Quality data in public health, epidemiology and specialised data collections: what comes out is only as good as what goes in

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When Sonia Palma and I were asked to be guest editors of this issue of HIM-Interchange (HIM-I), as the theme was public health, epidemiology and specialised data collections, a learned colleague said to me ‘You will enjoy it! It will give you a chance to preach from your soapbox’. [For those of you who have never heard this analogy before (probably due to age), it refers to the practice of the early 1900s when either evangelical preachers or political enthusiasts would stand on a soapbox on the street corner (to give them elevated height) and expound their views (usually passionately) on their chosen topic]. For me, that topic is quality data and data quality - a fundamental focus that is common between the many and varied roles into which our profession has advanced. However, before we proceed further down this track, let us begin at the beginning.

The evolution of our professional title from ‘Medical Records Librarian’ to ‘Medical Records Administrator’ to ‘Health Information Manager’ is a direct reflection of the changing and expanding roles of our workforce. If we took a random sample of 100 health information management graduates and surveyed them on their job titles, the range of terms would be extensive: health information manager, quality manager, database manager, information officer, clinical coder, research officer, project officer, operations manager, clinical trials co-ordinator and so on and so on. These job titles alone demonstrate the diversity, flexibility and importance of our role in public health, research, screening, health informatics or database management – you will (most likely) become the natural custodian of data quality in your workplace setting, either by design or character trait. There is something about us, as HIMs, which naturally gravitates towards ensuring ‘quality data’. In practice, if not in name, we become the ‘stewards’ of data, overseeing one or more aspects of its collection, recording, analysis, reporting and governance. As a HIM (and researcher) who has worked in the public sector arena for more than 20 years, the issue of quality data has been engrained into my psyche. Countless hours have been spent following up incomplete or missing information from data forms, weeks spent cross-checking information on death certificates, and hours spent producing tables for publication only to find at the last minute that there is an error in a dataset. Each of these scenarios is very real and typical for all of us who work in this field.

Therefore, it is around the topic of quality data and data quality in public health, epidemiology and specialised data collections on which we wish to focus in this issue of HIM-I. To do this, we will share with the experiences of other HIMs and health information management students who have undertaken tasks that reflect the role of data custodian in many different health settings. It will soon become apparent that we all share many of the same joys and frustrations in this world of health information management where ‘what comes out is only as good as what goes in’!

It is not just data quality we are talking about, but quality data

The famous fictional detective, Sherlock Holmes, cried impatiently in the novel, The Adventure of the Copper Beeches, ‘Data! Data! Data ... I can’t make bricks without clay’ (Conan Doyle 1980[1892]: 298). Despite his immense analytical skills, Sherlock Holmes could not solve a crime unless he had the right information. Such is still the case today. Quality data are essential for effective decision making in all facets of life, not least of which is population (public) health. Quality data are critical to ensure the accurate measurement of the burden of key diseases.

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disease, to improve quality of patient care, for health service provision and planning and for good public health decision-making.

What is the difference between data quality and quality data? Data quality may be defined as ‘a perception or an assessment of data’s fitness to serve its purpose in a given context.’ (Rouse 2005) [Emphasis added]. It is associated with terms such as accuracy, timeliness, completeness, relevance, consistency and accessibility. The particular terms used may differ according to the specific settings in which the data are collected.

In contrast, the term quality data refers to the output of data quality activities. It implies that the assessment of the quality of the data has taken place and a high level of excellence has been achieved so the adjective of ‘quality’ can be ascribed to the data that have been assessed. Quality is what we aspire for in all of the data in public health, epidemiology and specialised data collections.

The importance of a Data Quality Framework

The concept of quality data produced through data quality activities is so pervasive that it is not only the health sector that understands its value: the business world, manufacturing, information technology and others are all familiar with the concept of a Data Quality Framework (DQF). The DQF provides an industry-developed best practices guide for the improvement of data quality and allows companies to better leverage their data quality programmes and to ensure a continuously-improving cycle for the generation of master data’ (Global Language of Business n.d.)

This has now become a fundamental cornerstone of our data rich society. Underpinning most of our public health and specialised data collections (from the Australian Bureau of Statistics to the Victorian Cytology Service to a Medicare Local) is a strict data quality framework that governs all that we collect, analyse and report. The presence of a detailed DQF provides credibility and accountability for the data collection and describes the parameters from which data analysis and reporting can take place. Without the definitive guidelines provided by a DQF, a data set would be more open to misinterpretation or misuse. I continually remind our students that you ‘can’t compare apples with oranges’. That is, if you want to report a particular health indicator from one regional area with the ‘same’ indicator in another area, you need to ensure that the definitions of, for example, inclusion criteria, data collection method and how the data have been recoded are the same in both settings. This should all be described by a comprehensive DQF.

The rise of evidence-based practice

The importance of quality data is further highlighted by the rise of ‘evidence-based medicine’ (EBM) in the 1990s where clinical decision-making was informed by ‘best available, current, valid and relevant evidence’ (Dawes et al. 2005). The idea broadened further to evolve from EBM to evidence-based practice (EBP) in all of the allied health disciplines. A feature of modern health policy and practice is that it must be evidence-based, that is, decisions must be based upon true and accurate data.

This movement is considered to be so important that a core aspect of many health programs taught in many universities world-wide is the inclusion of EBP principles and processes. Students in the health professions are taught to ASK practice-related questions, ACQUIRE relevant evidence, APPRAISE the evidence, APPLY it, and then ASSESS how well they have undertaken the entire process (Hoffman et al. 2010: 8). This whole process of appraising the evidence equips health professionals with the ability to evaluate the internal validity and strength of research evidence and determine if the data produced are quality data that are the best available.

Australian Safety and Quality Framework for Healthcare

Further evidence of the increased reliance of the health sector on quality data in all its domains is the development of the latest National Health and Safety Quality Standards (Australian Commission on Safety and Quality in Healthcare n.d.). While the primary focus of these standards is to ‘describe a vision for safe and high quality care for all Australians’, it is important to note that one of the major underpinnings of the process is that it must be ‘driven by information’. This means ‘using up-to-date knowledge and evidence to guide decisions about care. Safety and quality data are collected, analysed and fed back for improvement’ (Australian Commission on Safety and Quality in Healthcare n.d.). A primary source of this information is routinely collected administrative data and specialised collections including ICD-10-AM/ACHI coding, incident reporting, clinical documentation and specialised registers. The effectiveness of this endeavour to ensure patient safety and quality of healthcare will only be as good as the data collected.

So where to from here ...?

In considering how to proceed with the theme of this Issue – epidemiology, public health and specialised data collections,
linked to my ‘soapbox’ theme of quality data, it seemed expedient to consider the following issues in the context of the specialised collections:

- **How do we get quality data** (i.e. the data quality processing practices to produce quality data?)
- **AND**
- **What are the implications of quality data** (for health service provision, patient safety and effective data management?)

Linked to this was the opportunity to have final-year health information management students from La Trobe University share their experiences on placement in non-traditional HIM roles in epidemiology, public health and specialised data collections and to reflect upon the role of HIMs in these settings.

So please sit back, read and enjoy the contributions ahead.

### References


