and Information Management
4. Data/Information Security, Client Privacy, Confidentiality and Ethics
5. eHealth and Innovations

Policy Statements
1. Health Information Related Resources
   1.1. Information processes\(^1\), procedures, infrastructure, and human resources shall be appropriately adopted for data management to improve efficiency.
   1.2. Health information related organizational, institutional and individual human resource capacity building shall be facilitated.
   1.3. Continuous annual resource allocation and financing shall be ensured for sustainability of Health Information System.

2. Indicators and Data Elements
   2.1. Health data collection and related information processes shall be aligned with information needs and indicators at all levels.
   2.2. Health and health related data elements/information from state and non-state sectors shall be integrated into the national health information system.

3. Data and Information Management
   3.1. Health information governance\(^2\) structure shall be strengthened.
   3.2. Continuity of care for healthcare recipients shall be ensured through a life-long health record.
   3.3. Proper retention, archiving and disposal of health data/information shall be ensured.
   3.4. Sharing of data and information within and outside the health sector shall be promoted.
   3.5. Responsibility for data and information quality at national and sub-national levels shall be assigned to the respective authorities.

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\(^1\)Information processes include the following processes: collecting, organising, analysing, storing and retrieving, transmitting and receiving, processing and displaying of data/information.

\(^2\)Health information governance is the set of multi-disciplinary structures, policies, procedures, processes and controls implemented to manage information at an enterprise level.
3.6. Optimal and wide use of health data/information shall be ensured through appropriate data processing, improved efficiency and quality of health information reporting and improved accessibility of health information by all stakeholders.

4. **Data/Information Security, Client Privacy, Confidentiality and Ethics**
   4.1. Ethical and fair information practices shall be incorporated into information management ensuring client privacy and confidentiality.
   4.2. Data and information security shall be ensured for client data protection.

5. **eHealth and Innovations**
   5.1. eHealth governance structure shall be strengthened.
   5.2. Information and Communication Technology solutions and innovations shall be appropriately adopted to improve the quality, efficiency, patient safety, and cost effectiveness health information systems.
   5.3. Interoperability of the various sub-components of national health information shall be ensured through standardisation, to facilitate seamless data exchange.
   5.4. Health data/information storage shall be facilitated to minimize health data/information loss.
   5.5. Health data/information storage shall be facilitated to minimize health data/information loss and ensure data/information security.
   5.6. Continuous annual resource allocation and financing shall be ensured for sustainability of eHealth systems.

**Implementation of the Policy**
This policy will act as the overarching document guiding the health care delivery organizations to take action to manage and improve their health information accordingly.

The Directorate of Health Information of the Management Development and Planning Unit of the Ministry of Health, Nutrition and Indigenous Medicine will be the focal point for implementation of this policy.

This Directorate is responsible to oversee and guide to ensure that respective agencies responsible for health information generation, dissemination, analysis and use are doing so in a way that contributes to overall health improvement, in line with the health goals. This Directorate will also be responsible to identify information system gaps from time to time through appropriate mechanisms of internal or external evaluations and facilitate to rectify such. This policy is reinforced by the 'National Health Information Strategic Plan' (Annexure1), which shall support the implementation of the policy giving the necessary guidance for formulation of necessary action plans.
**Monitoring and evaluation of policy**

The Directorate of Health Information of the Management Development and Planning Unit of the Ministry of Health, Nutrition and Indigenous Medicine will be responsible to periodically review and revise this Policy and the Strategic plan.

This Directorate of Health Information shall establish a monitoring & evaluation system to review the implementation of this policy. This M&E plan shall consist of Key Performance Indicators (Annexure2) to monitor the successful accomplishment of the board objectives of this policy.

**Related policies**

This policy shall comply with all relevant health and health related policies of the government of Sri Lanka.

This policy shall comply with all relevant information acts of the government of Sri Lanka regarding information collection, retention, dissemination, archiving and disposal.

This policy shall comply with all relevant information acts of the government of Sri Lanka, on national languages.

This policy shall comply with existing governments laws/regulations related to privacy and confidentiality.

This policy shall comply with existing governments laws/regulations related to electronic transactions and computer crimes.

This policy shall comply with existing governments laws/regulations related to intellectual property rights.

This policy shall establish uniformity and standardization of all state websites through implementation of web standards and guidelines prescribed by Information Communication Technology Agency (ICTA) of Sri Lanka.