The role of a Health Information Manager in creating data fit for purpose

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Abstract
When emergency and waiting list data are submitted by health services to the Victorian Department of Health they are not ready for immediate use. Data must undergo further edit and rule checks before they can be declared fit for purpose and made available for internal and external stakeholder use. Further transformation of the data is constantly required to suit individual stakeholder requirements; this requires in-depth knowledge of each dataset. Health Information Managers are especially suited to this role because of their understanding of classification, exposure to the data at hospital-level and general health information management skills.

Keywords (MeSH):
Data Collection; Healthcare Sector; Information Services; Data Sharing.

The author of this report is a Health Information Manager (HIM) working at the Victorian Department of Health (DH). Based in the Health Information Provision Unit of the Hospital and Health Service Performance Branch, her main responsibilities include the preparation, extraction and provision of admitted, elective and emergency hospital data for use by internal and external stakeholders to DH.

In order to bring data to a central point where they can be used by external stakeholders, various processes have to be undertaken; many people may not realise how much additional work has to be performed before submitted data are turned into usable information. This article describes the process of transforming basic hospital data into a more useful format.

Admitted episode data
In Victoria, admitted episode data are submitted to DH via an external agency, where they undergo various edits and validation rule testing. Episodes that do not pass the validation process are rejected and sent back to the submitting health service for correction. Data that do pass are stored until extracted by DH after the submission deadline is passed. A similar process occurs with emergency department and waiting list data, except that this is sent directly to, and validated by DH, before being held in a repository until declared fit for purpose.

It is at this point of the process that the HIM receives the data to prepare for use by stakeholders. Separate text files containing all of the accepted year-to-date admitted episodes, emergency department presentations and waiting list data are made available. Although all have already undergone processing, the files are not in a format that is user-friendly or complete. Further processing is required before the Victorian Admitted Episode Dataset (VAED), the Victorian Emergency Minimum Dataset (VEMD) and the Elective Surgery Information System (ESIS) are considered to be updated and ready for use.

The processing of admitted episode data typically involves running the data through a series of 50 to 60 computer programs, all of which are written in SAS® computer programming language. These programs cover a multitude of functions, including: (a) the derivation of further data variables; (b) splitting the data into public and private episodes; (c) splitting unseparated from separated episodes; (d) populating pivot tables used for service monitoring, planning and forecasting; and (e) producing custom specific datasets for internal and external stakeholders. Many transformations of the data take place to achieve these outcomes, and the entire process can take from four hours to two days — depending on the presence of any issues affecting data quality. Once completed, the data are then declared fit for purpose.

Emergency department and elective surgery data
The processing of emergency department and elective surgery data requires a smaller number of computer programs, and is performed more frequently than for
the admitted data. The programs associated with the production of these datasets do the following: (a) the derivation of further data variables; (b) populating pivot tables to monitor compliance and performance against targets; and (c) creation of flat files (spread-sheets) for use by other stakeholders within DH. The emergency department and elective surgery datasets are also subject to data quality checks before being declared fit for purpose. Typically this can delay the availability of data to stakeholders, but it is in the best interests of everyone to have accurate data when these data are used in decision making and reporting.

It is the responsibility of the HIM to make sure these programs run without errors and produce the output that they are designed to produce. The HIM is also responsible for updating these programs with any changes to the datasets between financial years, so that information provision is seamless. It is necessary to liaise with other units to determine any funding, program or policy changes that may affect code sets or the datasets themselves.

In addition to routine processing, a dynamic environment exists where internal and external stakeholders constantly require data to be available in different configurations to support their business decisions and reporting requirements.

National Minimum Datasets
The biggest and most time-consuming configuration of data is for the National Minimum Datasets (NMDS) held by the Australian Institute of Health and Welfare (AIHW), which is prepared after all datasets have been consolidated for the year. Preparing the data for NMDS requires further transformation, and as this work involves all major datasets – admitted, emergency, elective, outpatient, mental health and establishment (agency information) - it takes a team of people comprising both HIMs and non-HIMs to produce. The AIHW requests that all jurisdictions (the states and territories) transform their data so that it meets predefined specifications, as well as passing a number of validity, frequency, critical notification and historical edits, or data checks. The process requires many months of work and it continues well after submission of data, where data must be checked before any publications can result. This usually requires further liaison with health services and other units within DH.

The role of the HIM in data transformation
Much of this data transformation calls on the health information management skills of the HIM but it also requires computer programming skills. Currently, most of the data extraction duties are performed using SAS® programming, but as DH moves in new IT and data storage directions there will be opportunities to expand programming knowledge to include SQL, Macro Language and Visual Basic.

The world of data management is interesting and varied. While it is not essential to have a health background for this role, it certainly is an advantage. HIMs are especially well suited because of their understanding of ICD-10-AM/ACHI/ACS classification, coding and knowledge of the VAED. Exposure to hospital operations (even at university placement level) also provides a unique insight into the various processes that occur at hospital level and how these may impact on the data sent through to DH. Experience in the coding extraction process and education in ICD-10-AM/ACHI/ACS definitely assists in the understanding and interpretation of data once they come in from health services. In this way, HIMs have the qualities to be particularly successful in the role of creating data fit for purpose.

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