

Developing Health ICT Skills

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Healthcare Informatics Society of Ireland

~Cumann Ríomheolais Sláinte~

Incorporating the Healthcare Informatics sections of
the Royal Academy of Medicine in Ireland and of
the Irish Computer Society



Current Situation

- Recognition of the importance of ICT for delivery on quality outcomes, patient safety and health service commitments
 - ICT Professional staff (highest level development and implementation)
 - Healthcare professionals
 - Front line/admin staff (ICT users at all levels to be **Aware of, Accept and Embrace** the need for Health Informatics)
- Currently insufficient ICT professionals. The need is growing.
 - Range from technical, clinical to business emphasis
- Skills requirements and availability in short, medium and long term not identified

Way Forward...

Take advantage of the moment:

- The energy of this event
- The fact of the EU-US MoU
 - *“strategies for development of a skilled IT workforce and of eHealth IT proficiencies in the health professional workplace...”*
- Skills and healthcare objectives of the Digital Agenda for Europe
- The Irish presidency of the EU next year
 - Commitment to make this a proactive, delivering presidency
- eHealth Week in Dublin 2013
 - Target to aim for ...

Way Forward...

- Prepare a proposal to initiate a project or a number of projects
- Based on
 - DG CONNECT eHealth CSAs in ICT Call 10
 - Larger scale European Project
- Proposing
 - Co-ordinated approach to investigate, evaluate and recommend a way forward
 - Establish and manage a Professional Development Scheme utilising an accredited **ICT Skills Curriculum Matrix**
 - Synergies between the project and progress in the US can be exploited
 - Enable the current workforce to become the solution

Goals of the Project

- Identify, address broad competency and knowledge deficiencies (ICT focus) among **all** healthcare staff in (delivery, management, administration)
- Provide healthcare staff with appropriate arrangements to access professional development services
- Define and agree common standards of competence and professionalism –
 - “fitness to practice” HI
 - Common approach for the accreditation of professionals
- Use some established tools to create a career-focussed healthcare ICT skills development/training framework
 - Pre-service training through a variety of roles to senior professional position.

Work Plan

- Audit and measure skills of existing ICT professionals
- Audit and measure ICT infrastructure capability
- Establish training and development schemes
 - For developing and expanding current skills
 - For up-skilling and redeployment of other healthcare professionals
 - For raising ICT competence of non-professional healthcare staff
- Nurture a competent, productive and effective human resource with appropriate ICT skills

Work Plan

Create an agreed, accredited **ICT Skills Curriculum Matrix**, utilising the many national and international tools and resources

Suggestions:

- e-CF (The European e-Competence Framework)
- IT-CMF (The IT Capability Maturity Framework)
- EQF (European Qualifications Framework)
- UKCHIP

Take account of domain sensitivities

Adapt and adopt principle

The European e-Competence Framework (eCF)

A common European framework for ICT Professionals in all industry sectors

- International tool for:
 - **ICT practitioners and managers**, with clear guidelines for their competence development
 - **Human resources managers**, enabling the anticipation and planning of competence requirements
 - **Education and training**, enabling effective planning and design of ICT curricula
 - **Policy makers and market researchers**, providing a clear and Europe-wide agreed reference for ICT skills and competences in a long-term perspective
 - **Procurement managers**, providing a common language for effective technical terms of reference in national and international bids.

e-CF 2.0

Dimension 1 5 e-Competence areas, derived from the ICT business processes
PLAN - BUILD - RUN - ENABLE - MANAGE

Dimension 2 A set of reference e-Competences for each area, with a generic description for each competence. 32 competences identified in total provide the European generic reference definitions of the framework.

Dimension 3 Proficiency levels of each e-Competence provide European reference level specifications on e-Competence levels e-1 to e-5, which are related to EQF levels 3-8.

