THE UNIVERSITY OF

WARWICK

Original citation:
Lim Choi Keung, Sarah Niukyun, Ola, Bolanle, Davies, D. A. (David A.), Rowland, Martin and Arvanitis, Theodoros N. (2015) West Midlands health informatics network : a perspective on education and training needs. In: 13th annual International Conference on Informatics, Management, and Technology in Healthcare (ICIMTH 2015), Athens, Greece, 9-11 July 2015. Published in: Studies in Health Technology and Informatics, Volume 213 pp. 103-106.

Permanent WRAP url:
http://wrap.warwick.ac.uk/70276

A note on versions:
The version presented here may differ from the published version or, version of record, if you wish to cite this item you are advised to consult the publisher's version. Please see the 'permanent WRAP url' above for details on accessing the published version and note that access may require a subscription.

For more information, please contact the WRAP Team at: publications@warwick.ac.uk

warwick**publications**wrap

highlight your research

http://wrap.warwick.ac.uk

West Midlands Health Informatics Network: A Perspective on Education and Training Needs

Sarah N. LIM CHOI KEUNG[a,1], Bolanle OLA[a], David DAVIES[a,b],
Martin ROWLAND[a], and Theodoros N. ARVANITIS[a]

[a] *Institute of Digital Healthcare, WMG*
[b] *Health Sciences Division, Warwick Medical School*
University of Warwick, Coventry, United Kingdom

Abstract. The growth of health informatics as a discipline has led to an increase in networks of people with similar interests for discussion, learning and sharing. Alongside these community networks, education and training are gaining interest, with more career opportunities and general public seeking information. This paper highlights the experience of the West Midlands Health Informatics Network and efforts in better understanding the educational and training needs of its members. The findings from the survey conducted reveal that while the interest in this field is high among network members, the awareness of opportunities for training and learning professionally as well as personally, remains low. The areas and levels of interest in the region should help support the creation and availability of resources.

Keywords. Community Network, Health Informatics, Education.

1. Introduction

Health informatics is one of the fastest growing areas within the healthcare industry. This is reflected in the increase in interest, innovations and research, as well as careers in this sector. Community networks have also started to be formed, bringing together people with common interests. Examples of such networks include NHS Networks in the United Kingdom [1], a free resource for people working in the National Health Service (NHS) and social care, with over 900 virtual communities around common topics of interest. Likewise, the demand for well-trained health informatics specialists with the right set of skills, knowledge, attitude, values and capacities is also increasing. Health informatics education is important because storage, retrieval and organisation of existing and new information will become almost impossible without using new information technologies and methodologies [2][3].

In the West Midlands region of the UK, the growing interest in health informatics among academics, clinicians and industry has resulted in the creation of the West Midlands Health Informatics Network (WIN) [4]. With education being part of the network's remit, one of the motivations of WIN was to better understand the educational and training opportunities in the region, as well as the needs of the

---

[1] Corresponding Author. E-mail: S.N.Lim-Choi-Keung@warwick.ac.uk

stakeholder groups. This paper outlines how this piece of work was undertaken, with highlights on some of the findings and future considerations.

1.1. West Midlands Health Informatics Network

WIN is a network for people mainly in the region who are professionally or personally interested or involved in the research, design, development and implementation of healthcare technologies for a greater impact on health and healthcare. Members are from the public sector; private, voluntary or independent sector; academia; and patients and their representatives. All are passionate about health service improvement, education and research in the health informatics domain. WIN was set up in 2013, and membership was formally opened to individuals in January 2014. With over 500 members, the network has a good representation from the main stakeholder groups.

The network's aim is to support the NHS and affiliated healthcare organisations in adopting information technology solutions to transform the care they provide for their patients. In order to improve outcomes for patients and citizens, WIN encourages and supports collaborative work among stakeholders; discusses and disseminates evidence-based practice; promotes projects and research in health informatics; supports the development of educational material and courses; and promotes the adoption of digital healthcare solutions. Through its website, virtual forum as well as face-to-face events, WIN shares good practice and encourages collaboration.

2. Methods

In order to assess the health informatics educational and training needs in the region, the following three tasks were conducted: (i) a search of courses and training offered regionally, (ii) a literature search of existing competency or career frameworks in health informatics, which would form the basis of skills needed for learning outcomes, and (iii) consultation of WIN members and key contacts about their views.

2.1. Courses and Training

A search of health informatics courses was carried out for all universities in the West Midlands using their websites. Both traditionally taught and online courses were considered. Where possible, course coordinators were directly contacted to get more information about the learning outcomes of the courses.

2.2. Competency Frameworks

According to Friedman [5], the nature of informatics is thoroughly articulated through defining a set of competencies, which are specifications of knowledge and skills, and application of that knowledge and skills, to the standard of performance expected in the workplace. Health informatics is considered as the core set of information methods, theories and tools that are relevant to healthcare, biomedical research and public health. Competency frameworks available in the UK and internationally have been considered.

