RESEARCH PRIORITY AREAS 2019-2022

Health Information Management Association Australia

A Strategic Asset

The HIMAA Board of Directors ratified this document in June 2019.

Chief Executive Officer
Health Information Management Association of Australia
ceo@himaa.org.au

Acknowledgement
The Health Information Management Association of Australia wishes to acknowledge this body of work was undertaken by the HIMAA Research Advisory Committee and in particular the following individuals:
A/Professor Kerryn Butler-Henderson (Chair)
Dr Mary Lam (Deputy Chair)
Vicki Bennett (past Chair)
Dr Anupama Ginige
Gavin Lackey
Gowri Sriraman
Tanija Taraby

The Health Information Management Association of Australia (HIMAA) first incorporated research into its strategic plan in 2014, identifying the need to promote Health Information Management (HIM) professionals undertaking research and the body of knowledge developed as a result of research undertaken in this field. The first task of the newly formed Research Working Group workplan was to establish the research priorities areas for HIMAA. A large analysis of the research trends in recent years was published, identifying key areas in contemporary HIM research (Research Advisory Committee 2018). The Working Group became a permanent committee of HIMAA as the Research Advisory Committee, reflecting HIMAA's ongoing commitment to research. This was reinforced by HIMAAs continued commitment to research in their 2017-2022 strategy.

Between 2017-2019, the Research Advisory Committee sought to establish the 2019-2022 HIMAA research priority areas. This was informed by the findings from the trends analysis, consultation with members of the Editorial Board of HIMAA's scholarly journal, and with various researchers and practitioners in this field. This information was consolidated during a workshop of the Research Advisory Committee into the three themes: *Systems and Technology*, *People* and *Processes*. The interplay between *Systems and Technology*, *People* and *Processes* (figure 1) is required for the day-to-day functioning and long-term sustainability of any organisation, including healthcare organisations of any size. Therefore, the research priorities related to health information management profession could be broadly categorised into these three areas. The following document discusses each of these areas and the research areas within each theme.

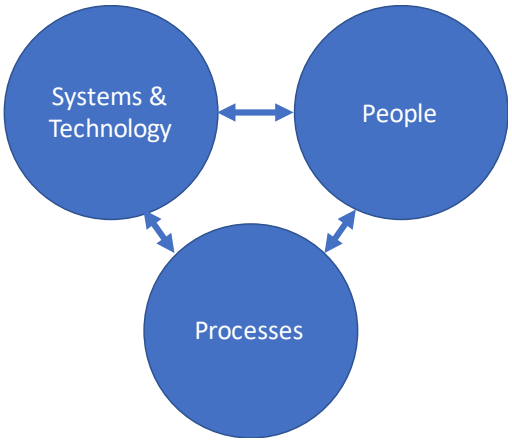

Figure 1: Interplay of HIMAA 2019-2022 Research Priority Areas

Systems and technology allow people to capture and process data to enable evidenced informed health care. Research into health outcomes, service delivery, and innovations are informed by systems and technology, categorised into four broad areas, as shown in Figure 2.

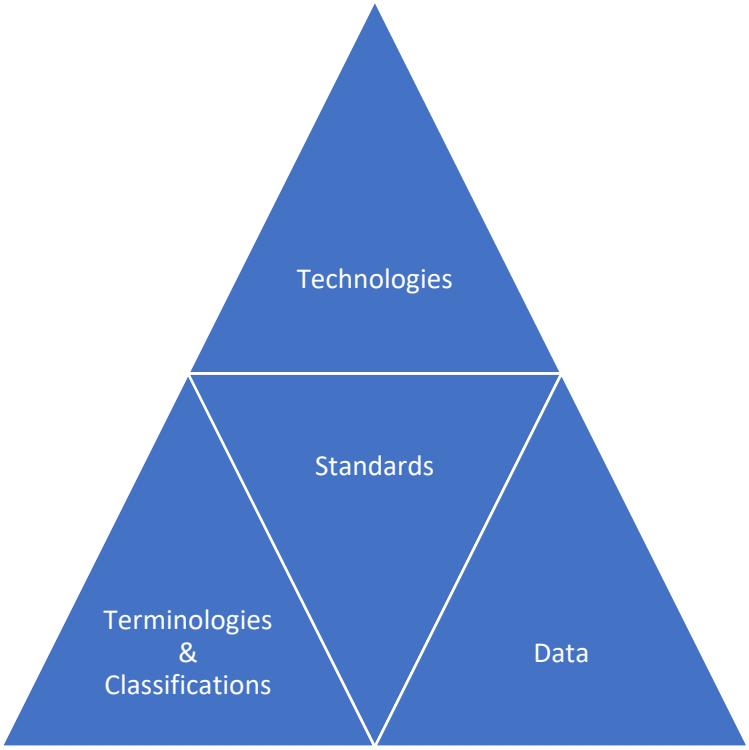

Figure 2: The Four Areas within Systems and Technology

1. Technologies

There are many types of technologies and systems that exists within the Health Care Sector. This includes MyHealth Record, electronic health records, Picture Archiving and Communication Systems, Computerised Physician Order Entry, clinical decision support systems and remote systems, such as telehealth and mobile health. This creates a wealth of information, which has management and regulation implications.

