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The Health Information Management profession has grown, matured and changed remarkably over the last two decades. I graduated from the Medical Record Administration course in the late 1970s, and not only has the profession undergone a name change since that time, but we have also witnessed a change in roles of many of our contemporaries.

Our profession no longer manages only the medical records and libraries of large acute institutions, but has now moved into other disciplines in the health industry such as rehabilitation, mental health and gerontology, and has also moved out into industry and government. The role of the Health Information Manager is now more diverse than ever, with increasingly challenging roles in areas such as health information data analysis in the health insurance industry, clinical trials, epidemiology and health authority data collection. Such diverse roles and duties pay credit to the dynamics of HIM courses that provide the necessary skills to equip us to meet the challenges of roles such as those presented in this edition of the Journal.

Health information management courses at the universities are constantly expanding to incorporate new technologies and practices, so that the graduates of today are able to choose a major stream of study enabling a specialist knowledge of a particular sector of our industry. Our professional association’s continuing professional development programs support the formal education of graduates and maintain practice knowledge and industry expertise. Qualifications in health information management have also enabled us to move into such areas as forensic medicine and correctional health services, general practice, risk management and project management and the law. We have expanded our skills and knowledge base to incorporate health informatics and systems management, in addition to the classification and terminologies we utilise constantly. Specialist areas of health information management often require extensive knowledge of numerous disciplines, which may then be incorporated into specialist health services. Through this edition of the Journal we are able to share the experiences of those Health Information Managers working in areas outside the perceived traditional role, and are inspired to consider the options and possibilities of our own future development. In particular, we hear from Brendan Gardner, who describes his unique experience in the management of refugee health records.

An important area of development in health information management is that of governance and the role of the board member. Whilst HIMAA has a national board, there are rules and regulations specified by the Australian Securities and Investments Commission (ASIC) which must be learned and exercised by those responsible for managing the affairs of the organisation. This is an example of a specialist role for Health Information Managers and such experience on the HIMAA national board will assist those interested in pursuing a career on boards of management in the future.

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Guest Editorial

Feel like a change? Read about Health Information Managers in non-traditional jobs

Irene Kearsey

The theme

This issue has as its theme Health Information Managers working in non-traditional jobs. When the topic was allocated to this issue, I had, as a starting point, a list of non-traditional (and specialised) areas where Australian Health Information Managers were known to work. This list was the result of brainstorming by Health Information Management Journal editorial office-holders and HIMAA staff. With help, I added the names of individuals to many of these work areas. Then I began a round of telephone calls, asking people to write about their unusual jobs.

No one refused my request for an article outright: only one was unable to deliver because of other pressures, and some said there really wasn’t anything so different about what they actually did, even though their employer was a specialised health service.

Sometimes, people who agreed to write then suggested others in their work area. In a couple of cases this has resulted in some concentration of focus, but I do not think this detracts from any of the articles.

When I had enough promises, I stopped recruiting, leaving more than enough ideas for future issues like this one.

Each author was given free rein to write as much or as little as they wanted, covering whatever they wished to say about their job. However, I gave a list of aspects they might like to include. For example, one suggestion was, ‘What HIM skills do you use and what other skills did you need to acquire?’ Another was ‘What is a typical day (if there is such a thing)?’. I asked for ‘personal’ and ‘informal’, not academic, in tone.

The issue

I think this is a great collection of articles – a really good read – and I thank all the authors for ‘telling it like it is’. At least one of the writers said she found the exercise personally helpful. And I hope those authors who have not written for publication before might take the plunge and write more.

Putting the articles into a sequence took me some agonising and quite a deal of time; finally, I arranged the papers so that, where there are similarities in the work area, those articles are together, but otherwise the order attempts only to provide some geographical variety.

Characteristics in common

From their articles, it is clear these authors share several characteristics. They were willing to take a risk by going into the unknown (and some of the work environments must have needed some nerve, initially).

All have eagerly extended their skills. When assigned unexpected tasks by an employer who was unused to a Health Information Manager’s normal duties, these Health Information Managers coped cheerfully, but many also managed, over time, to mould their jobs to suit (one author told me that, when first starting her job, her responsibilities included building security, a task she accepted and only shed later on).

