



WG22 – Technology Assessment & Quality Development in Health Informatics (TAQD)

2018 Report - July 2017 to June 2018
presented in Colombo, Sri Lanka for:

- IMIA Board Meeting, October 8, 2018,
- IMIA General Assembly Meeting, October 9, 2018

Co-Chairs (2016-2019)

Professor Andrew Georgiou
Centre for Health Systems & Safety
Research
Australian Institute of Health Innovation
Macquarie University
Australia
Email: andrew.georgiou@mq.edu.au

Associate Professor Farah Magrabi
Centre for Health Informatics
Australian Institute of Health Innovation
Macquarie University
Australia
Email: farah.magrabi@mq.edu.au

Webpage for WG: <https://imia-medinfo.org/wp/wearable-sensors-in-healthcare/>

Website of the WG: (shared with/hosted by the EFMI WG Evaluation) on <http://iig.uit.at/efmi/>

Working group members:

Elske Ammenwerth Director of the Institute for Health Information Systems, University for Health Sciences, Medical Informatics and Technology, Hall in Tyrol, Austria.

Jytte Brender Emeritus Associate Professor, Aalborg University, Denmark.

Nicolette de Keizer Professor, Department of Medical Informatics, Academic Medical Center, Amsterdam, The Netherlands

Andrew Georgiou Professor, Centre for Health Systems & Safety Research, Australian Institute of Health Innovation, Macquarie University Australia

Hannele Hyppönen Research Manager, National Institute for Health and Welfare, Finland

Farah Magrabi Associate Professor, Centre for Health Informatics, Australian Institute of Health Innovation, Macquarie University Australia

Pirkko Nykänen Professor University of Tampere, School of Information Sciences Center for Information and Systems, University of Tampere

Michael Rigby Emeritus Professor of Health Information Strategy, Keele University, United Kingdom

Philip Scott Senior Lecturer in Information Systems, Centre for Healthcare Modelling & Informatics, University of Portsmouth, United Kingdom.

Synopsis of Working Group report

This report from the IMIA WG on Technology Assessment and Quality Development describes the WG's record of **international collaboration** in the areas of education, performance management, evidence-based health informatics and safety and quality.

These activities **reinforce important developments in the WG's networks and participation** including with: IMIA working groups (e.g., European Federation of Medical Informatics Working Groups) and regional members of IMIA (e.g., Asia Pacific Association of Medical Informatics and the American Medical Informatics Association). Key areas of success outlined in this report include: i) the publication of a book with IOS Press on *Evidence-Based Health Informatics* (edited by Ammenwerth E and Rigby M) as part of **a major international collaboration involving leading evidence-based health informatics researchers, practitioners and IMIA, EFMI and AMIA working groups**; and ii) the preparation of a position paper to the IMIA Yearbook on improving evaluation to address the unintended consequences of health information technology.

Brief Background

The strategic **mission** of the working group is:

- To promote the necessity of a systematic evaluation of health information systems during their whole life cycle as a precondition for the better support of patient care.
- To promote theory and practice of evaluation of health information systems, taking into account approaches from a variety of scientific fields.
- To develop and promote methods and tools to support the systematic evaluation of the effects of health information systems on structure, process and outcome of patient care, and to give feedback to system builders how to alter their systems to improve effectiveness and to avoid negative effects.

We are convinced that the evaluation of health information systems is essential to ensure safe and effective health information systems, and demands a combined, multi-disciplinary (or even trans-disciplinary) as well as multi-method approach. Therefore, the **aims** of the Working Group (WG) are:

- to foster discussion between experts from informatics, medical informatics, economics, health care, health services research, clinical epidemiology, biometry, psychology, sociology, ethnography, organizational development, operations research and other evaluation fields, on an international level, and to encourage exchange on methodological issues between researchers from different traditions;
- to offer an opportunity to share knowledge with the aim of obtaining profitable cross-fertilization among different fields of expertise and especially between quantitative and qualitative research;
- to promote a combined research agenda to develop frameworks and toolkits for information systems evaluation, offering guidelines for an adequate combination of evaluation methods and tools;

- to discuss and clarify the networking needs for long-term evaluation research in medical informatics, and to promote combined research proposals at an international level.
- to raise awareness that health IT systems are not automatically safe or optimal, and indeed can engender risks, and therefore evaluation is an essential activity to protect patient safety and stimulate optimisation.
- to seek to engender and instill a culture of evidence-based health informatics and IT policy and implementation as an ethical essential.

Achievement - Events and projects conducted and publications completed

- The IMIA WG undertook a significant working consultation and collaboration to submit the following contribution to the IMIA Yearbook:

Georgiou A, Magrabi F, Hypponen H, Wong ZS, Nykänen P, Scott PJ, Ammenwerth E, Rigby M. The Safe and Effective Use of Shared Data Underpinned by Stakeholder Engagement and Evaluation Practice. A Position Paper from the IMIA Technology Assessment & Quality Development in Health Informatics Working Group. Yearbook of medical informatics. 2017;26(1):59-67.

- Working group members collaborated to write a review paper about the challenges of research replication in Health Informatics. The paper points to a number of foundational health informatics issues and possible replication approaches which could shape future directions of the WG and its work.

Coiera E, Ammenwerth E, Georgiou A, Magrabi F. Does health informatics have a replication crisis? Journal of the American Medical Informatics Association. Volume 25, Issue 8, 1 August 2018, Pages 963–968.

