Review Article

# Information Governance Program: A Review of Applications in Healthcare

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### Abstract

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Rouzbahani F, Rabiei R, Asadi F, Moghaddasi H, Emami H Information Governance Program: A Review of Applications in Healthcare, Journal of Paramedical Context: The healthcare in different countries faces challenges in enhancing the quality of services and reducing the costs. Information governance provides a tool for effective and efficient management of information, the use of which contributes to improved productivity, and effectiveness of services and reduced costs. Identifying the applications and benefits of using this tool paves the way for its accurate and effective deployment in a variety of healthcare organizations. This study was conducted to identify and classify the applications of information governance program within healthcare systems. Evidence Acquisition: The study reviewed English studies related to the information governance applications in healthcare published during 2000 and 2017. The publications were identified by searching the Pub Med, Google Scholar, ProQuest, Scopus and Science Direct databases. The key words included, but not restricted to, information governance, health information governance, information governance program and impacts of information governance in health care. Having completed the search, 128 studies were retrieved, of which 23 were reviewed. Results: The Information Governance program applications were categorized into five general groups, including improving healthcare and patient safety, reducing the costs, enhancing the quality of data and information healthcare, enhancing the security and confidentiality of patient information, improving the management of information and healthcare organizations.

**Conclusion:** Through developing and implementing of Health Information Governance programs, updating information and upgrading information technologies, healthcare organizations could improve the quality of healthcare services and reduce the subsequent costs to achieve competitive advantages.

**Keywords:** Information Governance program, Application, Healthcare

### 1. Context

Today, Healthcare organizations are encountering numerous challenges for improving the healthcare quality and patient safety, reducing the costs and responding to changes in governance policies [1]. One of the main solutions to overcoming these challenges lies in timely access to accurate information and utilizing this information at different levels of healthcare system

decision-making process [2]. Therefore, they have considerable attention towards the development of information communication technology [3]. Healthcare organizations have access to a rich source of information and data. An appropriate governance framework for provision of correct information is essential for healthcare organizations in order to realize the potentials of these data and information

[4,5]. Information Governance [IG] as an applied governance framework, focuses on creating of an infrastructure, composed of policies and procedures for improving information management in healthcare organizations [6]. American Health Information Management Association defines IG as a broad organizational framework for managing information during the life cycle of information, supporting the strategic, operational, legal and statutory programs and risks in the organization [7]. According to Association of Records Managers and Administrators (ARMA), IG is a strategic framework including standards, processes, roles and criteria which hold organizations and accountable for individuals creating, organizing, protecting, using and disposition of information in accordance with the objectives of the organization [7-10].

In recent decades, due to increasing adoption of communication and information technologies in healthcare systems, many of developed countries and some other countries use health information networks [11], which has led to growths in data generation and distribution of healthcare information, existence of various healthcare data generation centers and the requirement of communication and sharing data between organizations, making it inevitable for related organizations to apply IG for health information management [10].

IG is increasingly seen as a critical organization-wide initiative in well-run healthcare organizations, not only to improve patient care and outcomes, but also as a counter measure to the growing threats of data breaches and ransomware attacks [12]. IG is an approach to manage and leverage information to support business processes with a focus on information quality, protection and life-cycle management [13-14]. If the managers and decision-makers of different healthcare institutions wish appreciate the importance and significance of IG and plan

to provide the context for establishing a broad-based IG programs in their respective entities, they first must acquire the right information (such as improving the quality of the healthcare and safety of the patients, improving interactions with patents, enhancing the quality of clinical documentations and reducing the costs) on different applications of IG programs. To pursue such purpose, this research aimed to extract, analyze and then categorize the applications of IG in various healthcare institutions.

### 2. Evidence Acquisition

search for finding relevant publication was conducted in Pub Med, Google Scholar, ProQuest, Scopus and Science Direct databases between May and June 2018. The studies that described the applications of Information Governance in healthcare between 2000 and 2017 and were published in English were included in this study. The search terms included, but not restricted to Information Governance. Health information governance, information governance program and impacts information governance in healthcare. The results of search with these terms, were then, combined using Boolean operator "and". Searching was supplemented with checking the bibliographies of identified articles, resulting in no further related Three reviewers independently examined the title and abstracts of the identified articles. Articles were selected if they addressed information governance in healthcare. Articles that merely focused on the information governance outside the healthcare context were excluded. A total of 128 studies were retrieved, 23 of which were investigated. The applications of IG in the health were then extracted and broadly categorized after removal of duplications.