The enthusiasm these Health Information Managers display in their work is inspiring. Brendon Gardner’s article takes the breath away, as he had only five days for his project (and it was just days before the birth of his first son), while the other writers had longer timeframes.

All these authors come across as modest, but we can read between the lines; their employers are happy with their recruiting because all these Health Information Managers really display the ability to deliver (par don the pun, Brendon).

One common response when I requested an article was, ‘Yes, I’ll write something, as I’d like to encourage other HIMs into this area’; several writers tell us they have already had success in this. While hospitals will always remain a major area for Health Information Manager employment, I hope this set of articles will encourage HIMs to consider non-traditional areas of work as well. And if these articles should fall into the hands of a potential non-traditional employer, perhaps more HIM jobs could be created.

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Associate Editor for this issue
Register–recall systems: tools for chronic disease management in general practice

Andrew Georgiou, Joan Burns, Danielle Penn, Fernando Infante, Mark Harris

Abstract
The Divisions Diabetes and Cardiovascular Disease Quality Improvement Project (DDCQIP) is a national project that aims to promote quality improvement initiatives among Divisions of General Practice. DDCQIP has investigated the growth of Division-based diabetes and cardiovascular disease register–recall systems and the role they play in promoting evidence-based structured care within general practice. In the period 2000-2002, an increase in the number of GPs using register–recall systems and the rise in the number of active registered patients have made it possible to monitor quality of care and health outcome indicators, and contributed to the growth of a Division-based population health program.

Keywords: Diabetes; cardiovascular disease; general practice; registers.

Introduction
General practice plays a key role in the Australian healthcare system, with some 90% of Australians visiting General Practitioners (GPs) each year (Pegram 2000). There has been increasing emphasis on improving the quality of care in general practice in the last few years (Marshall et al. 2002). Much of this has centred on chronic illnesses, which account for one in every 10 general practice encounters (Britt et al. 2001).

In 2001-02 the Australian Government introduced the National Integrated Diabetes Program. This initiative aimed to improve prevention, increase early diagnosis and promote better management of diabetes in general practice through the introduction of funding and support for systematic care, based on 12 key clinical indicators performed as part of an annual cycle of care (National Health Priorities and Quality 2003).

The UK Prospective Diabetes Study had demonstrated that good glycaemic control and management of high blood pressure can significantly improve clinical outcomes and reduce diabetes-related complications (Stratton et al. 2000; UK Prospective Diabetes Study Group 1998). These improvements in the quality of care and outcomes for people with diabetes are facilitated by a systematic approach within general practice. A major part of promoting such an approach is the use of a disease register and regular recall and review system, along with greater involvement of practice nurses and a system for auditing standards of care (Griffin 1998). This also includes intensive follow-up, and use of clinical management guidelines integrated with self-management support programs (Wagner 1998).

The Australian Divisions of General Practice play an important role in supporting GPs to improve their quality of care and in integrating general practice with other health services in the community. The establishment of a Division-based diabetes register is an important means of providing such support to the GP. These registers are based on participating GPs submitting data from consenting patients. These data are entered onto a Division-based computer register. The Division is then able to provide GPs with reminders to assist with patient recall, along with audit reports on the GPs’ adherence to diabetes management guidelines. It has been demonstrated that GPs using Division-based diabetes registers are more likely to provide patient care that adhered to evidence-based guidelines than those who do not use the registers (Harris et al. 2002). The role of Divisions in promoting quality of care and population health in chronic disease areas, like diabetes and cardiovascular disease (CVD), is therefore of major importance.

Since the late 1990s, the development of Division-based register data, along with the establishment of national meta dataset standards within the Australian National Health Data Dictionary (Australian Institute of Health and Welfare 2001), have enabled Divisions and healthcare planners to monitor key aspects of the management of diabetes and CVD patients within general practice. In 1999, the first collation of data from Division registers was undertaken by the National Divisions Diabetes Data Collation Project (DDDCQIP), which included seven Divisions (Burns et al. 2000). This exercise was repeated among 22 Divisions in 2002 (National Divisions Diabetes Program 2004). Important national initiatives like HealthConnect are based on the standard national dataset (HealthConnect 2004). HealthConnect is not currently being used as a quality improvement tool at the Division level, where data are aggregated and compared to evidence-based guidelines and supported by educational activities.

