



KERMAN UNIVERSITY OF MEDICAL SCIENCES

Faculty Management and Medical Informatics

In Partial Fulfillment of the Requirements for the Degree Ph. D in Health Policy

Title

Analysis of electronic health records policies in Iran and proposing policy options

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Thesis No :

Date : (June 2026)

Abstract:**Introduction and Objectives:**

Rapid technological advancement has made e-health an essential component of modern health systems. Electronic Health Records (EHRs), as a key tool of e-health, improve the quality of care, facilitate access to medical data, and enhance coordination among healthcare providers. Successful implementation of EHRs requires an understanding of existing challenges and facilitators to support effective policy-making and management. This study aimed to analyze EHR policies and identify factors influencing successful implementation in order to propose policy options for reducing barriers, addressing implementation challenges, and facilitating the realization of a digital health system in Iran.

Methods:

This study was a multi-method qualitative and review research with a health policy analysis approach conducted in three phases. In the first phase, a scoping review of studies related to EHR was performed to identify implementation challenges and barriers. In the second phase, EHR policies in Iran were analyzed using Walt and Gilson's policy triangle model, along with Lister's framework, Kingdon's multiple streams theory, and Schmeer's stakeholder analysis model. Data were collected through document analysis and semi-structured interviews, and stakeholders were analyzed based on their interest, power, position, and knowledge using PolicyMaker software. In the third phase, policy options were developed based on previous findings and prioritized using a qualitative multi-criteria decision-making approach and expert consensus.

Findings:

The scoping review based on the SURE framework identified challenges and facilitators of EHR implementation, showing that successful deployment extends beyond technological aspects and requires integrated governance, effective leadership, skilled human resources, sustainable infrastructure, and system interoperability. Interviews with 24 experts and policy analysis based on Walt and Gilson's model revealed that EHR policies in Iran, despite emphasis on e-health development, lack clear operational objectives, coherence, and an executable roadmap. Structural, cultural, economic, technical, environmental, and international factors also influence EHR implementation. The multiplicity of stakeholders with varying levels of power, interests,

knowledge, and positions, along with weak coordination among them, was identified as a major barrier. In addition, the policy process and implementation are challenged by misalignment among problem, policy, and political streams, leading to delays and inefficiencies. Prioritization of policy options using a multi-criteria decision-making approach and expert consensus indicated that integrated governance and coherent policymaking are the top priority, followed by standardization and improvement of technical and operational dimensions, sustainable financing and infrastructure development, strengthening strategic management and leadership, and human resource empowerment.

Discussion and conclusion:

The implementation of Electronic Health Records (EHRs) in Iran is a multidimensional process that goes beyond technological infrastructure and requires integrated governance, coherent policy-making, stakeholder coordination, sustainable resource allocation, and organizational and human readiness. Key challenges include weak interoperability, insufficient standardization, financial constraints, organizational resistance, and a shortage of skilled human resources. Policy analysis revealed that the lack of clear operational goals and the diversity and conflict of stakeholder interests have slowed and weakened EHR implementation.

Therefore, achieving an efficient and sustainable digital health system requires implementing policy options such as developing integrated governance and coherent policymaking, standardizing and enhancing system interoperability, ensuring sustainable financing and resource development, strengthening strategic leadership and management, and empowering human resources. Without strong institutional reforms and governance, the continuation of the current situation will lead to resource wastage and failure to achieve e-health objectives. The findings of this study provide actionable recommendations for successful EHR implementation and contribute to the development of a smart and digital health system in the country.

Keywords: Electronic Health Record (EHR), e-health, health policy-making, policy analysis, policy options