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Actions to empower digital competences in healthcare workforce: a qualitative approach

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Abstract. While healthcare systems are taking advantage of the ICT to improve healthcare services, healthcare workforce needs additional competencies in order to continue the provision of the best achievable care. In this paper emphasis is given to an active research effort taken during the MEI2015 Conference. Based on hands-on group-work, participants identified the actions needed to boost the acquisition of IT competences by healthcare workforce and collaboratively indicated the most important actions. The leading priority actions were integration of IT into Curriculum, continuous IT/eHealth training at the work place, raising awareness of IT competences, participatory decisions for actions, match healthcare applications to users' own context, inclusion of professionals in the development of eHealth projects. Interestingly, the proposed actions coupling the outcomes of another study following a different methodology, but also support the cooperation opportunities on IT skills for healthcare workforce. The latter formed a set of recommendations which were proposed within the CAMEI coordination and support action of EC-FP7.

IT skills, eHealth skills, healthcare workforce, eHealth competences

Introduction

Technology increasingly penetrates in our everyday life. Healthcare systems are taking advantage of the information and communication technologies in order to improve healthcare services and cut down economical costs. While different types of technology are being adopted into the healthcare systems, the healthcare workforce has to learn to work with each of them. However, the healthcare workforce needs to foster their eHealth competencies in order to continue the provision of the best possible care [1].

There are a few initiatives trying to boost the eHealth knowledge of healthcare workforce. The EU and the US through “Memorandum of Understanding between EU and US” [2] and the “Transatlantic eHealth/health IT Cooperation Roadmap” [3] set as a priority to enhance the IT competencies of the healthcare workforce, while AHIMA

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and AMIA focused to health informaticians or to competences related to EHR [4]. The IMIA working group proposed recommendations on Education in Biomedical and Health Informatics setting the scene [5], in which a survey was based, aiming to define primary roles in health informatics for nurses [6].

The CAMEI (www.camei-project.eu) FP7 coordination action [7] aimed, among other objectives, to record strengths, weaknesses and competencies of the means that the healthcare workforce acquires IT skills in the EU and USA. An analysis [8] of the EU-USA cooperation opportunities on IT skills for healthcare Workforce revealed a great exploitation potential for training healthcare workforce mainly along three areas: technology standards; strategic R&D; and educational activities. Further to this a recent study [9] proposed a list of prioritised actions to improve the EU healthcare workforce IT skills and competences, by asking the participants to evaluate the actions according to 4 criteria: feasibility, effectiveness, deliverability, and maximum impact on IT skills improvement. In this paper, further support is provided by a piece of active research carried out within a hands-on workshop in an international conference, namely, the 2nd International conference on Medical Education Informatics (MEI2015).

1. Methodology

Within MEI2015, the CAMEI project organised a workshop in order to identify the actions needed in order to boost the acquisition of IT competences by the healthcare workforce. The participants at the beginning of the workshop were provided by a one slide presentation on the CAMEI action taken between EU-US to enhance the IT competencies of the healthcare workforce [10]. Then the thirty (30) participants were divided into five (5) groups. Each group was provided with a board, pens and sticky notes. Firstly, each participant asked to write one action needed in order to empower digital competences in the healthcare workforce per note, and stick it to the group board. In each note the participant had also to write her working title. There was no restriction on the number of actions that each participant could write. Five (5) facilitators were in the room providing explanations where needed. The duration of this stage was about twenty (20) mins. Then each group was asked to discuss the recorded actions and signpost the most important for them as a group. This action took about five (5) mins. Each group then was asked to present their ideas to the other groups and a discussion took place on challenges and cooperation willingness and opportunities.

2. Results

The top priorities/actions per group and professions engaged are presented in table 1.