2.3. Survey

The survey aimed at assessing the educational needs of health informatics in the region. An online questionnaire was developed and with nine questions, covering topics of health informatics usage; awareness of educational and training opportunities; and priority areas for innovation. The sample size was the 419 registered network members.

3. Results

3.1. Courses and Training

The search for courses related to health informatics in the West Midlands found 3 out of 10 universities offering such courses, namely Keele University, Staffordshire University and the University of Birmingham. Staffordshire University runs a Masters of Science degree (distance learning) and a Postgraduate Certificate in Public Health informatics (on site). Keele University runs a Masters of Science degree and standalone courses in health informatics and application of informatics IT in a clinical setting. The University of Birmingham runs a course in health information and health informatics as part of its Masters in Public Health and as a standalone course. Most of the health informatics courses in the West Midlands are aimed at practitioners in public health. Other online courses available in the UK are offered by the Health and Social Care Information Centre[2], Royal College of Nursing[3], and private companies, such as Health Information Consulting Ltd.[4], Avoca Systems[5] and ADR Consultancy[6].

3.2. Competency Frameworks

Competency frameworks have been developed in different countries. These include the core competencies in the USA [6]; recommendations by the International Medical Informatics Association [2]; Canada [7]; Australia [8]; and the Health Informatics Career Framework (HICF) in England, UK [9]. The HIFC was used because of its relevance in the NHS. The framework allowed us to identify gaps in the learning outcomes of courses offered in West Midlands' universities and UK e-learning courses. The framework not only applies to individuals providing services to the NHS and other health and care organizations, but also to those whose roles cut across multiple areas.

3.3. Survey

During a three-week period in Dec 2014 - Jan 2015, 19 responses were received (5% response rate). From the survey, the most use of health informatics was in the area of its contribution to good medical and health knowledge in terms of data analysis and health reporting. There was a general lack of knowledge about health informatics educational and training opportunities in the region amongst respondents, with only a

---

[2] http://www.eiceresources.org; http://www.e-lfh.org.uk/programmes/health-informatics/
[3] http://www.rcn.org.uk/development/practice/e-health/education__and__training
[4] http://www.health-informatics.co/
[5] http://www.avoca.systems/sql-for-healthcare-training
[6] http://www.cisucq.com/

few being aware of available courses. In terms of the highest priorities in health informatics training, respondents wanted more understanding in technologies, including database queries using SQL and web development. Over the next ten years, respondents would like to see more innovation in terms of better systems and fully integrated electronic health records across organizations; more interoperability and use of telehealth, paperless records, and access to real time data.

4. Discussion and Conclusions

In this paper, we introduced WIN as a community network for health informatics, with the aim of assessing the awareness and needs for education and training in this area. While the interest among members is high, the awareness of training opportunities professionally, or otherwise, was low. There are few university courses offered in the region, although these did not map fully to the competency frameworks available.

The survey of WIN members on the topic has given us a better idea on the areas where training is felt to be needed, for ICT staff, analysts, health professionals, managers and the general public. While the response rate of 5% was low, this is in line with the <10% response rates of postal and online questionnaires [10]. The relatively short time the survey was open and open-ended questions could have contributed to the low response rate. These questions were necessary as a start to the assessment of training needs for stakeholder groups. These findings, together with the necessary competencies at different levels, should guide future training offerings in order to fulfil the gaps in skills for health informatics to be more efficiently used to support healthcare. In future work, we will be looking at more participants from a wider range of professions, students and the general public, with in-depth interviews to obtain further insights into education needs.

References

[1] NHS Networks. Available: https://www.networks.nhs.uk/
[2] J. Mantas *et al.*, Recommendations of the International Medical Informatics Association (IMIA) on Education in Biomedical and Health Informatics, *Eur. J. Biomed. Inform.*, 7(2), pp. en3–e18, 2011.
[3] A. Kushniruk, The HIP Competency Framework: Applications to Improve Health Informatics Education and Professionalism in Canada and Internationally, *Healthc. Inf. Manag. Commun.*, 24(4), pp. 28–29, Dec. 2010.
[4] West Midlands Health Informatics Network. Available: http://wmhin.org/.
[5] C. P. Friedman, What informatics is and isn't, *J. Am. Med. Inform. Assoc. JAMIA*, 20(2), pp. 224–226, Apr. 2013.
[6] C. A. Kulikowski *et al.*, AMIA Board white paper: definition of biomedical informatics and specification of core competencies for graduate education in the discipline, *J. Am. Med. Inform. Assoc. JAMIA*, 19(6), pp. 931–938, Dec. 2012.
[7] COACH, Health Informatics Professional Core Competencies, Nov-2012. Available: https://www.coachorg.com/en/resourcecentre/resources/Health-Informatics-Core-Competencies.pdf.
[8] Certified Health Informatician Australasia, Health Informatics Competencies Framework, Dec-2013. Available: http://www.healthinformaticscertification.com/CHIA-competencies-Framework_FINAL.pdf.
[9] NHS, Health Informatics Career Framework. Available: https://www.hicf.org.uk/.
[10] P. Newby, *Research Methods for Education*, Second Ed. Routledge, Taylor & Francis Group, 2014.