Dimension 4 Samples of knowledge and skills relate to e-Competences in dimension 2. They are provided to add value and context and are not intended to be exhaustive.

e-CF 2.0 overview

Dimension 1	Dimension 2	Dimension 3				
5 e-Comp. areas (A – E)	36 e-Competences Identified	e-Competence proficiency levels e-1 to e-5, related to EQF levels 3-8				
		e-CF levels identified per competence				
		e-1	e-2	e-3	e-4	e-5
A. PLAN	A.1. IS and Business Strategy Alignment					
	A.2. Service Level Management					
	A.3. Business Plan Development					
	A.4. Product or Project Planning					
	A.5. Design Architecture					
	A.6. Application Design					
	A.7. Technology Watching					
	A.8. Sustainable Development					
B. BUILD	B.1. Design and Development					
	B.2. Systems Integration					
	B.3. Testing					
	B.4. Solution Deployment					
	B.5. Documentation Production					
C. RUN	C.1. User Support					
	C.2. Change Support					
	C.3. Service Delivery					
	C.4. Problem Management					
D. ENABLE	D.1. Information Security Strategy Development					
	D.2. ICT Quality Strategy Development					
	D.3. Education and Training Provision					
	D.4. Purchasing					
	D.5. Sales Proposal Development					
	D.6. Channel Management					
	D.7. Sales Management					
	D.8. Contract Management					
	D.9. Personnel Development					
	D.10. Information and Knowledge Management					
E. MANAGE	E.1. Forecast Development					
	E.2. Project and Portfolio Management					
	E.3. Risk Management					
	E.4. Relationship Management					
	E.5. Process Improvement					
	E.6. ICT Quality Management					
	E.7. Business Change Management					
	E.8. Information Security Management					
	E.9. IT Governance					

European e-Competence Framework 2.0- Competency Assessment

Name:	An Example.....
Business Division:	
Validated By (Line Manager):	
Date Validated:	

Dimension 1	Dimension 2	Dimension 3				
5 e-Competency Areas (A-E)	36 e-Competencies Identified	e-Competence proficiency levels				
		Level 1	Level 2	Level 3	Level 4	Level 5
A.PLAN	A.1 IS and Business Strategy Alignment					
	A.2 Service Level Management					
	A.3 Business Plan Development					
	A.4 Product or Project Planning					
	A.5 Design Architecture					
	A.6 Application Design					
	A.7 Technology Watching					
	A.8 Sustainable Development					
B.BUILD	B.1 Design and Development					
	B.2 Systems Integration					
	B.3 Testing					
	B.4 Solution Deployment					
	B.5 Documentation Production					
C.RUN	C.1 User Support					
	C.2 Change Support					
	C.3 Service Delivery					
	C.4 Problem Management					
D.ENABLE	D.1 Information Security Strategy Development					
	D.2 ICT Quality Strategy Development					
	D.3 Education and Training Provision					
	D.4 Purchasing					
	D.5 Sales Proposal Development					
	D.6 Channel Management					
	D.7 Sales Management					
	D.8 Contract Management					
	D.9 Personnel Development					
	D.10 Information and Knowledge Management					
E.MANAGE	E.1 Forecast Development					
	E.2 Project and Portfolio Management					
	E.3 Risk Management					
	E.4 Relationship Management					
	E.5 Process Improvement					
	E.6 ICT Quality Management					
	E.7 Business Change Management					
	E.8 Information Security Management					
	E.9 IT Governance					

Domain Sensitivities Specific to Health Settings

Functional Areas Specific to Health Settings		Level of Expertise				
Area of Expertise		Level 1	Level 2	Level 3	Level 4	Level 5
FUNCTIONAL EXPERTISE	F.1 Laboratory Systems					
	F.2 Patient Administration Systems					
	F.3 Radiology Information Systems					
	F.4 Performance Management Systems.					
	F.5 SPSS/Statistical Analysis					
	F.6 Generic Internet					
	F.7 Decision Support Systems					
	F.8 Commissioning					
	F.9 Database Administration					
	F.10 Network Infrastructure					
	F.11 C.R.M./C.M.S.					
	F.12 Document Management					
	F.13 G.I.S.					
	F.14 Prescribing Systems					
	F.15 Waiting List Management					
	F.16 Other*					