Table 1. Top actions to empower digital competences in the Healthcare Workforce

Group 1	Profession
<ul style="list-style-type: none"> • Include all groups (Education, Clinical, IT,...) in the decision making process and do the groups and their opinion visible • Sharing Information is most important. If you don't tell anybody about what you are doing nobody will use your offers and you won't get funding • IT solutions should be friendly and consider my "own" context • Include Pedagogy, IT and Content together in the project 	<ul style="list-style-type: none"> • eLearning Developer • Hospital Manager • Communication officer • Nurse • Project Coordinator

Group 2	Profession
<ul style="list-style-type: none"> • To inform the healthcare workforce what is ICT and why they need it • Validation of the aim of an eHealth initiative – are they valuable? Then we can raise awareness of ICT. • Increase of the connection between perspective and learning approaches • Find out what they want to fund(include knowledge - Team up with “friends” with proven track record in delivering work – Methodological / vision novelty 	<ul style="list-style-type: none"> • Engineer • Healthcare Educator • Researcher • Head of eLearning unit
Group 3	Profession
<ul style="list-style-type: none"> • To create workplace oriented IT environment – to make work easier • Prepare IT Educational facilities for patient • Better infrastructure • Workshops and training • Integration IT in Curriculum – Local Evidence in Hospitals • Recognition of IT specialist importance in healthcare profession 	<ul style="list-style-type: none"> • Medical Teacher • Family carer • health care professional • Researcher
Group 4	Profession
<ul style="list-style-type: none"> • Met-design of IT tools in Healthcare – Better Systems – Educating professionals through the development process – Test systems before realise them in the real world • Teach/train IT skills to staff (Nursing, Doctors, Pharmacist, etc.) when they are students)- The earlier the better • Collect data, create databases • Prepare Students before getting into work- then continue with CPD • Prepare relative (to the basic preparedness) to circumstance(student -> professional) course in IT skills(context medicine) 	<ul style="list-style-type: none"> • Developer, • Health Informatician • Project Manager • Learning technologist • IT technician
Group 5	Profession
<ul style="list-style-type: none"> • Define the competencies and the process that they can acquire • Define pedagogical models to train the staff • Improve the current programmes in terms of management and introduce new course • Include IT Education in Medical programmes syllabus • Well defined and distribution of resources – Sharing-> use of known standards – pedagogically models • Improvement of Health care Management – Medical staff Education – Better IT solutions • The year around training of the personnel in IT matters 	<ul style="list-style-type: none"> • Medical Doctor • Nurse • Health Informaticians • Academics

3. Discussion and conclusion

All the groups included a variety of participants including a good mix of policy makers, physicians, nurses, academics, health informaticians and other stakeholders leading to the belief that their opinions were representative of the envisaged aim. It is also notable that the composition of the different groups, played an important role in the prioritised actions need to be taken in order to empower digital competences in the Healthcare Workforce. Thus, Group 1 had a more managerial approach, giving emphasis to participatory decisions for actions, by sharing information of individuals and fit the healthcare applications to users own context. Group 2 had a more educational approach by raising awareness of the healthcare workforce on the need of IT competences and enhancing the links between perspective and learning approaches. Emphasis on the integration of IT into Curriculum, but also providing continuous IT training at the work place was central to Group 3, 4 and 5. According to group 3 and 5 views the workplace should be enhanced by better IT infrastructures. The Group 4 having a strong technological background element also suggested the education of the professionals

through the development process, while group 5 signpost also the need of the pedagogical models suitable for existing staff and the need to define the actual competencies for the training. The suggested actions coupling the priorities identified in [9] following the Child Health and Nutrition Research Initiative methodology for priority-setting: appropriate training; integrating eHealth in curricula; involving healthcare workforce in the eHealth solution development; improving awareness of eHealth, and learning arrangement.

Some of the actions were heading towards collaboration opportunities, as expected, since that was also an aim of this activity, enabling participants to create clusters and identify potential streams of funding. The suggested actions back up some of the cooperation opportunities on IT skills for healthcare workforce proposed in CAMEI [8]: develop a regularly updated joint IT skills registry for healthcare workforce, develop a common approach for certification of IT skills for healthcare workforce, Open and Flexible Education models and initiatives, harmonize the regulatory guidelines for how IT skills programmes are financed. It is already evident from this work that further coordination and implementation of the proposed actions to empower digital competences in the Healthcare Workforce are needed indeed.

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