Expanding student’s horizons: Professional Practice placements in public health, epidemiology and specialised data collections

Marilyn Riley

In the following pages you will read reports from five students who undertook their final year Health Information Management Professional Practice placements in areas of public health, epidemiology or specialised data collections. To highlight the context in which students undertake the Professional Practice Program, I have provided a brief outline of placement subjects at La Trobe University.

An introduction to Professional Practice at La Trobe
Professional Practice is an integral part of the Health Information Management courses at La Trobe University. This provides the opportunity for students to engage in real health information management-related work settings so they can see the relevance of their academic studies in practice. At La Trobe, we deliver three Professional Practice (PP) subjects – HIM3PPA, HIM4PPB and HIM5PPC.

La Trobe placement subjects
HIM3PPA is undertaken in the second year of the undergraduate course. It involves five days of placement (one day per week over five weeks) in a metropolitan hospital Health Information Service (HIS) under the direct supervision of a qualified Health Information Manager (HIM) and with formal supervision by a University Health Information Management academic staff member. Its aim is to introduce students to basic HIS functions, policies and procedures. It is strategically aligned with foundational academic modules that students are concurrently studying at La Trobe and it provides students with the opportunity to apply the theory they have been recently learning.

I call this subject the ‘light bulb moment’, when students finally have a vision for the future, for their own career. The increase in student motivation after this early placement is amazing.

HIM4PPB is undertaken in the third year of the undergraduate course or the first year of the graduate-entry Master’s program. It involves fifteen days of placement (three weeks) in a hospital HIS, usually in a regional or interstate setting. Supervision, once again, must be completed by a qualified HIM on-site and there is formal co-supervision (per Commonwealth legislative requirements) by a University academic staff member. Students undertake key functions on placement to gain understanding of the management, informatics, data analysis and clinical classificatory roles of hospital HIMs. Once again, the placement experience is embedded within a theoretical framework with students undertaking academic studies on relevant issues before and after the placement. This is where theory meets practice.

HIM5PPC – Work ready! This final year placement subject exposes students to both the traditional HIS roles and a broad range of specialist roles. It enables the student to experience the diversity of opportunities available to our graduates. Approximately 50% of final year placements are undertaken in health-related research centres, Community Health Centres, Medicare Locals, government departments, specialist medical services, private IT-informatics companies, laboratories, screening services or specialised health/clinical data collections. The student undertakes approximately 45 days of placement (four days/week) over eleven weeks at either one or, typically, two separate placement agencies to consolidate learning from their academic studies and previous Professional Practice placements.

Allocating placements – the breadth of the placement experience
As Professional Practice Co-ordinator, I note that there is a big challenge to allocate students to placement agencies that enable them to gain the maximum benefits by:
(i) developing their HIS-based and hospital/institutional health information-related skills; and (ii) familiarising themselves with and developing expertise in other specialist areas of HIM work. The ideal scenario is to place a student in a hospital HIS for one placement block and an ‘other’ agency for the second block. This is an ever increasing challenge, particularly following La Trobe’s increase in student numbers in response to requests from the industry and the profession, in light of the widespread shortage of health information management graduates.

Students in public health, epidemiology and specialised data collections
In 2013, 50% of all final year placement blocks were in non-hospital based agencies. Three students were fortunate to undertake epidemiological based placements at the Murdoch
Overview of a HIM student placement with the Australian Clinical Stroke Registry at the Florey Institute of Neuroscience and Mental Health

Emily Warren

Introduction
As part of my final-year professional placement, I spent 20 days during August/September 2013 with the Public Health team in the Stroke Division at the Florey Institute of Neuroscience and Mental Health (Melbourne Brain Centre, Heidelberg). The Florey Institute is a world leader in neuroscience research. All of my previous placements had been in hospital Health Information Services so I was interested to experience another area where HIMs could work, particularly since I have always had an interest in research.

Background to the Australian Clinical Stroke Registry
The Australian Clinical Stroke Registry (AuSCR) is managed at the Florey Institute, which is the current data custodian for the registry. The AuSCR was established in 2009 to provide national data on patients admitted to hospital with acute stroke or transient ischaemic attack (TIA) (Cadilhac et al. 2013). Briefly, the registry is a collaborative national effort to monitor, promote and improve the quality of acute stroke care. AuSCR provides a standardised mechanism to prospectively monitor patient outcomes. Fundamental to this aim is the registration of all eligible stroke cases admitted to the participating hospitals (Cadilhac et al. 2009). As a voluntary registry, AuSCR is not mandated by government and is reliant on the goodwill of hospitals to participate and contribute data. For their efforts, hospitals have access to standard format ‘on-demand live reports’ or their full dataset to enable the analysis of their own data. Hospitals can use this information to fulfill reporting requirements or to inform their quality improvement activities.

