

Faculty of Clinical Informatics

Development of Core Competencies for Clinical  
Informaticians in the United Kingdom

Phase 1 – Summary Report.

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31/7/2020

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## 1. FCI Core Competencies Project – scope and rationale

### 1.1 Overview

The Faculty of Clinical Informatics (FCI) was established in March 2017 to support the needs of Clinical Informaticians (CIs) in the United Kingdom (UK). Two overarching aims for the FCI at its inception were to;

- Develop professional competencies for clinical informaticians.
- Provide accreditation for informatics-based training programmes

The CCP provided a methodology for the development of core knowledge and skills-based competencies for CIs and the mechanism by which these competencies can be mapped to educational and professional developmental initiatives for accreditation. Evidence that an individual has achieved these core competencies should qualify that person for membership of the FCI.

### 1.2 Project Aims

- I. Develop core knowledge and skill-based competencies required for UK-based CIs.
  - a. Develop, test and define the output core competences required of a professional clinical informatician (phase 1)
  - b. Define the core skills, knowledge and traits that constitute the core (input) competencies.<sup>1</sup> to enable an individual CI to do the job. (phase 2)
- II. Develop a process for accrediting informatics educational applications through the FCI. (phase 3)

Phase 1 of the CCP was undertaken directly by the FCI project team and was presented as three linked reports (below). This is a summary of the findings from these reports.

- A. *Discovery stage*: Develop and define the professional attributes of a clinical informatician – final report (v1.1) [\[Report A\]](#)
- B. *Validation stage*: Phase 1 Report - Validation Study and draft Output Competences for a Clinical Informatician (v1.1) [\[Report B\]](#)
- C. *Consultation stage*: Phase 1 Report – Consultation Exercise and Output Competences for a Clinical Informatician (v1.1) [\[Report C\]](#)

### 1.3 Method

The methodology for this project has been developed with expert academic advice from Dr Lydia Jidkov, Prof. Trish Greenhalgh and Prof. Georgina Moulton. The CCP is being undertaken jointly by the FCI and the University of Manchester.

The key task of phase 1 of the CCP was to define the output competences<sup>2</sup> we expect of care professionals working as CIs in the UK. Drawing on the expertise of the multi-professional membership of the FCI we used a mix of qualitative methods to derive and refine the list of output competences.

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<sup>1</sup> 'Core' in this context denotes the minimum knowledge base that all CIs must have to be eligible to become members of the FCI and excludes further sub-specialist avenues of education.

<sup>2</sup> Competence may be defined in terms of what the individual brings to the job (the input), what the individual does in the job (the process), or what is actually achieved (the output).

The outputs from phase 1 of the CCP were used to inform and underpin phase 2 of the project – the development of a competency framework for clinical informaticians. Phase 2 was undertaken by the Univ. of Manchester (UoM) under Prof. Georgina Moulton and the protocol and report have now been published on the [FCI website \(https://facultyofclinicalinformatics.org.uk/core-competency-framework\)](https://facultyofclinicalinformatics.org.uk/core-competency-framework).

The final phase of the CCP was to develop a mapping process from the outputs of phases 1 and 2, which the FCI can use to accredit educational CI applications (phase 3). Phase 3 will be completed by 21 August 2020.

## 2. The output competences of a clinical informatician

To be a clinical informatician first and foremost, you must be a registered and regulated health and care professional. Statement 1 is unchanged.

### **Statement 1.**

*Firstly, and fundamentally, we are describing a landscape occupied by professional clinicians who are also informaticians. So, the first criterion is that a clinical informatician must be a health or care professional registered with one of the regulators overseen by the Professional Standards Authority to be eligible for full membership or fellowship of the FCI.*

We offer below, a short *description* of clinical informatics, based on comments and feedback received throughout Phase 1 of the CCP. This description is inclusive of health and care, is person-focused and links data and information to health and care.

### **Statement 2.**

*Clinical Informatics is the application of data and information technology to improve patient and population health, care and wellbeing outcomes and to advance treatment and the delivery of personalised, coordinated support from health and social care.*

Statement 1 sets out that a clinical informatician is a clinician who is also active in health informatics. To reflect this and emphasise the importance of person-centred care leads us to offer a description of a clinical informatician as set out below in an updated Statement 3, which is inclusive of health, care and informatics with a focus on person-centred care.

### **Statement 3.**

*A clinical informatician uses their clinical knowledge and experience of informatics concepts, methods and tools to promote patient and population care that is person-centred, ethical, safe, effective, efficient, timely, and equitable.*

Again, we believe this description is inclusive of health, care and informatics with a focus on person-centred care.

Statement 4 sets out the importance of inclusivity in clinical informatics. Our guiding principle has been that often “less is more” in ensuring inclusivity in terms of collaboration and cooperation.

