



# Investigating the performance of Hospital information systems in work flow Management

Zakieh Piri <sup>a</sup> , Hero Khezri <sup>b</sup> , Shahla Damanabi <sup>c</sup>

<sup>a</sup> Associated Professor, Health information Management, Tabriz university of Medical Sciences, Tehran ,Iran

<sup>b</sup> Msc ,health Information Management, Tabriz university of Medical Sciences, Tehran ,Iran

<sup>c</sup> Assistant Professor , Health information Management, Tabriz university of Medical Sciences, Tehran ,Iran

Received: 20 June 2020

Accepted: 26 July 2020

Published: 17 August 2020

## Abstract

Workflow management systems is approach for organizational processes. The current hospital information systems supported the work flow management. This research aims to investigate Hospital Information Systems according to the standard model for Business Rules Management

## Methods:

Through a cross-sectional study 10 teaching hospitals affiliated to Tabriz University of Medical Sciences equipped with a hospital information system were evaluated in 2013. Using a self-constructed checklist based on the standard functional model of EHR and interview with IT staff, data were collected. The compliance rate from 1 to 5 Data were analyzed by SPSS 16 and T test.

## Results:

EHR functional model is one of the activities of HL7 (Health Level Seven ) for EHR work flow Management is one of the basic parts of the model. The compliance with standards for all standards of work flow Management was  $1.40 \pm 0.51$

## Conclusion:

The compliance with the standards of EHR functional model for work flow Management is undesirable in hospital information systems. It is necessary to pay more attention to these standards in HIS software programming.

**Keywords:** work flow Management, Hospital Information System, EHR Functional model.

## How to cite the article:

Z. Piri, H. Khezri, SH. Damanabi, *Investigating the performance of Hospital information systems in work flow Management*, *J. Practical MIS*, 2020; 1(4): 07-10,

## Introduction

Management of organizational processes and procedures to identify the exact identification of each piece of data associated with the workflow management system Dygr.dr this model seems to be the most appropriate method(1). If the term process as a series of tasks within the organization to produce the final product, we define Workflow management and design information or tasks from one person to another according to specific rules referred to automate the administrative processes(2). Coordination and collaboration between people in different parts of the task is very important, but more repetitive tasks manually run these centers and coordinated And often leads to organizational problems and increase the workload of hospital staff is This leads to many

problems and unintended effects(3). Health care professionals need to maximize the highest level of dynamism and harmony, is faced with numerous challenges that Most of the care process and workflow(4). Workflow management system (WFMS) gives the most comprehensive approach for support of process (5).According to a set of procedural rules , a Workflow is a business process automation in all or part during which documents ,information or tasks are passed from one participant to another for action(6). Workflow Management system definition as several computer-based systems have been developed that performance workflow management ,either as a specific system or as part of larger system (7).

The WFMS focus on the replies to the following question:

what does done (business process and workflow)

how(activities)  
 by whom(participating actors)  
 and with what means (tools)(8).  
 WFMS ensures that the correct order of operations to carry out activities and to inform the operator of the operation performed in real and in real time. [9] Operator, WFMS database system and are part of the organization, Organizations with which they interact with the environment WFMS practice informed that initiate new activities When finished WFMS activity operator to notify the operator that the work has been finished. After the end of the exercise received WFMS The next task is to decide what activities The WFMS is essential in understanding the processes required to run6(HIS enjoying the support of organizational processes and process control, standardization of tools and processes essential step in the management process will be working7) Since the main objective standard, improve the quality, safety, reliability, efficiency and ability to continuously reduce costs, the exchange8). The need to introduce a functional model that one of the main activities of the standard HL7 (Health Level seven) in the field of electronic health records, it seems necessary Work flow management is one of the main functions of the functional model of information infrastructure9 In this paper we have introduced a standard for workflow management in electronic systems The workflow management in hospital information systems based on functional EHR in health centers are the city of Tabriz.

### Methods

This survey was conducted in 1392. The study population includes all teaching hospitals of Tabriz University of Medical Sciences hospital information system at the time the study was. The data gathered using a questionnaire based on the latest version available on standard functional model was Translated by the researcher(Table1). In order to determine the validity of the questionnaire form validation between 8 persons skilled in the distribution of the three aspects of transparency, the importance and relevance was confirmed. To determine test-retest reliability of the method used. Questionnaire was supplemented by interviews with officials, Department of Information Technology. Analyze data using statistical software to help SSPS16 and one sample T (compared to the average of sample data) have been. The decision is made based on merchant partners. Standard based on the results From an average of 1 to 33/2 at a disadvantage, 34/2 to 67/3 to 67/3 to 5 levels appropriate to assess the optimal condition(10).