The Divisions Diabetes and Cardiovascular disease Quality Improvement Project (DDCQIP) was an initiative of the National Divisions Diabetes Program, which was first established in 1996 to provide support to Divisions in establishing shared-care programs for diabetes. DDCQIP aimed to describe the quality of care and intermediate health outcomes for patients with diabetes and CVD managed in general practice. This was achieved through collection of qualitative and quantitative information from Divisions and the generation of reports that have allowed Divisions and their participating general practices to compare their performance to that of others. One of the elements of DDCQIP, reported in this article, is to investigate the uptake and growth of Division-based diabetes and CVD register–recall systems and how they are used by Divisions to monitor the quality of care by GPs.

Methods
By using the 2000-2001 Annual Survey of Divisions (Modra & Kalucy 2002) supported by mail and/or...
phone contact with Divisions across the country, we were able to identify 101 (83%) of 121 Divisions of General Practice that had a diabetes program, and 70 (58%) with a CVD program. A total of 107 Divisions had either a diabetes and/or CVD program. In October 2002 these Divisions were contacted by mail, inviting them to participate in the project in accordance with a policy framework established by the National Divisions Diabetes Program (Burns, Powell-Davies & Harris 2000). The policy framework ensured that participation was voluntary and that Division data would be used to contribute to quality improvement and feedback mechanisms.

In total 81 Divisions with either a diabetes (79) or CVD (39) program agreed to become involved in the project. Box 1 compares participating Divisions by State and Remote Rural Metropolitan Area (RRMA) index (Prometheus Information Pty Ltd 2002). Division involvement required diabetes and/or CVD program officers to respond to a survey designed to capture a broad range of information about their programs for the following periods: 01/07/99 – 30/06/00 (2000); 01/07/00 – 30/06/01 (2001); and 01/07/01 – 30/06/02 (2002). The survey included a qualitative, open-ended, free-format response section and a quantitative forced-choice section. Questions within the quantitative survey were grouped under the following headings: Division size and general practice population, program activities, Division-based register and recall systems, practice support, program management, target groups, education and quality improvement activities, and models of care. The data were analysed with SPSS Version 11 (SPSS 2001), using descriptive statistics for frequencies and distribution, the independent-samples t-test to compare means and the chi-square test for categorical data (Argyrous 2001).

### Results

#### Spread of register–recall systems

From the survey of 81 participating Divisions, 31 had an electronic register–recall system for diabetes and eight for CVD. Box 2 shows the cumulative increase in the number of diabetes register and recall systems from two in 1993 to 31 in 2002. The largest increase of diabetes systems in any one year (from 10 to 21) occurred in 1998. Register–recall CVD systems have also increased over the years, from two in 1996 to six in 1999, seven in 2000, and eight in 2002.

For Division diabetes registers, 71% (22/31) used the CARDIAB® database developed by the CARDIAB® Alliance (a not-for-profit consortium) to provide register–recall functions as well as feedback to GPs of clinical audit reports on quality of care and health outcomes (CARDIAB 2003). In addition to the 22 CARDIAB® registers, 23% (7/31) of registers were locally developed and a further 6% (2/31) were run in association with local pathology providers.

#### Active register patients and GPs

Ninety percent (28/31) of Divisions with diabetes registers were able to provide data on the number of GPs using the Division register for the period ending 30 June 2002. Over the three-year period there was an increase in the number of GPs registering diabetes patients, from 908 in 2000 to 1046 in 2001, and 1318 in 2002. The mean number of GPs using diabetes registers per Division increased from 39 in 2000 to 44 in 2001 and 47 in 2002.

Most Divisions with diabetes registers were able to quantify the number of patients with diabetes on their registers. In 2000, 25 Divisions reported 11,074 registered patients, a mean of 443 patients per Division. This increased to 15,680 patients from 26 Divisions and a mean of 603 in 2001; and 25,175 from 29 Divisions and a mean of 868 in 2002. Box 3 shows that there was a (non-significant) rise in the mean ratio of GPs using diabetes registers compared to all GPs in the Division, from 42% in 2000 to 52% in 2002.