### **Statement 4.**

*It is essential that clinical informatics finds ways to work in collaboration and cooperation with patients, social care professionals and non-registered informaticians working in health and care.*

Statement 5 sets out the set of principles that came to mind when clinical informaticians described the boundaries that distinguish clinical informatics as a professional discipline

**Statement 5.**

*The Principles set out below describe the boundaries that distinguish clinical informatics as a professional discipline. Clinical informaticians operate across the whole cycle of information processes, programmes, products and projects, bringing benefit to people and users at service, system and population levels.*

The **principles**:

- a) **Purpose:** of clinical informatics is the improvement in the quality and user experience of health and social care. The areas of primary interest for clinical informatics are patient-centred care and support, data<sup>3</sup>, technology and communication.
- b) **Inclusivity:** clinical informatics encompasses and gives equal weight to health and social care. Clinical informatics is about the delivery of health, care and support services by individuals and teams, that may be multi-professional, multidisciplinary and multiservice, with the crucial involvement of patients, carers and family.
- c) **Diversity:** clinical informatics is a diverse discipline and areas of focus may vary greatly (e.g. clinical safety, developing Apps and information governance). Each area of focus is equally important to achieving the overall aim of better person-centred health and social care.
- d) **Interdisciplinary:** clinical informatics brings together learning from multiple disciplines including (but is not limited to); social sciences, biology, ICT, computer science, data science, psychology, linguistics, engineering, statistics, mathematics, medicine, and many others. It is important to recognise the contribution of those working at a strategic level, those influencing policy as well as those operating at operational level.
- e) **Whole cycle:** clinical informatics is concerned with the whole cycle of a process, programme, product, or project. That includes inception, development, testing, roll-out, evaluation and process shut down. Those working in informatics can operate at one or more parts of the cycle.
- f) **Impact:** Clinical informatics operates at service, system, and population levels and within organisational, developer, practitioner and end user culture. The benefits of clinical informatics are at the individual, service, system and population levels

Statement 6 sets out the areas that define the scope of clinical informatics practice.

**Statement 6.**

*The set of Areas that describe the scope (functional domains) of clinical informatics practice include:*

The **areas**:

- a) The interface with data and information technology in health and social care, including Electronic Health and Care Record (EHCR) systems and access for the patient / service user.
- b) Application of clinical informatics across the lifespan and complex context in which health and social care services operate with a focus on clinical safety and inter-operability
- c) Data collection, analysis, interpretation, management and standards
- d) Interventions for clinical decision support, analytics, learning systems and data visualisation to facilitate optimal health and social care delivery
- e) Innovative communications with those who use health and care services to facilitate their appropriate and informed use of service provision
- f) Governance frameworks and data usage policies and procedures for assurance of high-quality ethical use of health and care data, including new areas of technology and clinical practice (e.g. machine learning and genomic medicine)

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<sup>3</sup> "Data" may be too restrictive in this context, so this should be read as "data, information and knowledge".

- g) Clinical informatics includes a leadership role supporting the clinical community to engage with, develop and make best use of informatics as a clinical asset.
- h) Clinical informatics leadership and skills can be deployed at policy, strategy and operational levels within and beyond the health and care system.
- i) Contribute to professional, patient and service user education and training.
- j) patient and user engagement and, co-design and co-ownership.
- k) Evidence and knowledge management/knowledge mobilisation & best practice

The set of professional attributes presented under Statement 7 were strongly supported in the consultation.

#### **Statement 7**

*The set of Professional attributes of a clinical informatician (process competences) are set out below and include:*

The *professional attributes*:

The clinical informatician works proactively and collaboratively to:

- a) **Define and prioritise** the needs of those accessing care services and clinical informatics innovations (processes, systems, policies, products and programmes)
- b) **Take a leadership role** including responsibility and accountability for clinical informatics processes, change management and service transformation
- c) **Lead, manage and evaluate** the opportunities and limitations of informatics innovations (processes, systems, policies, products and programmes) in improving the quality of care delivery and experience
- d) **Identify and take appropriate action** against ethical, legal, data protection and security risks
- e) **Ensure** that informatics innovations (processes, systems, policies, products and programmes) are appropriate for the proposed purposes, that they are safe, practical and implementable
- f) Identify and address **clinical safety** issues
- g) Ensure that **standards, guidance and best practice** are adhered to in clinical informatics
- h) **Work constructively with** other senior information, organisational and professional leaders (e.g. SIRO, CCIO, CIO, Caldicott Guardian & Data Protection Officer) within and across organisations.

### 3. Conclusion

During Phase 1 of the Core Competencies Project, we explored, validated and consulted on what clinical informatics is and who we are as clinical informaticians. We have set this out in detail in our phase 1 Reports (A, B & C). In doing so, we believe we have met the first key challenge that was set for this project; to be able to describe who we are and what we do.

We present our findings and recommendations as a revised and updated set of statements, following a consultation exercise with our membership, the wider informatics community and key stakeholders.

These statements provide descriptions of clinical informatics and clinical informaticians accompanied by sets of professional attributes, principles and areas of activity that together describe the set of output competences of a clinical informatician. In turn these were used to inform phase 2 of the CCP – the development and description of a competency framework for clinical informaticians.

*Alan Hassey*

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