### Results

Support workflow management functions including both the management and set up of work queues, personnel lists, and system interfaces as well as the implementation functions that use workflow-related business rules to direct the flow of work assignments. According to Table 1, the mean flow management 51/0

± 40/1 is. This indicator is undesirable components in Hospital Information Systems. T-statistics show that significant differences regarding workflow management component, the functional EHR hospital information systems.

### Conclusion

Results showed that the highest standard of workflow management in hospital information systems in the unfavorable situation. The performance of the Hospital Information System is under consideration. It is suggested that software engineers in accordance with hospital information system needs to be revised. And programmers standards EHR functional model using a set of workflow management on hospital information system. In order to set up a workflow management system optimized to perform administrative and organizational help in treatment centers.

- 1] Rezaei hachesoo P, Fozoonkhah SH, Safaei N, Lotfnejad afshar H. Organizational and Health care process management with use of information technology. Health Information management. 2012;7(3):325
- 2] Lenz R, Elstner T, Siegele H, Kuhn KA. A practical approach to process support in health information system. Am Med Inform Assoc 2002;9(6):571-85
- 3] Sim I, Gorman P, Greenes RA, Haynes RB, Kaplan B, Lehman H, et al. Clinical decision support system for the practice of evidence-based medicine. J Am Med Inform Assoc 2001;8(6):527-34
- 4] Margaret M. Bridging HEALTHCARE S Workflow Gaps. For The Record 2006;18(2):29.
- [5] Lenz R, Elstner T, Siegele H, Kuhn KA. A practical approach to process support in health information system. J Am Med Inform Assoc 2002;9(6):571-85
- 6) Singh Man K, Sadawarti H, Verma R, Gupta Ekta. An information Modeling Using EHR. International journal of computer science & communication. 2010;1(2):19-22
- 7) Eshuis H. Semantics and Verification of uml Activity Diagrams for Workflow Modelling, CTIT. [Thesis]. serise, Almelo; 2002
- 8) Graeber S. The Impact of Workflow Management System on the Design of Hospital Information System. proc AMIA Annu fall Symp 1997
- 9] Teich JM, Spurr CD, Schmitz JL, O'Connell EM, Thomas D. Enhancement of clinician workflow with computer order entry. proc Annu symp comput A PPL Med care 1995;495-63

6].Eshuis, Hendrik. Semantics and Veri. Cation of UML Activity Diagrams for Work.ow Modelling, CTIT Ph.D. thesis Series, Almelo, 2002  
 7] Weske M.Business Process Management Architectures .New york,NY:2012  
 8] Sadoughi F, Samadbik M, Ehteshami A, Aminpour F, Aminpour F, Rezaeihachaso p. Health

Information Technology. Tehran: jafari; 2011[Persian]  
 9] Devalt P,Fischetti L,Rowlands D, Speare C. HL7 HER TC Membership Level 2 Ballot on the HER-S Functional Model , RELEASE 1.2007 ;[1-34] Available from: URL www. HL7.org  
 10] Bazrgan A, Sarmad Z, Hejazi E. Methods of Research in Scienc Behavioral: Agah; 2008.

---

workflo 1.40 w manage ment function	.51 .16	-9.79	9	./000	-1.60
---	---------	-------	---	-------	-------

---

<b>variable average</b>	<b>tandar</b>	<b>Stan</b>	<b>T-</b>	<b>Degree</b>	<b>Difference</b>
	<b>d</b>	<b>dard</b>	<b>statist</b>	<b>s of</b>	<b>Significant\e</b>
	<b>viation</b>	<b>error</b>	<b>ics</b>	<b>freedo</b>	
				<b>m</b>	

---

s

---

1. The system SHOULD use workflow-related business rules to direct the flow of work assignments.
- 2, The system SHOULD provide the ability to create workflow (task list) queues.
3. IF the system provides the ability to create workflow (task list) queues, THEN the system SHOULD provide the ability to manage workflow (task list) queues.
4. IF the system provides the ability to create workflow (task list) queues, THEN the system MAY SHOULD provide the ability to manage human resources (i.e., personnel lists) for workflow queues.
5. The system MAY use system interfaces that support the management of human resources (i.e., personnel lists.)
6. The system MAY use system interfaces that support the management of workflow (task lists) queues.
7. The system MAY provide the ability to distribute information to and from internal and external parties.
8. The system MAY provide the ability to route notifications and tasks based on system triggers.
9. The system MAY dynamically escalate workflow according to business rules.
10. The system MAY dynamically redirect workflow according to business rules.
11. The system MAY dynamically reassign workflow according to business rules.