Research Priority
To examine the impact of new technologies on health data management and regulation.
To determine both the level of interaction between new and legacy systems, and the interoperability between different systems and platforms.
To evaluate the user interaction with technologies in health and impact on information quality.

Newer technologies are incorporating machine learning, artificial intelligence and natural language processing to enable automation by reducing the amount of user input required. With technological advancements such as wearables, tracking apps and devices and even the digital home, many consumers are collecting and using their health data. The resources and applications available need to be adaptable to users from many multicultural backgrounds and be suitable for all users along the digital spectrum.

Research Priority
To explore the extent of artificial intelligence within the health sector and determine directions for future development.
To evaluate the use, management and regulation of data collected through wearable technologies.

2. Terminologies and Classifications

There are many terminologies and classification systems maintained within health, utilised to standardise and classify data locally, nationally and internationally. Advances in technologies will drive the need to incorporate different terminologies into system design to enable the automation of the classification process. As these areas grow, it will impact data volume and quality, information regulation, workforce functions, and professional ethics.

Research Priority
To evaluate terminology and classification mapping in health.
To explore the impact of greater automation on data volume and quality, information regulation, workforce functions, and professional ethics.

3. Standards

Standards are used within health information to ensure that only appropriate data is collected, and that this data is maintained in a manner that is secure. The privacy and security of health data must always remain paramount. Standards in messaging, such as HL7 and FHIR, have been established to ensure privacy and security when data is transferred across networks.

Research Priority
To explore how advances in technology will change how privacy and security of health data is managed in health.

4. Data

Data lakes, which are repositories of data stored in its natural format, coexist with big data and data analytics. Data Science will allow the capture and analyse of data in its natural format. This is an emerging field that will require the knowledge and experience of health information managers, informaticians, technology developers and researchers to create the resources and systems needed.

Research Priority
To examine ways in which data lakes have been established in other industries and use lessons from this to guide the implementation of data lakes in health.

The People factors make a significant contribution to the functions of the healthcare system. These can be categorised into six broad areas, as shown in Figure xx.

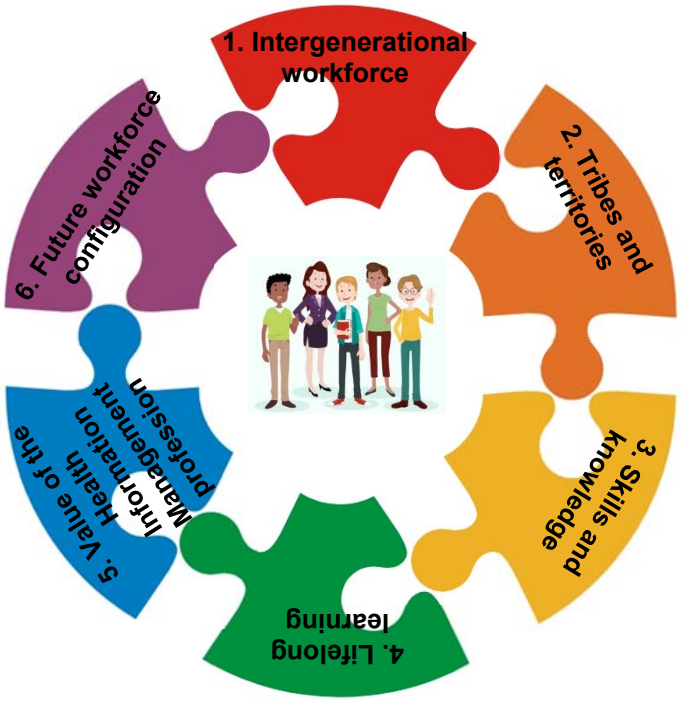

Figure 3: The Six Broad Areas of "People"

1. Intergenerational workforce

Australia's 2015 Intergenerational Report (Commonwealth of Australia 2015) predicts the change in the Australian population and the economic and workforce impacts as a result. It summarised:

1. The Australian population will continue to grow, with Australians living longer.
2. There will be a greater proportion of people aged over 65 years.
3. Older Australians will remain active for longer given improvements in health.
4. They will continue participating in the workforce and community for longer.
5. There will be less people in the traditional working age group 15-64 years.
6. There will be an increased demand for health services due to the increased proportion of people aged over 65 years.
7. However, the decrease in the number of people of traditional working age means the participation rate will decrease.
8. Due to the longer life expectancy, increased demand for health services, and decrease in participation rates, it is forecasted that people will remain in the workforce longer.