Level 1- Support Operative, Level 2- Developer, Level 3- Business Analyst, Level 4- Technical Specialist, Level 5- Project Manager

*This list is not exhaustive and will vary from institution to institution depending on casemix and specialty

The IT Capability Maturity Framework (IT-CMF)

- Maps organizations onto a capability maturity curve across 33 different capabilities of IT management
- Ensures the IT organization's capacity to deliver business value
- Focuses on achieving a value driven and professional approach to IT management
- Already has proven value in healthcare settings



Healthcare IT (HIT) Maturity Programme

Part A: Individual hospital analysis on necessary capabilities towards EMR adoption

Assessment

Analysis

Recommendation

IT-CMF V1.0

Welcome | IT Maturity Assessment | IT Posture Assessment | IT Value Performance Assessment | Summary

Assessed value performance is calculated by evaluating the effectiveness of delivering against these four objectives weighted by their importance.

Firstly, estimate the relative importance of the four objectives i.e. how important are the following outcomes of IT usage on a scale from 1 (Not Important) to 5 (Very Important)?

Then estimate performance on each objective i.e. what is the influence of the use of IT in your business on the following measures of success on a scale from 1 (Not Successful) to 5 (Very Successful)?

Supportive notes are added throughout the assessment to help guide your responses - as you navigate through the assessment, mouse-over underlined words, icons and drop-downs for additional help.

Adapted with permission from IT Governance Performance Assessment tool (Peter Weill/Jeanne Ross)

Question Importance Performance Value Performance Context

IT-CMF V1.0

Welcome | IT Maturity Assessment | IT Posture Assessment | IT Value Performance Assessment | Summary

Select a value between 1-5 to illustrate which statement best represents your overall opinion. Select '1' if you strongly agree with the statement on the left or '5' if you strongly agree with the statement on the right. Enter '3' if your opinion lies in the middle of the two statements.

Supportive notes are added throughout the assessment to help guide your responses - as you navigate through the assessment, mouse-over underlined words, icons and drop-downs for additional help.

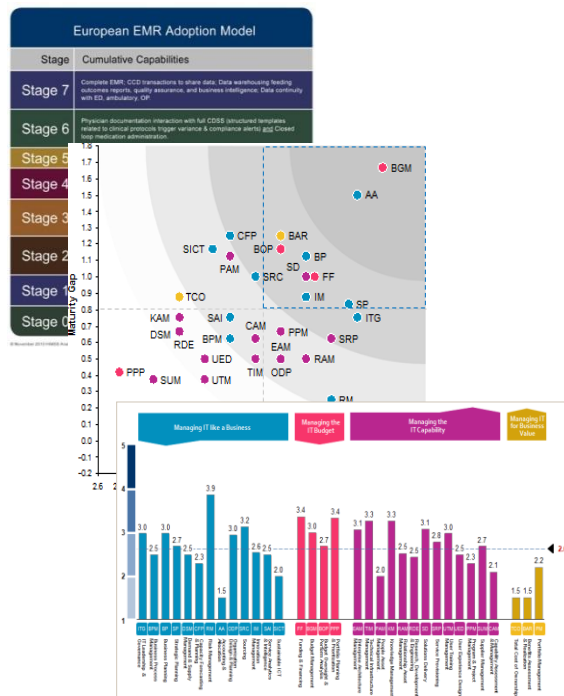
Please use an informed response when answering questions. Where you do not have visibility/knowledge of a question's subject matter, please invite a colleague to complete or leave the question blank.