Another important purpose of AuSCR data is to aid research. The AuSCR investigators use the data to explore the variations in the quality of acute care in order to reduce disparities in outcomes for stroke. AuSCR Office also facilitates access to aggregate and de-identified datasets to external researchers according to a ‘data access policy’. All access to, or use of, AuSCR data must be approved through formalised governance processes.

Since 2009, AuSCR has grown from six pilot hospitals to include 47 hospitals from across Australia. As of May 2014, 18,617 patients have been registered and 9,189 eligible stroke survivors followed up at 90-180 days after their stroke. The opt-out consent rate is about 2.7%, which indicates a high acceptance rate by patients. This means that less than 3% of patients ask to have some, or all, of their data removed from the registry. Data collection is through an online data web-tool and hospitals can export the data they contribute.

Each hospital has different arrangements for the capture of the relevant data. In addition, it is possible that some hospitals might not be able to input all relevant stroke episodes due to resourcing issues. In a registry, it is important to ascertain that all eligible cases are obtained. This is to ensure that the registry is truly representative of the patients being treated at each hospital for the relevant reporting period.

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1 See Australian Clinical Stroke Registry webpage http://www.auscr.com.au

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Student role during placement: case ascertainment

My main role during this 20 day placement was to assist with analysing and then drafting a report on case ascertainment to be included in the AuSCR 2012 Annual Report (Cadilhac et al. 2013).

Aim of case ascertainment analysis

To quantify the extent to which data held by AuSCR are a full representation of eligible stroke and TIA cases for the relevant reporting period.

Methods

Each hospital had been requested by the AuSCR Data Manager to submit a list of eligible patients, discharged from 1 January 2012 until 31 December 2012, based on a pre-determined set of ICD-10-AM codes for stroke. Determination of case ascertainment was achieved by comparing the data collected within AuSCR to the data extracted by each hospital’s Health Information Department. This process was based on matching the number of ICD-10-AM codes for stroke and TIA for the relevant reporting period. The following ICD-10-AM codes for stroke/TIA were requested for matching: G45.9, I61.0-I61.9, I62.9, I63.0-I63.9 and I64. I linked the hospital records with the AuSCR data to detect potentially missed episodes of stroke or TIA (Australian Clinical Stroke Registry 2012) with oversight by the AuSCR Data Manager. The first round of data matching was done using two data elements together: medical record number and date of admission. The second round of data matching was done using registrants’ full names and date of admission, which serves to pick up non-matching records in the first round. As part of this process, the data needed to be cleaned to ensure they were accurate to be comparable to the data contained within the AuSCR file for each hospital.

Issues pertaining to data quality in relation to case ascertainment

The data quality issues that I encountered, while cleaning and preparing the data, are outlined below. Many of these issues are a reflection of the voluntary nature of the registry:

- failure of hospitals to submit ICD-10-AM reports
- missing and extra episodes
- data for a full calendar year not available for all hospitals
- submitting data outside the 2012 calendar year
- incorrect format of Medical Record Numbers.

Throughout this process, I developed skills in database management and gained an understanding of the processes of the registry.

Further information can be found in the Australian Clinical Stroke Registry Annual Report 2012 (Cadilhac et al. 2013), which provides significant detail on quality issues surrounding the collection and ascertainment of stroke/TIA cases.

Reflections on the role of the HIM in this setting

As HIMS we learn the importance of data quality (accuracy and completeness of data) throughout our course. In order to improve the quality of data for AuSCR, hospital staff require education on the importance of complete and accurate data for the purposes of a national registry. An understanding of the time involved in data cleaning by both their own hospital and staff at the AuSCR Office is also needed. Hospitals should be encouraged to submit data throughout the year, which could help ensure accuracy since smaller batches of data may be easier to manage. Guidelines for hospitals submitting data could include: more electronic edit restraints; warnings around the correct number of digits in a Medical Record Number; and a reminder that only data for the index year should be submitted. Data completeness could be enhanced by targeting hospitals that typically do not submit ICD-10-AM case-ascertainment data and encouraging them to do so. In addition, promoting AuSCR to hospitals that do not currently use the Registry would help increase the amount of data available and facilitate further research. However, increased participation is restricted by funding and the AuSCR Office capacity to support more hospitals without additional resourcing.

