



Challenges of Health Information Systems in Indonesia

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Article Info	ABSTRACT
<p>Corresponding Author: Rida Hutabarat E-mail: ridabarat@gmail.com</p>	<p>Health Information System (HIS) is one of the strategic components in national health development because it provides accurate data and information to support the management process, decision-making, and evaluation of health programs. This study aims to identify challenges, principles, and strategies for strengthening HIS in Indonesia. The method used is a qualitative descriptive approach through a literature study of government policies, regulations, and scientific literature related to HIS. The results of the study indicate that the implementation of HIS still faces various obstacles, such as a fragmented system, limited technological infrastructure, low human resource capacity, and a suboptimal data use culture. In addition, strategic issues also include weak legal basis, inter-institutional coordination, and lack of support in terms of funding and capacity development. To overcome these problems, strengthening HIS must be carried out through the use of information and communication technology (ICT), system integration, data standardization, and active involvement of the central and regional governments in system governance. The preparation of a roadmap for strengthening HIS is a concrete step to encourage work efficiency, transparency, and the availability of reliable information in supporting health development in Indonesia.</p> <p>Keywords: Health Information System, health policy, data integration, system strengthening, information technology.</p>

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INTRODUCTION

Health development is one of the important pillars in improving the quality of human resources, which directly impacts the social and economic productivity of the community. In an effort to realize optimal health, a structured and data-based management system is needed through the implementation of the National Health System. One of the main components of the system is the Health Information System (HIS), which functions as a support in the management process, decision making, and evaluation of health programs.

However, the reality on the ground shows that the implementation of HIS in Indonesia still faces various complex challenges. Unintegrated systems, limited technological infrastructure, low human resource capacity, and suboptimal use of data in decision-making are problems that hinder the effectiveness of this system. In addition, regulatory support and cross-sector coordination are still inadequate, resulting in fragmentation in the collection and presentation of health data.

Previous studies have shown that these issues are not new, yet they remain persistent and unresolved. For example, Gaol (2008) and Prasetya et al. (2012) emphasized that the lack of standardization and integration in HIS leads to inefficiencies in data flow and utilization. Marlina (2009) also noted that health workers often face difficulties in using digital systems due to a lack of training and resources, while Katz (2007) observed the general absence of ICT culture in developing health systems. Despite the urgency of these issues, research on HIS in Indonesia remains limited in scope and lacks a comprehensive national-level analysis, particularly in the context of system governance and sustainability.

There exists a wide gap between the ideal vision of an integrated, responsive, and technology-driven HIS and the fragmented, manually operated, and often outdated systems currently in place. While policies and action plans have been drafted—such as the Roadmap for Strengthening HIS (Kepmenkes No. 192/MENKES/SK/VI/2012)—their implementation has been hampered by technical, institutional, and financial constraints.

Therefore, this study aims to explore in depth the key challenges, foundational principles, and strategic measures needed to strengthen HIS in Indonesia. The objective is to provide a critical framework for improving health data governance and enabling evidence-based health development policies.

METHOD

This writing uses a qualitative descriptive approach with a literature review method to identify, review, and analyze various challenges, development principles, and strategic steps in strengthening the Health Information System (HIS) in Indonesia. The data reviewed comes from official government documents—such as policies and regulations related to HIS, ministry reports, previous research findings, and publications from both national and international institutions relevant to the health information system. The literature analyzed spans the period from 2007 to 2023, including key references such as government-issued roadmaps, WHO publications, and academic journals focusing on health information systems, e-health, and information governance.

The analysis was conducted thematically by grouping information into several main issues, such as technical aspects, institutional structures, human resources, legal and regulatory frameworks, and implementation challenges at the central and regional levels. Each finding was reviewed based on the National Health System framework and was linked to the principles of good health information governance, including system integration, data transparency, utilization of information and communication technology (ICT), as well as data security and confidentiality.

RESULTS AND DISCUSSION

Principles to Consider in Developing and Strengthening Health Information Systems

Health development is essentially an effort carried out by all components of the nation which aims to increase awareness, willingness and ability to live healthily for every person so that the highest level of public health can be realized, as an investment for the development of human resources, people who are socially and economically productive.