#### Quality of care and population health monitoring

Forty-one Divisions with a diabetes program and 18 with a CVD program reported that de-identified audit results were made available to one or more of the following: general public, practitioners within practices, practitioners in different practices, practices within Divisions, and the Division Board/Executive. Box 4 shows that Divisions with a diabetes register–recall system (n=31) were significantly more likely to provide de-identified results to one or more of these stakeholders than those without register–recall systems. For example, 58.1% of Divisions with registers provided results to their Division Board/Executive, compared to 16.7% of Divisions without a register.

Many Divisions with diabetes register–recall systems reported that their diabetes program focused on particular population groups (often depending on location and Division priorities). Box 5 shows that these

<table>
<thead>
<tr>
<th>State</th>
<th>RRMA categorisation</th>
<th>% eligible Divisions involved in DDCQIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>Metro</td>
<td>84% (16/19)</td>
</tr>
<tr>
<td>Victoria</td>
<td>Metro</td>
<td>80% (12/15)</td>
</tr>
<tr>
<td>Queensland</td>
<td>Metro</td>
<td>89% (16/18)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>56% (5/9)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>86% (6/7)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>57% (4/7)</td>
</tr>
<tr>
<td>South Australia</td>
<td>Metro</td>
<td>100% (5/5)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>50% (4/8)</td>
</tr>
<tr>
<td>Western Australia</td>
<td>Metro</td>
<td>80% (4/5)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>63% (5/8)</td>
</tr>
<tr>
<td>Tasmania</td>
<td>Metro</td>
<td>N/A* (0/0)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>100% (3/3)</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>Metro</td>
<td>N/A* (0/0)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>50% (1/2)</td>
</tr>
<tr>
<td>ACT</td>
<td>Metro</td>
<td>0% (0/1)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>N/A* (0/0)</td>
</tr>
<tr>
<td>Total</td>
<td>Metro</td>
<td>85% (47/55)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>65% (34/52)</td>
</tr>
</tbody>
</table>

* N/A – Not Applicable – no eligible Divisions in this area
 included Aboriginal and Torres Strait Islander peoples, people from a non-English-speaking background, youth, older persons and lower socioeconomic groups. There was also a strong focus within programs on important risk factors such as smoking, nutrition, alcohol misuse and physical activity. When these figures are compared with Divisions without diabetes registers, they showed that these Divisions had programs that concentrated more on population groups. This finding was significant for the areas of youth, older persons and lower socioeconomic groups.

**Discussion**

This study draws attention to the existence of electronic register–recall systems within Divisions, and their growth since 1999, when Divisions were last surveyed by the NDDP (Burns, Powell-Davies & Harris 2000). This is particularly important in the light of evidence showing that register–recall systems, particularly for chronic diseases such as diabetes, are important facilitators for structured evidence-based care (Weingarten et al. 2002). They are also a potentially powerful tool for Divisions to use in promoting improved population health, as recommended by the report of the review of the role of Divisions of General Practice (Commonwealth Department of Health and Aged Care 2003).

The development of register–recall systems in Australian general practice was predicated by the development of a minimum data set — the General Practice subset of the National Diabetes Outcomes Quality Review Initiative (NDOQRIN) minimum data set. NDO-QRIN was developed by the National Diabetes Data Working Group (NDDWG) and is now recognised as the diabetes clinical meta dataset in Version 12 of the Australian National Health Data Dictionary (Australian Institute of Health and Welfare 2001; National Health Data Committee 2003). There has also been a corresponding development of a primary care cardiovascular disease minimum data set by the Cardiovascular Data Working Group (CVDWG) under the auspices of the National Heart Foundation.

It has been postulated that the increase in the number and coverage of register–recall systems may be attributed to the stimulus provided by the National Integrated Diabetes Program, established in November 2001 with the introduction of incentive payments to practices for having a disease register to help support best-practice care, and to GPs for the completion of an annual cycle of care in diabetes (Commonwealth Department of Health and Aged Care 2004; Georgiou et al. 2004). While observational data support this hypothesis, causation will be difficult to establish because of the system-wide nature of the change and the lack of a sufficient amount of rigorous baseline and post-intervention data.