The above will result in an intergenerational workforce, with different workforce needs compared to today.

Research Priority
To examine the extent of intergenerational effect in the Health Information Management profession and explore the long-term impact on the workforce.

2. Tribes and territories

With the increase in automation and digitisation in the health information field, there has been a blurring of functions or territories across roles and even disciplines. This has several impacts on the Level 1 health information workforce, as defined by Health Workforce Australia (2013). This includes role substitution, role specialisation, loss of specialised disciplines, and increased tribalism as the scope of practice becomes more difficult to describe. The boundaries of the workforce have also expanded across healthcare settings and organisational types, and across geographical borders.

Research Priority
To examine the impact of technology on the Health Information Management profession, and in particular the evolution of tribes and territories within the greater health information workforce.

3. Skills and knowledge

Furthermore, the skills and knowledge of the workforce have evolved to meet healthcare reform, such as activity-based funding, value-based healthcare, and digital transformation. This includes a discipline's body of knowledge.

Research Priority
To empirically explore the transformation in the skills and knowledge of the Health Information Management profession.

The models of education and training delivery is also changing, with a drive towards shorter "bite size" learning opportunities and work integrated learning.

Research Priority
To explore the pedogeological needs of the Health Information Management profession.

4. Lifelong learning

One of the key elements of being a professional is the need for lifelong learning. Continuous development of professional competencies and capabilities ensures practitioners remain current in a transformational field.

Research Priority
To evaluate the continuous professional development needs of the Health Information Management profession.

5. Value of the Health Information Management profession

With the transformation in healthcare and in turn changes to the skills and knowledge, and the workforce composition of the Health Information Management profession, the value proposition of the profession has changed. Going forward, with changes to the healthcare funding system and

technological advances both creating opportunities (e.g. data science) and reshaping functions (e.g. automation), the value of the Health Information Management profession needs to be re-evaluated.

Research Priority
To evaluate the value of the Health Information Management profession.

6. Future workforce configuration

In addition to evaluating the body of knowledge for the Health Information Management profession, the future configuration, including career pathways, needs to be mapped.

Research Priority
To map the future configuration of the Health Information Management profession, including career pathways.

Processes within a healthcare organisation (or in any organisation) can be categorised into three parts as: **core, support** and **management processes** (Franken and Janssen 1998). This taxonomy of processes provides mechanism for categorisation of various activities carried out in a healthcare organisation. In this taxonomy, **core processes** categorise activities that are performed to attract revenue for an organisation. For example, in a day surgery clinical processes such as *preparing a patient and conducting an endoscopy procedure* would classify to be one of the core processes; because the outcome of these processes is billable, hence creates revenue for the organisation, either via direct payment by the patient or through re-imbursement. The **support processes** within an organisation would be other process that facilitates the core processes. These could include processes associated with *recruitment*, *accounting*, *documentation* and *records management*. While these processes would not bring in revenue to the organisation directly, these are essential in the running of the core processes. Thirdly, the **management processes** overlook the smooth operation of both core and support processes. For example, processes such as *strategic planning*, *auditing*, *performance review* and *quality control*, are performed to assure that both core and support processes are performing to the level it is required or follow required standards. The interaction between core, support and management processes is depicted in Figure 4 below.