#### 3. Results

The applications of Information Governance program was placed in the following six general categories:

- 1. Improving the healthcare and patient safety
- 2. Reducing the costs
- 3. Enhancing the quality of health information
- 4. Enhancing the security and confidentiality of health information
- 5. Improving the health information management
- 6. Improving the management of healthcare organizations (Table 1)

Table1. The Applications of Information Governance programs in Healthcare

Applications	Examples
Improving the healthcare and patient safety [12,14,15,18-20]	▶ Improving healthcare[12,14,18-19]
	▶ Improving population health[18,20],
	▶ Improving Patient Outcomes[12,15]
	<ul><li>Improving Patient Safety[12,18,20]</li></ul>
Reducing costs[8,12,14, 16, 20, 21- 22]	<ul><li>Minimizing Information Costs[12]</li></ul>
	• Reducing the volume of unnecessary information [20]
	<ul><li>Improving the reimbursement procedure[2,16]</li></ul>
	• Reducing the healthcare costs[8,14,21-22]
Enhancing the quality of healthcare information[4,9,10,12,21,28,34]	n[4,9- • Improving Information Integrity and Quality[1,9-10,14,34]
	<ul><li>Maximizing information value[12,28]</li></ul>
Enhancing the security and confidentiality of healthca information[1,4,7-8,12,23,27]	hcare • Minimizing information risks [12,23]
	• Ensuring of security and confidentiality of healthcare information[1,4]
	• Improving supervision of protection of information privacy [7, 8, 27].
Improving the healthcare informat management[1,8,15-16,22,27,34]	nation • Improving Content and Records Management[1,15]
	<ul><li>Rules and regulations Compliance[27,34]</li></ul>
	• Improving the effective use of information[15]
	<ul> <li>Employing the newer editions of clinical coding systems [16]</li> </ul>
Improving the management of healthcare organizations [8, 16,20,23,24,26,29].	ations • Increasing Productivity[20,24]
	<ul><li>Improve interaction with patients[16]</li></ul>
	• Activate business intelligence [16]
	• Managing population health through proper analyses of information
	[16]
	<ul><li>Predictive analyses of organizational resources[16]</li></ul>
	• Supporting the business strategy[20]
	<ul><li>Realizing competitive advantage[23]</li></ul>
	<ul><li>Supporting information strategic [8,26]</li></ul>
	<ul><li>Improving organizational performance[29]</li></ul>

# **3.1 Improving the Healthcare and Patient Safety**

Numerous advantages and benefits have been associated with IG, namely 'reduced medical errors, improved patient outcomes, reduced risks, the possibility of litigation, interaction with patients and supporting the business strategy' [15-17]. The studies showed that the potential of IG in improving the healthcare and patient safety provided a solid support for implementation of IG programs in 95% of cases [18]. Briggs [2013] suggested that the implementation of IG programs healthcare organizations contributed

reducing medical errors or malpractice as well as improving the healthcare services and patient outcomes [15]. Reeves [2015] introduced improving the quality of healthcare services and supporting the activities of the healthcare population as the benefits of implementation of IG programs [19].

### 3.2 Reducing the Costs

Increasing the productivity, increasing the efficiency and effectiveness, reducing the volume of unnecessary information and improving the reimbursement procedure are some of the advantages associated with the application of IG programs for reducing the healthcare costs[8,16, 20, 21- 22]. Dimick introduced management and curbing of costs as the primary drivers of the implementation of IG programs healthcare settings [2]. In addition, Empel (2014) suggested that improving productivity, enhancing the effectiveness and reducing the costs were some of the results of executing IG programs in the healthcare information system [20]. Reeves believed that the implementation of IG programs was effective in reducing the healthcare costs [19]. Meehan (2017) introduced decrease of treatment costs as one of the principal applications of IG programs [25].

### **3.3 Enhancing the Quality of Health Information**

The findings indicate that IG programs create a value for the organizations which brings about integration of information, improvement in data quality, improvement of information documentation, increasing the uses of information and safe healthcare data sharing and exchanges [4, 21, 23, 24, Kadlec (2014)suggests 26]. development of IG programs is required for better sharing and exchange of healthcare information in different fields, planning for managing the population health through proper analyses of information, tackling the issues of data integration and developing a approach resource concentrated to management [16].