Score 1 <-----> 5

Posture Context

- In IT we are laggards in adopting new technologies. In IT we are aggressive early adopters of new technologies.
- We deploy IT in support of current business operations. We view IT as a fundamental driver of future business activity.
- We view IT as an expense to be managed. We see IT as a resource to be leveraged for future competitive advantage.
- We view IT outsourcing as a threat to our IT operations. Our sourcing strategy balances in-sourcing with outsourcing.
- We use one criterion for assessing value from IT. We use multi-dimensional criteria for measuring IT value.
- Our IT operations reflect a captive, internal monopoly. Our IT operations act as a solutions integrator to business requirements.
- Our investment in IT is less than the average in our industry. We invest more in IT than the average in our industry.

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Identified capabilities... ... can be enhanced by practices defined by the IT-CMF

Programme & Project Management

- Adopt consistent and comprehensive PPM processes enterprise wide
- Ensure both techniques are standardised and further developed centrally
- Integrate comprehensive monitoring, metrics & reporting with line reporting
- Install formal RM process and conduct post-project review to diagnose gaps
- Document reporting lines covering both the IT & business

Portfolio Management

- Continuously monitor projects within the portfolio
- Monitor allocation of human, financial and infrastructure resources to IT programmes / projects
- Regularly report on portfolio status and trigger decision making if a project goes beyond a defined threshold
- Provide continuous assessment of adherence to original business case and to the benefits realisation plan

Demand & Supply Management

Roadmap to increase maturity

Immediate actions	Mid-term initiatives	Long-term strategy
Strengthen risk assessment, partnering and monitoring processes <ul style="list-style-type: none"> Formally classify services by critically and set according target maturity levels to S&A activities Establish overarching planning process to align tools and processes for profiling, planning, and business integration Define consistent approach to link infrastructure performance measurements to service performance measurements 	Improve empirical modelling and formulate scenario planning processes <ul style="list-style-type: none"> Investigate modelling alternatives to accommodate dynamic allocation of servers to services within parts of the organisation Investigate capacity planning (i.e. reducing dependence on specialist expertise) Optimize sizing of IT infrastructure to match demand for IT services to facilitate prioritisation of investments / commitments based on demand 	Establish proactive results analysis <ul style="list-style-type: none"> Cost quality must be measured proactively by emphasizing continuous improvement activities, a governance model has to include data reworking Optimize capacity planning Reduce data stored on specialist equipment Optimize sizing of IT infrastructure to match demand for IT services to facilitate prioritisation of investments / commitments based on demand Optimize open cost per service to