This study shows that Divisions are making use of the data provided by their registers. This is indicated by figures revealing that Divisions with registers are more likely to feed clinical audit data back (generally at regular quarterly intervals) to practices and to their Division Boards or Executive. These data can include audit reports on the GP’s adherence to diabetes or CVD management guidelines, and can be used to help set priorities and monitor population health. This is particularly important in the light of recent moves by the Joint Advisory Group on General Practice and Population Health to increase the collaboration be-
There were differences between Divisions with and without registers in the targeting of particular population groups. This may reflect the limited capacity of Divisions to address many different priorities and the ‘opportunity cost’ involved. The targeting of population groups is likely to have been part of broader health service or health promotion programs targeting these groups rather than a specific focus of the diabetes program. By contrast, Divisions with registers may have chosen to target patients and practices with poor quality of care or outcomes irrespective of the population group to which they belong. This warrants further study.

Recent feedback from Divisions obtained since the completion of this study suggests that the growth of register–recall systems across Divisions over the period 2000-2002 has peaked and may now be declining (National Divisions Diabetes Program 2004). Some Divisions have been forced to relinquish their register–recall systems, reportedly because of the absence of a standard system for sending electronic messages from the practice to the Division. GPs are thus required to duplicate information they already have in the practice computer systems and the Division has to re-enter it. The sustainability of Division-based register–recall systems may therefore rely on a more functional and seamless way of transferring data from the general practice to the Division, underpinned by rigorous standards and a common terminology (Penn et al. 2004). These issues are among those that are high on the research agenda for government and general practice IT bodies (General Practice Computing Group 2004).

There is substantial evidence showing that register–recall systems can be an important tool in providing structured diabetes care using evidence-based guidelines. They have a major contribution to make in improving quality of care as well as facilitating population health monitoring, service planning and provision. The challenge is to establish and implement secure electronic standards and user-friendly messaging systems to ensure that the gains that have been made in terms of monitoring the provision of structured care for chronic disease utilising Division-based register–recall systems are not lost.

## Acknowledgments

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### References


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### 5: Groups targeted by Division Diabetes Programs using diabetes register–recall Systems

<table>
<thead>
<tr>
<th>Groups or Risk factors</th>
<th>Divisions with diabetes register % (n=31)</th>
<th>Divisions without diabetes register % (n=48)</th>
<th>X² (p) of comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal and Torres Strait Island peoples</td>
<td>25.8% (8)</td>
<td>41.7% (20)</td>
<td>2.07 (p=0.15)</td>
</tr>
<tr>
<td>Non-English-speaking background population</td>
<td>22.6% (7)</td>
<td>35.4% (17)</td>
<td>1.47 (p=0.23)</td>
</tr>
<tr>
<td>Youth</td>
<td>6.5% (2)</td>
<td>31.3% (15)</td>
<td>6.86 (p&lt;0.05)</td>
</tr>
<tr>
<td>Older persons</td>
<td>16.1% (5)</td>
<td>45.8% (22)</td>
<td>7.39 (p&lt;0.05)</td>
</tr>
<tr>
<td>Lower socio-economic groups</td>
<td>12.9% (4)</td>
<td>37.5% (18)</td>
<td>5.67 (p&lt;0.05)</td>
</tr>
<tr>
<td>Refugees</td>
<td>3.2% (1)</td>
<td>6.3% (3)</td>
<td>0.36 (p=0.55)</td>
</tr>
<tr>
<td>Smoking</td>
<td>58.1% (18)</td>
<td>47.9% (23)</td>
<td>0.78 (p=0.38)</td>
</tr>
<tr>
<td>Nutrition</td>
<td>71.1% (22)</td>
<td>56.3% (27)</td>
<td>1.73 (p=0.19)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>48.4% (15)</td>
<td>45.8% (22)</td>
<td>0.49 (p=0.82)</td>
</tr>
<tr>
<td>Physical activity</td>
<td>71.0% (22)</td>
<td>60.4% (29)</td>
<td>0.92 (p=0.34)</td>
</tr>
</tbody>
</table>


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Health Informatics and Health Information Management in maternal and child health services

Hai Phung, Lis Young, Mai Tran, Khin Than Win, Carole Alcock, Ken Hillman

Abstract
In November 1997, the South Western Sydney Area Health Service launched the Mother and Infant Network (MINET). The key objective of MINET is to develop an integrated clinical data network which has the capacity to inform and support a continuum of care for the population of all mothers, infants and children. The MINET data network integrates in-patient services, ambulatory services, and community-based services. The focus of this article is the development and implementation of MINET with reference to the crucial role of data linkage and health informatics in health outcomes/health services research.

