



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

2019 Report - June 2018 to June 2019

presented in Lyon, France for:

- **IMIA Board Meeting, August 25, 2019,**
- **IMIA General Assembly Meeting, August 26, 2019**

Chair (2014-2019)

Andrew Georgiou

Centre for Health Systems & Safety Research

Australian Institute of Health Innovation

Macquarie University

Macquarie, Australia

Email: andrew.georgiou@mq.edu.au

Vice-Chair (2014-2019)

Farah Magrabi

Centre for Health Informatics

Australian Institute of Health Innovation

Macquarie University

Macquarie, Australia

Email: farah.magrabi@mq.edu.au

Website for WG: <https://imia-medinfo.org/wp/technology-assessment-quality-development-in-health-informatics/> & <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.

Zoie Shui-Yee Wong Associate Professor, Graduate School of Public Health, St. Luke's International University, OMURA Susumu & Mieko Memorial St. Luke's Center for Clinical Academia, Japan

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., Primary Health Care Working Group), the European Federation of Medical Informatics Working Group on Evaluation 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) preparation of a book with IOS Press on ***Applied interdisciplinary theory in health informatics: a knowledge base for practitioners*** (edited by Dr Philip Scott, Professor Nicolette de Keizer and Professor Andrew Georgiou) as part of **a major international collaboration involving leading health informatics researchers and practitioners from IMIA, EFMI and AMIA working groups**; ii) the preparation of a position paper to the IMIA Yearbook the challenges for evaluation of AI and practical implications; and iii) a high level contribution (led by **Emeritus Professor Michael Rigby**) to the public consultation on the World Health Organization's "**Draft Global Strategy on Digital Health**" (April 2019)

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.
- To promote the use of an evidence-based approach as the only safe and ethical approach for implementing and promoting health informatic systems.

We are convinced that the evaluation of health information systems is essential to produce valid evidence 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 instil a culture of evidence-based health informatics and IT policy and implementation as an ethical essential.
- to engage with decision- and policy-making processes

Achievements - Events and projects conducted and publications completed

- The IMIA WG undertook a working consultation and collaboration to submit the following contribution to the IMIA Yearbook: Magrabi F, Ammenwerth E, Brender McNair J, de Keizer N, Hyppönen H, Nykänen, Rigby M, Scott PJ, Vehko T, Shui-Yee Wong, Z, **Georgiou A**. Artificial intelligence in clinical decision support: challenges for evaluation of AI and practical implications. A position paper from the IMIA Technology Assessment & Quality Development in Health Informatics Working Group and EFMI Working Group for Assessment of Health Information Systems. *IMIA Yearbook of Medical Informatics*; 2019: doi: 10.1055/s-0039-1677903.
- Working group members collaborated to write a seminal 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 collaborated to produce a groundbreaking review of measurement practice in health informatics. **Scott PJ**, Brown AW, Adedeji T, Wyatt JC, **Georgiou A**, Eisenstein EL, Friedman CP. A review of measurement practice in studies of clinical decision support systems 1998 – 2017. *Journal of the American Medical Informatics Association* (Accepted 6 March 2019)
- Preparation of a book with IOS Press on ***Applied interdisciplinary theory in health informatics: a knowledge base for practitioners*** (edited by Dr Philip Scott, Professor Nicolette de Keizer and Professor Andrew Georgiou) with a chapter contributed by Professor Elske Ammenwerth, as part of a major international collaboration involving

leading health informatics researchers and practitioners from IMIA and EFMI working groups.

- The Working Group (**Zoie Shui-Yee Wong, Andrew Georgiou and Elske Ammenwerth**) have established a collaboration with the International Medical Informatics Association Working Groups on Primary Health Care (PHC) and European Federation of Medical Informatics WG on Evaluation to issue a call for a special issue of the International Journal of Medical Informatics on “Evaluating integrated primary care informatics”.
- The Working Group made a high level contribution (led by **Emeritus Professor Michael Rigby**) to the public consultation on the World Health Organization’s “**Draft Global Strategy on Digital Health**” (April 2019)

Participation

- WG members Dr Philip Scott along with Professors Nicolet de Keizer and Andrew Georgiou are editing a Health informatics theory book whose current proposed title is “Applied interdisciplinary theory in health informatics: a knowledge base for practitioners”. The book will be launched at Medinfo 2019 in Lyon in August, and will be featured at a panel discussion featuring key contributors to the book: “Celebrating the value of applied theory in health informatics: how can we broaden appreciation and further advance the field?” Medinfo 2019, Lyon, France. The book will also feature at a plenary session at the Context Sensitive Health Informatics conference in Lille, France (August 2019)
- 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 have contributed to the planning and organisation of the Context Sensitive Health Informatics satellite conference at Medinfo 2019 in Lille, France.
- WG member Dr Scott co-chaired the International Healthcare Interoperability Conference 2018, held at the University of Portsmouth, UK, on 11-12 July.
- WG member Professor Nicolet de Keizer co-chaired the 4th International Symposium on Advancing the Science and Impact of Audit & Feedback, held at Mercure hotel Amsterdam, the Netherlands on 23-24 May.

Outreach

- The Working Group (Philip Scott, Farah Magrabi, Andrew Georgiou) has established a working collaboration with **Professor Siaw Teng-Liaw** (Co-founder and Director of the WHO Collaborating Centre on e-Health) to promote the development of health informatics research and evaluation internationally.
- During 2017-2019 the WG attempted to expand its network and the scope of its work. In the course of this year the WG has established connections with the **Australian College of Health Informatics**, the **Indian Association of Medical Informatics** and **Asia Pacific Association of Medical Informatics and Health Informatics New Zealand**.
- Professor Andrew Georgiou has established connections with leading aged care informatics researchers **Professor Heiko Gewalt (Germany)** and **Professor Gregory Alexander (USA)** regarding the establishment of strategic perspectives related to the global development of **Aged Care Information Technology**. This collaboration will be

featured in a presentation at **Medinfo 2019** - "International Perspectives on Information Management in e-Networks During Care of Older Adults".

Recruitment

- The WG has initiated a series of discussions (leading to a plenary WG meeting at Medinfo in Lyon 2019) to: strategically focus on a formal strategy and work program for the next three to five years. The WG aims to expand membership to the Americas, Africa and the Middle East. This strategic discussion will also focus on the establishment of robust and meaningful collaborations and the building of links with the health informatics communities of low and middle income countries.

Current number of members: 10

Working Group meetings (teleconferences)

27 September 2018

2 May 2019

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. In the coming period the WGs will discuss the establishment of a memorandum of understanding as a means to formalise the relationship and the governance of each WGs respective activities.
- The working group has maintained a strong level of collaboration with the **AMIA Evaluation Working Group**, as evidenced by continuing collaborative efforts.
- The Working Group have established a collaboration with the **International Medical Informatics Association Working Groups on Primary Health Care (PHC) and European Federation of Medical Informatics WG on Evaluation** to issue a call for a special issue of the International Journal of Medical Informatics on "Evaluating integrated primary care informatics" <https://www.journals.elsevier.com/international-journal-of-medical-informatics/call-for-papers/evaluating-integrated-primary-care-informatics>
- The Working Group has established connections with leading aged care informatics researchers which will be featured in a presentation at Medinfo - "International Perspectives on Information Management in e-Networks During Care of Older Adults".