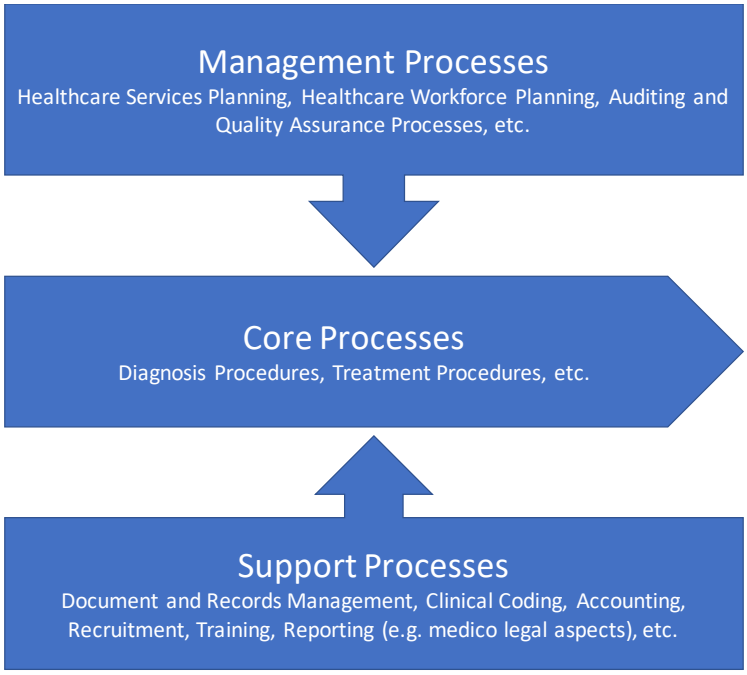

Figure 4: Core, Support and Management processes associated with a Healthcare Organisation

There are many forms of research that can be conducted in core, support and management processes in healthcare organisations. However, since the tasks that are performed by clinical coders and health information managers closely relate to support processes, more emphasis should be given to processes that are within this domain. These research activities can be categorised into five areas: process modelling, analysis, benchmarking, optimisation, and process automation (full or partial).

1. Process Modelling

Process modelling generally refers to visualisation of a process using an appropriate visualisation technique. There are many process visualisation techniques available such as simple techniques like flow charts to complex techniques like BPMN (Business Process Modelling Notation) diagrams. Even though visualisation of processes may appear to be a trivial task, when attempting to do this it is often realised that the understanding of how the processes work is different from one person to another. Therefore, process modelling is always conducted as a collaborative activity to understand of how things should happen in an organisation. Visualisation of processes in healthcare organisations can be conducted as a collaborative research task, that can lead to process analysis, benchmarking, optimisation and automation explained below. Also, the created process models are great communication and education tools.

Research Priority
To carry-out analytical visual representation of 'as-is' processes (e.g. process related to, but not limited to: coding, auditing, ABF, documentation, reporting, data linkage, etc.), in order to recognise the structure and nuances of current processes.

2. Process Analysis

Process analysis in any organisation is an exploratory task that helps in understanding problem areas associated with processes and finding possible solutions to these problems. Generally, the processes analysis goes hand in hand with a modelling task. When analysing modelled processes, researchers can identify bottlenecks, complexities, redundancy of activities, and poor organisations of activities. This in return helps in developing solutions to overcome the identified problems.

Research Priority
To conduct a deep-dive holistic analysis of existing processes in identifying expensive, wasteful, time-consuming and unproductive aspects of 'as-is' processes, with the objective of development of more efficient 'to-be' processes.

3. Benchmarking of processes

Process benchmarking exercises generally refers to an analysis task that is conducted across two or more organisations to understand how various organisations work. Through a benchmarking exercise, researchers can learn from one another in improving the internal organisational processes.

Research Priority
To conduct comparative studies of similar processes, between two different healthcare organisations or an organisation in an entirely different industry sector, to discover best practices and possible avenues of improvements.

4. Process Optimisation

Process optimisation refers to research activities conducted to improve the performance of a process. These improvements can come in the form of increasing the productivity, reducing time, reducing costs, increasing quality of the outcome, or even aspects such as reduction of carbon footprint associated with a process. While process automation goes hand in hand with process optimisation, the optimisation task does not always have to end up in an automation task.

Research Priority
To study the ways in which how processes can be improved to optimise the use of existing human resources with techniques such as process re-engineering, automation, efficient monitoring, etc.; in order to maximise throughput and/or efficiency while minimising cost.

5. Full or semi automation of processes

Full or partial automation of processes is a popular research topic related to any organisation. Automation would consider aspects such as establishment of information systems (databases) to support the people who complete the process activities.

Research Priorities
To carry-out exploratory studies on ways in which processes can be partially or fully automated, using appropriate and future proof technologies, that will enhance the use of current human workforce.

References:

Butler-Henderson K, Nicol K, & Walker S (2018) Research trends in health information management Health Information Management Association of Australia: North Ryde, Australia.

Commonwealth of Australia (2015) 2015 Intergenerational report Australia in 2055 Commonwealth of Australia: Canberra, Australia.

Franken, H. M. and W. Janssen (1998). "Get a grip on changing business processes." Knowledge and process management **5**(4): 208-215.

Health Workforce Australia (2013) Health information workforce report Health Workforce Australia: Adelaide, Australia.