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## Human Resource Information Systems in Healthcare: a Systematic Review (Protocol)

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## PROSPERO International prospective register of systematic reviews

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### Human resource information systems in healthcare: a systematic review

*Aizhan Tursunbayeva, Claudia Pagliari, Raluca Bunduchi, Massimo Franco*

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#### Citation

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#### Review question(s)

1. To determine the prevalence and scope of existing research and evaluation pertaining to Human Resource Information Systems (HRIS) in healthcare organisations.
2. To analyse, classify and synthesise existing evidence on the processes and impacts of HRIS development, implementation and adoption.
3. To inform recommendations for future HRIS research and practice, with reference to the domains of eHealth, business IT systems and human resource management.

#### Searches

Academic and grey literature will be searched, in order to identify and classify the existing evidence relating to the development, implementation, adoption and impacts of HRIS in health organizations worldwide. The topic lies at the intersection of Informatics, Management and Health, and for this reason the review will draw on a range of sources across the information systems, medical, and business literature. There will be no restrictions on language or publication year applied to the literature search.

#### Link to search strategy

[http://www.crd.york.ac.uk/PROSPEROFILES/23581\\_STRATEGY\\_20150524.pdf](http://www.crd.york.ac.uk/PROSPEROFILES/23581_STRATEGY_20150524.pdf)

#### Types of study to be included

Inclusion:

Any study involving a formal or semi-formal approach to the investigation or evaluation of HRIS, whether led by academia, industry (e.g. consulting sector) or from within the healthcare sector. This includes studies of HRIS development, implementation, deployment, diffusion, adoption, use and impacts. Studies of broader business/administrative/Enterprise Resource Planning systems that explicitly examine their application to HR practices will also be included.

Exclusion:

Reports that are purely descriptive or are concerned only with the computational design aspects of systems or pure market research, will be excluded, as the aim of this project is to glean evidence, including both softer and harder forms (e.g. social studies, quality improvement projects and impact evaluations).

#### Condition or domain being studied

This review concerns the effective development, implementation and use of information technology platforms and software for supporting the effective management of human resources within healthcare organisations and, in some cases, across healthcare systems. Basic HRIS provide a means of documenting personnel characteristics and roles, scheduling rotas and managing payment. More sophisticated HRIS can help to support internal quality improvement through responsive audit, provide intelligence for senior managers to enable smarter, learning health systems, and to inform future planning and strategy. While stand-alone systems exist, some HRIS are part of a more general health information or business system.

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### **Participants/ population**

There will be no exclusion based on participants/population group

### **Intervention(s), exposure(s)**

This review is not restricted to intervention studies, however it will include evaluations of interventions aimed at engaging personnel in the use of HRIS as well as evaluation studies where the implementation of the HRIS represents an intervention, whether or not this is part of an explicit experimental design.

### **Comparator(s)/ control**

This is not a review of clinical trials, and we anticipate that most studies will be of the qualitative/investigative type. However for studies evaluating an intervention, relevant comparators will include baseline measures of efficiency, such as payroll processing time, and indicators of impact, such as staff absenteeism, which could theoretically be associated with workload, or patient morbidity, which may be theoretically associated with effective staff deployment. Our inclusion criteria encompass all types of research or evaluation.

### **Context**

Any health organization, including primary, secondary or tertiary care settings, or health systems where HRIS are implemented at scale.

### **Outcome(s)**

#### **Primary outcomes**

Measured impacts on organizational efficiency, effectiveness, safety, quality and cost-effectiveness.

#### **Secondary outcomes**

- Effectiveness of change management processes;
- Indicators of implementation, adoption and use;
- Perceived benefits and disbenefits;
- Perceived facilitators and barriers;
- Satisfaction of managers and/or employees.

### **Data extraction, (selection and coding)**

One reviewer will search the databases and extract data with the help of a professional librarian. Two reviewers will screen and code titles and abstracts for potentially eligible studies. Any disagreements will be resolved by consensus or by involvement of a third reviewer. Full text articles will be retrieved for studies that meet the inclusion criteria. Reasons for exclusion will be noted for the remaining articles. A PRISMA flow diagram will illustrate the study selection process in order to ensure transparency of the review. The following information will be extracted from the eligible studies:

Authors/Institutional Affiliation;

Year;

Setting (type of organization, country or region in which the study was conducted);

Technological innovation stage (e.g. Design, Piloting, Implementation);

Journal discipline;

HRIS function/activity;

Research purpose/questions;

Theoretical basis (if specified, or if this can be deduced from the author's description);

Study design;

Main findings;

Conclusions.

Other fields may be added as the analysis progresses.

### **Risk of bias (quality) assessment**

Two reviewers will independently assess included studies and the advice of the third reviewer will be sought in case of any disagreement.

### **Strategy for data synthesis**

Data synthesis will be descriptive only.

### **Analysis of subgroups or subsets**

None planned

### **Dissemination plans**

Review results will be presented at international conferences and the research will be published in a peer-reviewed journal.

### **Contact details for further information**

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### **Organisational affiliation of the review**

University of Molise; University of Edinburgh

[www.unimol.it](http://www.unimol.it); [www.ed.ac.uk](http://www.ed.ac.uk)

### **Review team**

Mrs Aizhan Tursunbayeva, Department of Economics, Management, Society and Institutions, University of Molise (Visiting PhD student, eHealth Research Group, University of Edinburgh)

Dr Claudia Pagliari, eHealth Research Group, Centre for Population Health Sciences, University of Edinburgh

Dr Raluca Bunduchi, Business School, University of Edinburgh

Professor Massimo Franco, Department of Economics, Management, Society and Institutions, University of Molise

### **Details of any existing review of the same topic by the same authors**

None. Emerging topic.

### **Anticipated or actual start date**

01 May 2015

### **Anticipated completion date**

01 November 2015

### **Funding sources/sponsors**

Currently none

### **Conflicts of interest**

None known

**Other registration details**

None

**Language**

English

**Country**

Scotland, Italy

**Subject index terms status**

Subject indexing assigned by CRD

**Subject index terms**

Delivery of Health Care; Humans; Information Systems

**Any other information**

None

**Stage of review**

Ongoing

**Date of registration in PROSPERO**

25 June 2015

**Date of publication of this revision**

25 June 2015

**Stage of review at time of this submission**

Preliminary searches

**Started**

Yes

**Completed**

Yes

Piloting of the study selection process

Yes

No

Formal screening of search results against eligibility criteria

No

No

Data extraction

No

No

Risk of bias (quality) assessment

No

No

Data analysis

No

No

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**International prospective register of systematic reviews**

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