The implementation of health development is carried out through the management of health development as outlined in the National Health System. The components of health management are grouped into seven sub-systems, namely:

1. Health efforts
2. Health research and development
3. Health financing
4. Health human resources
5. Pharmaceutical preparations, medical devices and food
6. Health management, information and regulation, and
7. Community empowerment.

The challenges of health development require sufficient resource support and the right direction of health development policies and strategies. However, health policy makers often have difficulty in making the right decisions due to limited or unavailability of accurate, precise, and fast data and information. Data and information are very strategic resources in managing health development, namely in the managerial process. decision making, governance, and implementation of accountability.

The need for data and information is provided through the implementation of the Health Information System, namely by collecting, processing, analyzing data and presenting information. Currently, the Health Information System (HIS) is still fragmented and has not been able to provide reliable data and information, so that the HIS is still not an effective health development management tool.

The rapid development of Information and Communication Technology (ICT) provides convenience in strengthening and developing HIS. Currently, there are needs to utilize ICT in HIS (e-health) in order to improve the management and implementation of health development. The need for data and information provided through the implementation of the Health Information System (HIS) is currently still fragmented and has not been able to provide reliable data and information so that the Health Information System (HIS) still cannot be an effective development management tool. The current information system can be described as follows:

1. Each program has its own information system which is not yet integrated so that if comprehensive information is needed, it will take a long time.
2. Limited hardware and software at various levels, even though the capabilities are considered adequate.

3. Limited ability and willingness of human resources to manage and develop information systems.
4. Decision making based on data/information has not yet become a culture.
5. There is no career development system for system managers, so there is often reluctance among officers to enter or be promoted to become information system managers.

The development and strengthening of the Health Information System is carried out by paying attention to the following principles:

1. Utilization of Information and Communication Technology (ICT)
2. Data Security and Confidentiality
3. Standardization
4. Integration
5. Ease of Access
6. Representation
7. Ethics, integrity and quality unh

Government Duties and Responsibilities in the Management and Development of Health Information Systems

The health information system must be regulated in a regulation and should be managed by an authorized party such as the government. This aims to ensure that the health information system can have uniform input, content and output regulated by the Indonesian National Standard (SNI), the government's duties as the person in charge of this SIK program are as follows:

1. The government has the right and obligation to regulate and manage the management and development of SIK on a national scale and facilitate the development of SIK in regions.
2. The provincial government has the rights and obligations to regulate and manage the management of SIK on a provincial scale.
3. The District/City Regional Government has the rights and obligations to regulate and manage.

Strategic Issues in Information Systems Development

Health Along with the development of information technology, there are several strategic issues in the SIK development and strengthening plan, namely:

1. The management capabilities of SIK are still limited, including legal basis, cooperation and coordination.
2. The data and information and indicators that need to be collected and used have not been completely and precisely defined.
3. The ability of data sources to provide data and information is generally still weak.
4. Data and information collection, processing and analysis activities are still not carried out effectively and efficiently.

4. Resource support, especially human resources, information and communication technology, facilities and infrastructure and financing are still limited.
5. The ability to develop and improve the quality of health data and information is still lacking.
6. The data and information produced have not been fully disseminated to relevant stakeholders and have not been used properly.

Concrete Steps to Strengthen Health Information Systems

The preparation of the Road Map for the Health Information System Strengthening Action Plan aims to ensure the implementation of an integrated SIK by utilizing information and communication technology by all stakeholders at the central and regional levels so that the work process becomes more efficient, transparent and able to provide reliable information in supporting health development.

CONCLUSION

The Health Information System (HIS) is a strategic element in national health development because it provides the data and information needed for decision-making, management, and evaluation of health programs. However, the implementation of HIS in Indonesia still faces significant challenges, including a fragmented system, limited technological infrastructure, low human resource capacity, and a suboptimal data usage culture. Additionally, weak legal foundations, inter-institutional coordination, and limited funding and capacity development support are also major obstacles. To overcome these barriers, strategic steps are needed, such as integrating information systems, standardizing data, increasing the use of information and communication technology (ICT), and the active role of central and local governments in system governance. The development of a roadmap for strengthening the Health Information System (SIK) is a concrete step that must be taken immediately to improve work efficiency, transparency, and the availability of reliable information in supporting data-driven health development in Indonesia.

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