Summary

As a health information management student, I have welcomed the opportunity to have a placement within a research institute and see how use of hospital data may be used for a range of different purposes. Clinical quality registries are an important source of complementary data to routinely collected hospital data, and ensuring data quality is an important role of all data custodians.

Acknowledgements

I wish to thank Associate Professor Cadilhac for agreeing to host health information management students within her Public Health research groups. I am grateful for the support and supervision by Francis Kung, Brenda Grabsch and Monique Kilkenny, and the Public Health team at the Florey Institute of Neuroscience and Mental Health.

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Health data analysis of the Elective Surgery Information System’s ‘Removals List’ at DH, Victoria

Phu Lam

Context of the project/placement
The aim of the Health Information Management student placement program at La Trobe University is to develop real-world health information management knowledge and skills through application in supervised professional placements in healthcare and related agencies. Students have the opportunity to undertake placements in a wide spectrum of health-based agencies, including government departments.

The Department of Health (DH) is one of nine state government departments in Victoria (State Government of Victoria 2010). It is the lead agency overseeing all health services, mental health, ageing and aged care and preventive health. It is responsible for policy development, funding and regulation of health services planning. Within the Hospital and Health Service Performance Division, the Information and Funding Systems branch is responsible for data development, collection, and management of health service data collections. Data quality, compliance, timeliness and submissions are integral processes within the Information and Funding Systems branch.

The objective of my placement was to conduct a health data analysis task on the Elective Surgery Information System’s (ESIS) ‘Removals List’. The ESIS was established by the DH to collect patient level waiting list information (Department of Health 2014). The Removals List generated from the ESIS database is a list of patients who have been removed from the waiting list when they are no longer waiting for their elective surgery. A patient is removed from the waiting list if the surgery has been performed, the patient has been unable to be contacted, or the surgery is no longer required for other reasons. The outcome of the project was an analysis of the data quality of the Removals List with a formal written report of the key findings.

My student role during placement
In order to conduct a thorough health data analysis of the Removals List, I first had to research and understand the reporting guidelines that constitute the reporting of Principal Prescribed Procedure (PPP) codes. The PPP is the ‘elective’ procedure for which the patient has been principally placed on the waiting list (Department of Health 2014). PPP codes are grouped into specific and non-specific codes. Specific codes contain exact descriptions for a type of procedure and non-specific codes are used when the patient’s procedure does not fit one of the specific PPPs. Specific codes contain exact descriptions for a type of procedure and non-specific codes are used when the patient’s procedure does not fit one of the specific PPPs. The non-specific codes are free text entry based. The context of my project was to analyse the non-specific subset of codes submitted to the DH.

Extraction of ‘Removals List’ 1 July 2012-30 June 2013 into a Microsoft Excel spreadsheet
Principal Prescribed Procedures Codes [PPP] 176,624 total removals

Extraction of Nonspecific PPP codes 22,950 total removals

Removals labelled
1. Yes: A removal that has been assigned a ‘Nonspecific’ PPP code when a ‘Specific’ PPP was available.
2. Correct: A removal that has been properly assigned a ‘Nonspecific’ PPP code.
3. Needed: A description that has been identified as a code that could potential lead to the creation of a new ‘Specific’ PPP code.
4. Excluded: A removal that has not met the criteria to be classed as elective surgery or is non-reportable.

Figure 1: Flow diagram process for the analysis of the ESIS Removals List
The Removals List was generated as a Microsoft Excel Spreadsheet extracted from the Elective Surgery Information System Database. In total, the Removals List amounted to 176,624 removals from 1 July 2012 to 30 June 2013. The subset of removals with a non-specific PPP code was 22,950 some of which were excluded from the scope of the analysis. Over a period of eight weeks my role was to investigate trends within the free text entries for key criteria set by the Data Collections Unit. The criteria aimed to identify the potential for creating new PPPs based on large numbers of free text entries specific enough to warrant a new code. The analysis determined where entries in the Removals List should be excluded from the Elective Surgery Information System. Non-specific codes that were not considered surgical in nature, non-reportable and not within the scope of the Elective Surgery Information System were marked as ‘excluded’ from ESIS reporting.