The findings demonstrate that the implementation of IG programs helps improving the quality of data and as a result, the quality of clinical documentation [4, 26]. According to Warner (2013), clinical acquisition of data. clinical documentations and clinical content management requires the implementation relevant healthcare principles, instructions and standards, all of which are adequately addressed in IG programs [4].

### 3.4 Enhancing the Security and Confidentiality of Health Information

There are unique requirements for safeguarding the confidentiality, privacy and security of healthcare information, the fulfillment of which demands further information control and management efforts. Regarding the healthcare field, it is necessary to pay special attention to the rules governing the patient privacy and confidentiality of health information [4, 9, 10, and 21]. The findings showed that IG programs could pave the way for reducing the risks of information manipulation, strengthening the risk management process, imposing authorized-based limitations for information access and improving supervision of protection of information privacy [7, 8, 14, 20, 27].

Warner (2014) notes that the failure to implement IG programs could have consequences such as confidentiality and privacy breaches, inability in accessing and using healthcare data and information, inability in effective data exchanging and sharing, higher rates of abuse and manipulation of information and data [4].

### 3.5 Improving Health Information Management

Implementing an effective healthcare IG program provides standard processes and procedures for improving management of patient information across the healthcare system [15]. The development of electronic healthcare data requires an electronic information monitoring framework in order to ensure the quality of information. This is because a lack of quality information negatively affects the effectiveness and efficiency of organizations efforts [26]. In contrast, implementing an appropriate healthcare IG program enables organizations to use the electronic health records more effectively in order to provide stronger support for healthcare services, improve the care management and improve productivity while lowering costs [21].

Weak IG programs undermine or even run counter to the benefits of electronic healthcare records [21]. IG programs cover of health information field management [22]. Failure to implement appropriate IG programs makes exponentially challenging for healthcare organizations to adequately respond to the challenges of healthcare information such as security and confidentiality of patients' information, access to the necessary information for effective execution of activities and meeting of needs and controlling the related expenses through management and maintenance of a large volume of data [21].

Weinberg et al (2015) suggest that the implementation of IG programs could improve the effective use of information and at the same time could reduce the associated risks for the organization [23]. IG programs establish policies, prioritize investments, create value for information and protect it as organizational assets, define responsibilities regarding the information management and present the information as essential to successful healthcare services [8].

A well-established information governance program could mitigate the information management crises through assessing risks, identifying deficiencies and shortcomings, performing advanced planning, as well as putting policies, procedures, and tools in place, enabling HIM professionals to manage information effectively across the organization [28].

## 3.6 Improving the Management of Healthcare Organizations

Supporting the business strategy, realizing competitive advantage, improving the organizational performance, supporting strategic decision-making, handling various resources such as electronic health record and enhancing clinical researches are some of the advantages of implementing IG programs in the field of health management [13,16,23,24,26,29].

According to the case studies conducted by American Health Information Management Association (AHIMA) in 2013, healthcare organizations initiate IG programs in order to support quality management strategies, compliance, reducing risks and the possibility of litigation, improving interaction with patients and activating business intelligence [16].

As noted about the reasons for developing and implementing of IG programs by organizations, Kadlec (2014) enumerates fulfilling the requirements of employing the electronic healthcare records, participation in the schemes of healthcare information sharing and following the productivity of physicians [16]

Hovenga & Grain (2013) hold the view that governance of healthcare information is the primary and required component of measuring the credibility of the healthcare system and healthcare outcomes [30]. Kadlec (2014) suggests that it is necessary to formulate IG programs to make plans for managing population health through proper analyses of information [16]. It could also be applied to predictive analyses of supply chain as well as clinical, human and financial resources [16].

Finally, attention to compliance, provision of quality and safe healthcare services, costs control, accountability to variable reimbursement systems and developing service-provision models which are one of the main objectives of healthcare organizations, IG programs have come to be seen as a strategic necessity for these organizations [8].

