WM9QU-15 Informatics for Operational Management in Healthcare

25/26

Department
> WMG

Level
> Taught Postgraduate Level

Module leader
> Sudakshina Lahiri

Credit value
> 15

Module duration
> 4 weeks

Assessment
> 100% coursework

Study location
> University of Warwick main campus, Coventry

Description

Introductory description

This module will allow students to explore concepts of health informatics and its applications in the context of operational management. Topics will include examination of approaches for understanding the application and use of technology and its impact on quality systems. Students will gain further understanding of the opportunities and challenges in the application of information technology and its role in harnessing healthcare data and information for operational efficiency and quality improvement.

Module aims

This module aims to provide students with in-depth knowledge of the use of information technology for operational efficiency in healthcare settings, and current gaps in the design and use of information technology. Students will also gain knowledge about the functions of interoperability of different systems related to data security and confidentiality along with ethics surrounding information sharing. Upon module completion, students will be able to evaluate frameworks and techniques that underpin the role of information technology in healthcare quality improvement.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

1. Implementation and evaluation of evidence-based tools for the introduction of health technologies in the context of operational management
2. Concepts of knowledge hierarchy: data, information, knowledge, and their role in health informatics
3. Concepts of patient-centered care and information systems that support them
4. Issues of security, confidentiality and ethics involving data sharing
5. Data and information needs driven by evolving regulatory needs

Learning outcomes

By the end of the module, students should be able to:

- 1. Critique the role and functions of information technology in healthcare operational management.
- 2. Articulate in-depth understanding of the conceptual framework for handling biomedical data collection, storage, and their optimal use.
- 3. Critique the principles, concepts, and technological elements that make up the building blocks of health informatics in the context of quality improvement.
- 4. Systematically identify the principles that underpin healthcare information technology standards related to healthcare processes.
- 5. Evaluate factors for the integration of processes, skills and technologies that are necessary to support healthcare systems performance.

Indicative reading list

Textbook: Wager, K. A., Lee, F. W., & Glaser, J. P. (2022). Health care information systems: A practical approach for health care management, 5th Edition. Jossey-Bass. ISBN-13: 978-1119853862

[View reading list on Talis Aspire](#)

Research element

Issues of operational management and informatics in healthcare settings often function in siloes resulting in quality improvement initiatives falling short of expectations. This module endeavors to integrate the two elements, i.e., operational management and informatics.

Interdisciplinary

Healthcare operational management is an evolving discipline that combines health science methodologies with engineering, statistics, quantitative elements of management sciences with

data science for quality and productivity improvement in the healthcare sector. In the context of this module, elements of data science and engineering science in healthcare processes are emphasized.

Subject specific skills

-measures of healthcare data quality
-syntactic and semantic interoperability
-security, confidentiality, and ethics involving healthcare data

Transferable skills

-technology literacy
-data and information literacy
-adaptability

Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Seminars	(0%)
Project supervision	10 sessions of (0%)
Practical classes	(0%)
Online learning (scheduled sessions)	(0%)
Online learning (independent)	10 sessions of 1 hour (7%)
Other activity	15 hours (10%)
Private study	45 hours (30%)
Assessment	60 hours (40%)
Total	150 hours

Private study description

Further reading around evidence based approaches and analytics necessary for healthcare quality improvement.

Other activity description

Self-directed activities for preparation towards class work. Guidance for these activities will be provided to students in class.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time	Eligible for self-certification
Written assessment-1	60%	35 hours	Yes (extension)
Conducting systematic review based assignment. Word count: 2500.			
Written assessment-2	40%	25 hours	Yes (extension)
Modelling and analysis of quantitative data.			

Feedback on assessment

Written feedback.

Availability

Courses

This module is Core optional for:

- Year 1 of TWMS-H1S5 Postgraduate Healthcare Operational Management (Full-time)