The project provided insight into issues pertaining to data quality in a specialised data collection, which can be attributed to a lack of adherence to reporting policies and guidelines. In particular, the use of non-specific PPP codes demonstrated various entries that were not surgical in nature and non-reportable. As such, they should not have been reported in the system. The findings of the project indicated that out of the 22,950 non-specific codes that were analysed, 3,242 were marked as ‘excluded’. This highlights the importance of conducting audits as 3,242 removals were not surgical in nature or non-reportable for the Elective Surgery Information System. A total of 2,075 removals that were assigned a non-specific code should have been reported using an existing specific code. The most common free text description assigned to a non-specific code was ‘Examination under Anaesthetic’.

Examinations under anaesthetic are not regarded as surgical in nature and are non-reportable, yet many patients that were admitted through the Elective Surgery Information System were marked as ‘excluded’ from ESIS reporting. Injections and Botox procedures were also regarded as not surgical in nature and non-reportable and were also a common procedure admitted through the Elective Surgery Information System. This indicates that the definitions of what is considered ‘surgical’ should be explicitly defined in order for hospitals and health agencies to properly report their patients as elective admissions.

Impact of the data quality
The results of this project indicate that many of the patients that are on the waiting list should not be included within the waiting list statistics. The data generated from the ESIS database is used to assess hospital performance. A waiting list that contains many non-specific codes based on admissions that are not surgical in nature or are non-reportable raises the issue of transparent data and accountability of the waiting list. Health service funding is not affected by the reporting of non-reportable codes but this does potentially reduce the validity of reportable statistics. The identification of the use of non-specific codes has allowed the DH to target health services as well as provide general advice regarding the use of specific codes. The specific principal prescribed procedure codes are important for service planning and demand management as the codes are used in conjunction with other collated data as a health performance indicator. This project has demonstrated the need for well understood definitions in order to properly collect and submit data, which impact overall statistical value of the health system data quality.

Reflections on the role of the HIM as data custodians in this setting
Upon reflection of the analysis task of the ESIS Removals list, it is clear that HIMs have an integral role in the production and management of quality data. The health information used to inform decisions is only limited by the quality of the data that are collected, monitored and managed. This placement experience offered me a real-world health data analysis experience by examining the ongoing flow of data inputs and outputs that impact upon the overall quality and validity of health data. Auditing and health data analysis is essential in order to ensure high quality data are used across the Victorian health system. Ongoing auditing and monitoring of data quality is an essential activity in which HIMs are able to apply well-grounded education and training in hospital and government-based agencies. Data quality activities conducted by HIMs contribute much needed value to the positive function of the health system.

Acknowledgement
The Guest Editors would like to acknowledge the support of Kirsty Anderson, Manager, Data Collections Unit, Victorian Department of Health, for supervising this HIM student placement and for providing feedback on this report. We would also like to thank the other staff of the Data Collections Unit who assisted with this placement project.

References

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Prenatal testing: a longitudinal study, Murdoch Children’s Research Institute

Sophie Irwin

The health information management profession offers a dynamic range of career opportunities, setting it apart from other professions. I was fortunate enough to experience this firsthand during my final student placement with La Trobe University.

Context of the project

I was involved in the Prenatal Testing: a Longitudinal Study (PeTALS), an Australian-first study lead by the Murdoch Children’s Research Institute. Currently, there is insufficient Australian research regarding how women make decisions and access supports following a foetal abnormality diagnosis during pregnancy, leaving women’s experiences largely unexamined. In Victoria each year approximately 4% of babies are born with a foetal abnormality, many of which are diagnosed within the prenatal period (Riley & Halliday 2008). Recent breakthroughs in prenatal non-invasive testing technology combined with advancements in availability and accuracy of current testing and screening methods are expected to substantially increase the detection rate. Therefore, given the recent technological advancements, it was ethically imperative that research into this area be conducted. PeTALS hoped to fill the gaps within the literature to better inform future clinical practice. PeTALS aimed to investigate the experiences of women, specifically examining the psychosocial impact, types of supports utilised and long-term outcomes following a diagnosis. Information was retrospectively ascertained through two psychological scales administered at three time points: six weeks, six-nine months and two years post foetal diagnosis. Participants were also given the opportunity to participate in an in-depth telephone interview about their experiences.