Facilitate communication

- Maximize reporting of metrics for IT

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HEALTHCARE ENTERPRISE

Overview | **IT-CMF Maturity** | Data Center

WORLDWIDE

AMSTERDAM | BRUSSELS | GENEVA | LONDON | PARIS | ROME | VIENNA

HEALTHCARE ENTERPRISE

Enhancing the Healthcare Enterprise

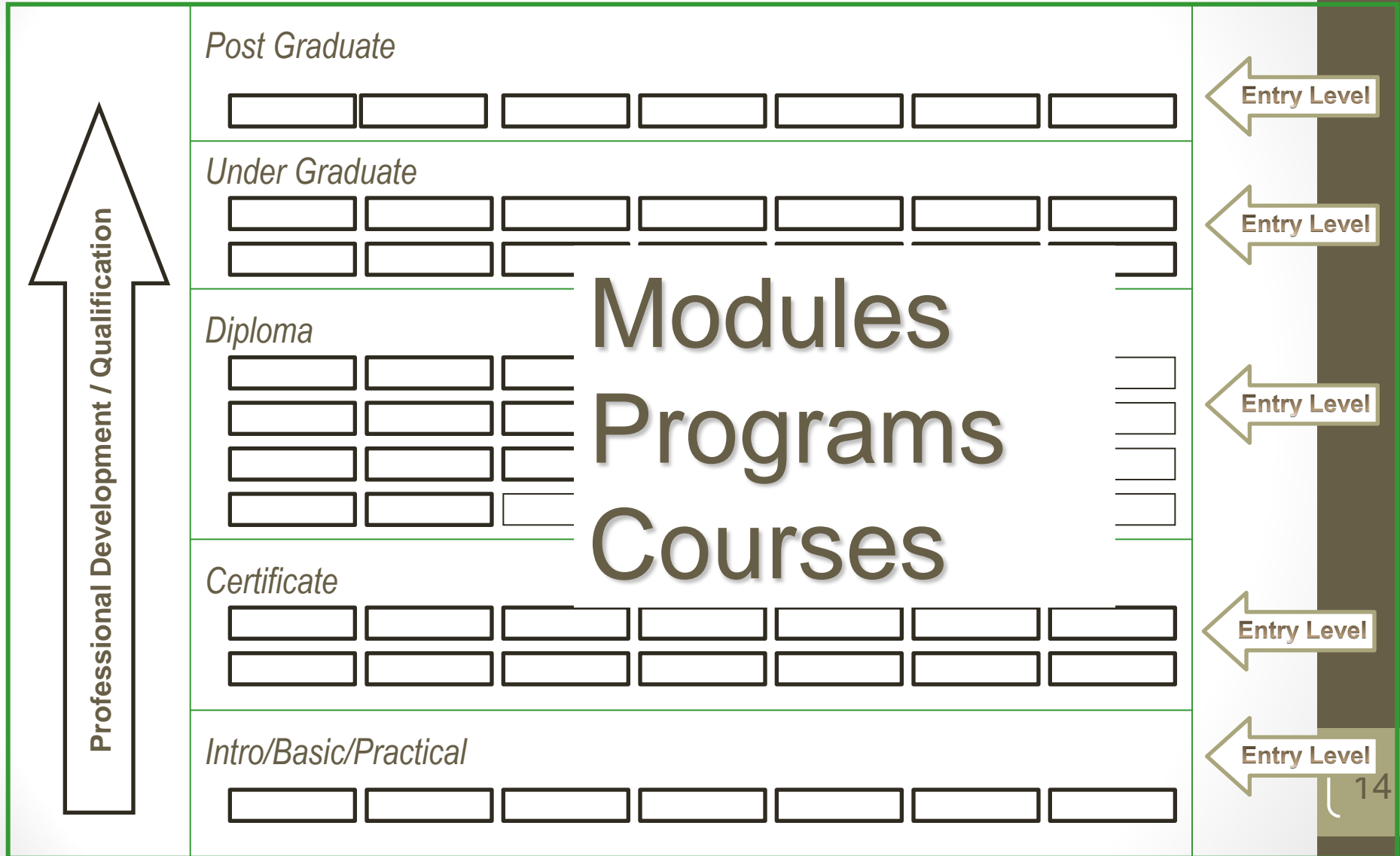
For medical and patient organizations, the opportunity to use IT to enhance major clinical and business goals has never been greater. But neither has the pressure to invest carefully and control costs.

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- Optimize the flexible, cost-effective IT infrastructure your fast-changing environment demands

Assess IT capability and create a tailored roadmap to IT excellence

ICT Skills Matrix



Advantages of the Matrix Solution

- Availability of existing professional and academic programmes/modules to build on
Universities, Institutes of Technology, Professional Bodies, Commercial, UK Chip, HIMSS
- ICT resources can be provided without impacting staff ceilings
- Validation of professionalism of ICT in healthcare
- Career path provided for all healthcare staff
- Personal development of staff facilitated
- Provides for the IT requirements within clinical/professional non-IT roles

Opportunity

- Major task of Irish Presidency is to promote the MoU
 - Take on the challenge to act, not talk
- Determination, imperative to be focussed
- Much deliberation and investigation into processes for developing a skilled healthcare workforce at all levels
- Importance beyond healthcare
 - Business innovation, enterprise, jobs
- Can deliver for EU, US and Ireland

Next Steps

Let's take this on – today

Assemble a consortium

Talk to us and get involved

Get ready for action!

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