- Working group members were involved in the following papers and workshops at **MIE 2018 (Gothenburg, Sweden):**

Deshpande S, Rigby MJ, Blair M. The Presence of eHealth Support for Childhood Obesity Guidance. Stud Health Technol Inform. 2018;247:945-949. PMID: 29678100

Rigby M, Kühne G, Greenfield R, Majeed A, Blair ME. Extent of Use of Electronic Records in Children's Primary Care and Public Health in Europe. Stud Health Technol Inform. 2018;247:930-934. PMID: 29678097

Liyanage H, Shinneman S, Hoang U, Ferreira F, Alexander D, Rigby M, Blair M, de Lusignan S. Profiling Databases to Facilitate Comparison of Child Health Systems Across Europe Using Standardised Quality Markers. Stud Health Technol Inform. 2018;247:61-65. PMID: 29677923

- Dr Rigby co-convened a workshop with the HL7 Foundation and its Trillium project.

Catherine Chronaki, Michael Rigby, Frederic Ehrler, Rianne Oostenbrink, Simon de Luisignan, Dipak Kalraf, Tarik Derrouh. Patient summaries in Paediatric Emergencies: Policy, Standards, Prospects.

- WG members presented the following posters:
 - Michael Rigby, Grit Kühne, Rama Greenfield, Azeem Majeed and Mitch E. Blair.

Children's EHRs in Europe – Need for Development of International Standards on Data Sets and Functionality

- Michael Rigby, Rama Greenfield, Grit Kühne, Azeem Majeed and Mitch E. Blair. Variation of National Policies on Controlled Sharing with Partner Services of Children's Primary Care Data.

- Working group members were involved in the following papers:

Nykänen P, Implementation and evaluation of ehealth ecosystems in two-sided markets. In: Vimarlund V (ed.), eHealth two-sided markets, implementation and business models. Elsevier Academic Press, 2017, 125-142

Scott, P. J., Dunscombe, R., Evans, D., Mukherjee, M., & Wyatt, J. C. (2018). Learning health systems need to bridge the 'two cultures of clinical informatics and data science. *Journal of Innovation in Health Informatics*, 25(2), 126-131.

de Lusignan, S., Liyanage, H., & Scott, P. (2018). Computerised medical record systems that guide and protect—reflections on the Bawa-Garba case. *Journal of innovation in health informatics*, 25(1), 058-059.

Participation

- WG members Dr Scott along with Professors Georgiou and de Keizer are editing a Health informatics theory book whose current proposed title is “Applied interdisciplinary theory in health informatics: a knowledge base for practitioners”. The plan is to launch the book at Lyon in 2019.
- WG member Prof Georgiou is contributing to the Royal College of Pathologists of Australia, Pathology Information, Terminology and Units Standardisation (PITUS) program, which will make a major international contribution to the improvements in the recording, decision support, communication and analysis of pathology laboratory reports.
- Dr Scott will be discussing areas of possible collaboration with Siaw Teng-Liaw (Co-founder of the WHO Collaborating Centre on e-Health).
- WG member Dr Hyppönen is leading the Nordic eHealth research network under the Nordic Council of Ministers, collaborating with the OECD and WHO in developing and testing eHealth indicators.
- Members of the Working Group in association with several IMIA WGs contributed to the organization of the Context Sensitive Health Informatics satellite conference at MedInfo 2017 in Hong Kong.
- The working group continues its close collaboration with the EFMI Working Group on Evaluation, through joint publications, webinars, workshops and tutorials at international conferences. The working group also started to discuss closer collaboration with the AMIA Working Group on Evaluation.
- WG member Dr Scott spoke (with Prof Harold Thimbleby from Swansea University) at the Health + Care trade show in London on 28 June 2018 on the topic “Why digital health is not based on evidence?”.
- WG member Dr Scott presented a session at the Digital Health CIO Summer School on the

topic “Innovation or Evidence? Why can’t we have both?”, co- presented with Prof Niels Peek, University of Manchester, and Asst Prof Mark Sujan, Warwick Medical School.

- WG member Dr Scott co-chaired the International Healthcare Interoperability Conference 2018, held at the University of Portsmouth, UK, on 11-12 July.
- The WG welcomed Dr Wong to help improve our collaborations in the Asia- Pacific region. Through Dr Wong’s research experience in Hong Kong (China), Japan, and Australia, she can provide valuable networks with cross-disciplinary expertise interfacing between engineering, statistics and public health areas across the region. Dr Wong has expertise in health data analytics, providing new solutions using EHR and big data, and converting research into practical public health outcomes. Currently she is actively engaged in teaching Japanese and international master students (mostly from the Asia-Pacific region and public health working professionals) in advancing next-generation health informatics education.
- WG member Dr Wong organised an invited session under Healthcare Applications topic at INFORMS International 2018 at Taipei, which is one of the major international conferences for the research community focused on Operation Research, Analytics and AI. At this conference she chaired the public health informatics sessions.

Outreach

- During 2017-2018 the WG continued to expand its network and the scope of its work. In the course of this year the WG has established strong connections with the **Australian College of Health Informatics**, the **Indian Association of Medical Informatics** and **Asia Pacific Association of Medical Informatics**.

Collaboration

- The working group continues its close collaboration with the **EFMI Working Group on Evaluation**, through joint publications, webinars, workshops and tutorials at international conferences. The working group also started to discuss closer collaboration with the **AMIA Working Group on Evaluation**.
- The working group has maintained a strong level of collaboration with the **AMIA Evaluation Working Group**, as evidenced by collaborative efforts.

Working Group meetings (minuted teleconferences)

24 July 2017

5 October 2017

16 April 2018