My student placement role: the process undertaken

It was my role as a health information management student to develop and implement a data extraction process and storage solution for all extracted project data. I began by first familiarising myself with literature on prenatal diagnosis, to better develop my understanding of the conditions for which participants had received a diagnosis, and the prenatal screening and testing methods. Gaining a solid knowledgebase was later fundamental in my ability to extract relevant data. I began the extraction process by manually mapping out participant perceived journeys from the transcribed telephone interviews onto paper. This enabled me to visually identify a conceptual framework in which to categorise the data. Extracted data included any stated health professional involvement, the key gestations and dates that the diagnosis, screening, testing or appointments had taken place, the final foetal abnormality diagnosis, foetal outcome and any future pregnancy information. After developing the conceptual framework I was able to incorporate this into the creation of a project database. Due to the ongoing nature of PeTALS during my involvement, the solution needed to be easy to use by all members of the study team to ensure its continued use once I had left. With this in mind, it was decided an Excel program was the most suitable option. A set of categories were decided upon and a range of drop-down predetermined menus were created to facilitate efficient and accurate data entry. Using the newly created Excel database I was then able to commence preliminary data extraction from interviews that had been transcribed up to that point. This allowed me to check for completeness and accuracy as I entered the data.

The qualitative approach

PeTALS applied qualitative methodologies to provide a rich understanding of the participants’ ‘lived experiences’. The qualitative approach draws on an inductive coding process where transcripts are examined for similarities and differences, thus allowing interpretations to emerge from within the data (Rice & Ezzy 1999). This differs from quantitative research, which draws on deductive coding that uses pre-determined quantifiable categories (Polgar & Thomas 2013). Qualitative techniques are, therefore, very useful in areas of research where little is known. While coding participant responses, a noticeable key difference emerged; some participants stated exact dates and gestations, and when relevant events took place, while others did not. Initially, I extracted dates and gestations only if illustrated by a direct quotation from a participant, as this increased the validity of the data. However, it was later agreed by the project steering committee that this could result in the under-representation of findings. I, therefore, began to use a pregnancy wheel to estimate dates and gestations that were not stated. All estimated data were recorded with an asterisk. This allowed for the study team to distinguish between directly stated data and estimated data.

Reflections of the role of the HIM as data custodians in this setting

Traditionally, the HIM’s responsibility has been to collect, store and analyse data within a health information services role. However, recent changes such as the introduction of the electronic medical record, increased consumer involvement in healthcare, and a growing demand for more sophisticated health research have placed additional demands on health information management professionals to expand into more
‘non-traditional’ settings (Health Information Management Association of Australia 2012). The diversity of roles in which HIMs can work makes it apparent that their skill set is unique and versatile, setting HIMs apart from other working professionals. My involvement with PeTALS is a prime example of how health information management skills can be utilised in a ‘non-traditional’ environment. A HIM’s ability to efficiently code and categorise various types of data provides the flexibility to work in many areas, including qualitative research.

Acknowledgements
Thank you to Jan Hodgson for offering me such an insightful placement and for reviewing this article.

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South Eastern Melbourne Medicare Local (SEMML) is one of 61 Medicare Locals that are in operation nationally. Medicare Locals are Government initiated district primary healthcare organisations that embrace a primary focus upon population health planning, coordinating and connecting health and social care, and identifying service gaps within their regions (South Eastern Melbourne Medicare Local 2014). Further to this, SEMML has a focus on increasing equity and ease of access to primary health services to better the health outcomes of its community members. SEMML currently has a demographic population of 462,170 people, which is projected to increase to reach as many as 663,615 by 2026 (South Eastern Melbourne Medicare Local 2014). Due to the scope of the organisation’s functions and diversity of its operations it is imperative that quality systems guiding data collection, reporting, and monitoring processes be established for accurate analysis and considered planning for population health needs and quality service provision.