#### 4. Conclusion

As the findings showed, the IG programs in health care settings could facilitate achieving organizational targets [31] including improving the quality of healthcare services and facilitating access to reliable and quality information [32]. The study run by AHIMA indicated an improvement in service delivery to patients as a result of implementing IG programs

[2]. This was in line with Briggs (2013) who argues that while reducing medical errors and malpractices, IG programs have the capability of improving healthcare quality [15]. Kadlec (2014) remarks the accountability of healthcare organizations to the services provided as one of the factors that justifies the necessity of IG programs and which in turn contributes to the improvements in the quality of healthcare services and ultimately the population health[16].

In addition, AHIMA suggests that IG programs are essential to the provision of quality and effective healthcare services. However, while surveying this association found out that two-third of healthcare organizations lacked information governance strategies [18]. Therefore, healthcare organizations need IG programs if they wish to realize one of their main objectives, namely provision of quality healthcare services [12, 28].

The findings showed cost reductions as other deliverable service of IG programs in the healthcare field. Dimick (2014) suggests management and controlling of healthcare costs as one of the positive effects of IG programs [2]. Furthermore, AHIMA has associated effective IG programs with improved organizational performance and lower healthcare costs [29]. Implementing IG programs generates reliable data which have proved essential to reducing the costs of healthcare provision and enhancing operational outputs [8]. These findings justify the implementation of healthcare IG programs for reducing the costs and improving the productivity of healthcare organizations through the creation of reliable and integrated information [21, 24]. Zender (2012) suggests that claims about covering the care costs reveal the necessity information running governance programs in the realm of health [33]. However, no empirical research was found remarking the impact of IG programs on reducing healthcare costs. This may be

explained by the novelty of the notion of running IG in healthcare settings.

Considering the findings, implementation of IG programs paves the way for improving the quality of documentations and safe healthcare data sharing. Dismute [2009] argues that poor data quality, poor decisionmaking and issues affecting policies provide the necessity of developing and executing of IG programs [34]. AHIMA asserts that management of clinical documentations requires the relevant healthcare principles, instructions and standards [4] which constitute the primary components of IG programs. The limited attention to the IG programs in practice led to the numerous incidents of defective data and information breaches records, of privacy confidentiality of the electronic patient records [9, 12]. Moreover considering the exchanges of healthcare information with providers, payers and patients, the need for safe and fast sharing of information is becoming more and more important and this justifies the necessity of implementing IG programs [9]. Similarly, Kadlec (2014) suggested that the electronic exchange of information requires a safe context which encourages the development of IG programs [16]. Therefore, considering the results of those studies which have introduced improving the quality of healthcare information and maintaining the security and confidentiality of information as the major application of healthcare IG programs, and observation of confidentiality, privacy and security of information in both real and virtual environments could be mentioned as the advantages of implementing IG programs [4, 9, 10, 12, 21, 28, 34].

The results of the current study showed that implementing IG programs improves the management of healthcare information and the life cycle of information from creation to process, storage and disposition through establishing relevant monitoring and execution policies, processes and standards [12, 35-39].

Datskovsky et al (2015) claims that IG programs must be developed to serve the aim of observing rules, regulations and policies of organizations in the field of information management [40].Briggs (2013) introduces IG programs as the processes initiator of standard procedures for better management of healthcare information across the healthcare system [15]. Kadlec (2014) believes that it is important to develop healthcare IG programs in order to employ newer editions of clinical coding systems [16]. programs also address related information management and governance challenges such as the patient privacy, information regulatory security, compliance, information lifecycle management [ILM][12].

Another study has revealed the lack of IG strategies in healthcare organizations for tackling challenges, the necessity acquiring the proper information effective operations and realizing important needs in relation to management of healthcare information as the primary of problems for cause healthcare organizations [22]. Therefore, the findings and the evidence prove that implementation of IG programs are essential to improving the healthcare information management and the healthcare organizational performance. Implementing IG programs prepares the field for the introduction of standard procedures and processes for improving the health information management across the health care system. IG programs are prerequisites to accurate, reliable, meaningful, accessible and timely provision information in diverse fields of health system, from care to national policy making. IG programs could pave the way for improving the quality of healthcare and patient safety, reducing the healthcare costs, cutting down repetitive and unnecessary procedures, decreasing readmissions and providing a faster and more effective decision-making process across the healthcare system. Moreover,

programs play a critical role in running technologies, such as electronic health records. Eventually, IG programs could minimize information risks and costs, while maximizing information value for better service delivery in healthcare organizations.

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### **Conflict of Interest**

The authors report no conflicts of interest in this work.

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