Roles such as the HIM offer an employer broad skills and capabilities that are transferable across a range of health arenas and play a significant part in the application of research and scoping skills, quality and accreditation, records management, privacy and freedom of information (FOI) understanding, and data management capability. The placement opportunity I was fortunate enough to gain with SEMML in 2013 enabled direct supervision under the Quality Manager while liaising with the organisation’s Senior Project Officer. The impetus for the project was driven by the Medicare Local Standards Accreditation Scheme, with a requirement for SEMML to meet its legislative and standard requirements. I was assigned the role of researching, scoping and generating a procedure encompassing Client Identification Clinical Documentation and Storage, generating and conducting an audit against this procedure, and evaluating materials and quality processes across a number of SEMML’s program areas. The purpose of this project was to ensure the safe management and handling of the client healthcare record across both hardcopy and electronic platforms, enabling SEMML to meet its accreditation requirements in part fulfilment of Standard 10 – Clinical Services Standard (Australian Government, Department of Health 2013). The program and service areas in the scope of this project included mental health, diabetes service, refugee health and Aboriginal and Torres Strait Islander (ATSI) programs.

The project to which I was assigned involved thorough research of current best practice standards and legislative requirements to enable the development of a procedure and audit materials requiring approval through the organisation’s governance structure. The approval process involved policy, procedural and audit materials to be provided with review comment from a two-tier committee approach prior to final endorsement and approval (South Eastern Melbourne Medicare Local 2013). SEMML’s detailed Policy and Procedure Endorsement Process is shown in Figure 1. The project also required the scoping of SEMML services and areas of activity to establish applicability and appropriateness of the audit content against the procedure, piloting of the audit tool and protocol, and conducting the audit. The final project stages involved the amalgamation and analysis of the audit results and the reporting of findings and recommendations that had emerged.

Data quality was an ever-present theme at each and every stage of this project. Initial stages included ensuring correct interpretation and application of legislative requirements and understanding and awareness of the most relevant best practice standards in relation to clinical documentation management and storage. The document review process that is embedded in SEMML’s governance system was utilised to ensure adequate evaluation, approval and endorsement of policy, procedural and audit materials. All of these phases of quality assurance are documented throughout SEMML’s established Governance and Audit Frameworks, which supported the life of the project through to its implementation and ongoing monitoring. As the project progressed, it was clear that the HIM role had immense value in the understanding and application of many components relating to this quality improvement project, while offering transferable research and scoping skills and facilitating proficiency and confidence in the management of a variety of documents.

In this particular healthcare setting, it is imperative that data quality is ensured and promoted throughout all levels of the organisation. All data that are gathered and collated in initial stages of assemblage may eventually become a component of mandatory reporting requirements. As there are multiple service and program areas collecting varieties of client health information and in differing contexts, there are different minimum datasets that each are required to report to. If the data are of substandard quality, inaccuracies may contribute to the production of incorrect program activity data, imprecise representations of the morbidities of the catchment and
noncompliance with expected standards. As Medicare Locals are Government-funded organisations, poor data quality may lead to erroneous distribution of funding. Further to this, a significant requirement of the Medicare Local is to meet its accreditation standards. This is partly achieved by the demonstration of quality systems that are embedded within the organisation’s processes and procedures. Failure in this area has the potential to cause termination of funds to the organisation, which carries a greater cost and strain to health service provision across the whole catchment area.

Reflecting upon my placement experience, and now working as a Quality Improvement Officer employed by SEMML, I can comment on just how imperative health information management knowledge has been in my role as a student, as an employee, and in the various roles of colleagues who also have health information management backgrounds within this organisation. HIMs offer the skills and capabilities to collect, understand and interpret a range of data types and must ensure data quality from primary points of collection, while embedding, monitoring and advocating quality control application. This then enables sustainability, interpretability and reproducibility. By instilling the importance of data quality at the ‘front line’, and striving to embed a culture of quality throughout all areas of the data handling and management process, HIMs are significant contributors to the process of striving for continual quality improvement to be achieved within numerous healthcare settings.

References

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The AQUA Study: experiences of a HIM student in a research placement

Leah Marino

Context of the project placement
The ‘asking questions about alcohol in pregnancy’ (AQUA) study is a large prospective cohort study conducted over four years (1 June 2011 to 1 December 2014) by the Public Health Genetics team at the Murdoch Children’s Research Institute. The aim of the study is to compare the possible effects of low to moderate alcohol consumption with total abstention from alcohol during pregnancy. Approximately 2154 participants were recruited in the initial phase of the study and 92% consented to having their medical records accessed by researchers in order to obtain their perinatal data. Perinatal data included the participant’s study ID, their demographic details, information about their current pregnancy (including maternal medical conditions occurring in the antenatal period and any obstetric complications), information about the labour, the birth and the postnatal period including the type of labour, the method of birth and any postpartum complications. In addition, important information regarding the baby including the birth weight, estimated gestation at birth and any birth defects present at birth was included.

Student role during placement
My role on the AQUA study was to abstract and clean the perinatal data collected from four study sites and to create a perinatal data master file. It was evident that for successful data analysis to take place, the researchers required the data to be merged. To achieve this, it was necessary for me to store all of the participant’s perinatal data in one general location for easy access and merge it into a master file, using Microsoft Excel for ease of use. The data needed to be uniform and consistent, so that all data were presented in a standardised way. Before this could be done data errors were identified and corrected. For confidentiality and privacy requirements, the data were stored securely and password protected.

Once this task had been completed, my aim was to focus on the many maternal medical conditions, obstetric complications and birth defects abstracted from each study site and to group them separately from the perinatal data master file in order to code them using ICD-10-AM/ACHI/ACS 7th Edition. Once all the individual maternal medical conditions, obstetric complications and birth defects were coded, I entered them into an alphabetical coded data dictionary and used the data analysis software Stata12 to conduct some descriptive analysis on the most common maternal medical condition (Vitamin D deficiency), and the frequency of maternal medical conditions at all four study sites.

Issues pertaining to data quality
Many issues regarding data quality were encountered during the project. These issues mainly stemmed from the fact that the four study sites used different systems to collect the data required. Each study site was given a list of perinatal data variables that needed to be abstracted from the medical records of study participants; however, we found that out of the four study sites, only one gave us the required data for each variable in the format requested. It goes without saying that ensuring that we had correct information for each perinatal data variable involved a considerable amount of follow-up work.
While I was merging the data from the four study sites, I discovered that one of the sites did not submit any data on neonatal morbidity and birth defects for their study participants. As these morbidity data were extremely important to the study, we had to follow this up by requesting the data and then waiting for the missing data to be sent to us.

One of the study sites chose to submit their data using ICD-10-AM codes and numerical values without any descriptors, which was difficult to decipher. For example, in relation to the neonate’s sex, the site had assigned a ‘1’ for male and a ‘2’ for female; however, I was unaware of this practice and I had to contact the site to verify the information. In relation to the maternal medical conditions, obstetric complications, neonatal morbidities, and birth defects at this site, ICD-10-AM codes were assigned without any code descriptions and a researcher with no clinical coding experience looking at these data would find this confusing. I spent a lot of time re-naming these codes and numerical values with descriptions so they could be standardised with the data from the other study sites. I also found that the ranges of maternal medical conditions were quite varied between the four study sites due to the different hospital outpatient clinics available. For example, at one study site we discovered that some participants had conditions relating to illicit drug use because that site had specialty outpatient services for patients with drug and alcohol abuse problems.

The process of data cleaning and merging from the four study sites into one master file was very time consuming and required a lot of concentration; however, I knew that once the task was complete, it would be highly beneficial for the AQUA study as they could conduct further data analysis on the master file as required.

Reflection on the role of the HIM as a data custodian in research

At first I could not see how a HIM could be beneficial to a research study, but after completing this placement I realised that our knowledge of health information management, data analysis, statistics, ethics, medical terminology, and clinical coding are desirable traits that can be very useful in the area of research.

When undertaking clinical coding in a hospital setting, we are advised to apply different Australian Coding Standards and rules to certain diseases and interventions; however, in a research-based setting our aim is to code ‘everything’, as this reflects the entire picture of the patient’s medical journey. In research, we need to code the patient’s entire past medical history up to the present as it may have an influence on their current health status or outcome. In relation to the AQUA study, it is important to realise that there are many differences in the coding of perinatal data for research compared to coding for government reporting purposes.

I recommend that Health Information Management students with a passion for research, epidemiology, and data statistics undertake a placement in a research-based setting as it provides a fantastic opportunity to see how a research study works. To be able to contribute to the study through health information management related tasks such as data integration, analysis, and clinical coding is very rewarding indeed.

Acknowledgement

I would like to acknowledge Dr Sharon Lewis and Professor Jane Halliday from the Murdoch Children’s Research Institute (MCRI) and thank them for providing me with an insightful experience of research and epidemiology and for taking the time to review this article and provide me with valuable feedback.

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