Key words: Health information management; health care information; health informatics; data linkages; maternal and child health information systems; data management.

Introduction
In November 1997 the Mother and Infant Network (MINET) initiative was established in the South Western Sydney Area Health Service (SWSAHS), one of the most socioeconomically disadvantaged areas in New South Wales. This idea was initially established in response to the identified need for quality patient care for mothers and infants most at risk of adverse health outcomes (Phung et al. 2001). The continuum of care for the child has three distinct phases: foetus, infant and early childhood. Consequently, the range of services available for mothers and children in all these phases is one of the most diverse within the healthcare system. The main objective of MINET is to develop a continuum of care for all mothers and infants living in SWSAHS across in-patient services, ambulatory services, and community-based services.

In information systems and health informatics terms, MINET is a database containing health data on infants and children in the SWSAHS from the prenatal period to school age (0 - 5 years). It has been progressively evolving since the inception of its core, the Ingleburn Baby Information System (IBIS), in 1994-95. It is intended that MINET will ultimately hold all health information, together with relevant psychosocial information, about each mother and her infant and child in the Area Health Service from birth to 5 years. The information contained in the database is already being used to enable better coordination of health services and to support the identification of at-risk mothers and children, and for the provision of targeted early intervention in an area with considerable socioeconomic disadvantage. The database supports evaluation of services, review and reconfiguration of services where necessary to achieve specified improvements in outcomes, or to provide better access for people with identified risk. The challenge to the MINET clinical data network is the development and the sustainability of the chronological logic when linking complex data sets dispersed in time. The main aim of this article is to describe the development and implementation of MINET with reference to the crucial role of data linkage in health outcomes/health services research.

The setting
The SWSAHS covers an area of 6237 square kilometres and has a rapidly growing population of over 700,000. SWSAHS incorporates six Local Government Areas and the Shire of Wingecarribee. There are significant pockets of socioeconomic disadvantage within southwestern Sydney compared with the New South Wales average (SWSAHS 2000). The population of SWSAHS is younger, with a higher proportion on low incomes. The prevalence of recent migrants and people from non-English-speaking backgrounds is also higher compared with the rest of NSW.

Background and conceptual framework of MINET
Early childhood – a critical time
Early Childhood Services are a key component of Community Health Services. They target infants, toddlers and young children from the time of discharge of mothers and their new babies from hospital to the child’s entry to school at or about the age of 5 years. Early Childhood Services are based in the Well Baby Clinics. Parent Advisory Services are a particularly important service provided by the Early Childhood Nurses.

In recent years, early childhood has become the focus for attention and activity aimed at developing adolescents and adults with robust physical and psychosocial health. The prenatal period, infant and early childhood periods are seen as critical for the promotion of good health and the development of personal characteristics, which are protective against many of the intractable and insoluble problems experienced in adolescence and adulthood (Rantakallio 1983; Halldorsson et al. 1999). Adverse physical and psychosocial experiences in early childhood have been implicated in poor educational outcomes and the development of physical and mental health problems, substance abuse and other damaging social problems (Keeping et al. 1996; Zuckermand & Beardslee 1987; Morrison et al. 1989). It is believed that intervention in families with problems can improve the situation for the parents and children and improve the probability of good outcomes in adolescence and adulthood (Fried 1993). As a result, health services are increasingly focusing on...
the importance of early identification of risk and early intervention. In order to be able to do this, it is necessary to develop reliable indicators of risk from the time pregnancy is confirmed, and it is also very important to identify effective models of early intervention in a range of settings and communities. The availability of good quality, comprehensive, longitudinal information is essential for these tasks.

**Coordinating health services for mothers, infants and young children**

The difficulty of providing a coordinated and comprehensive healthcare service through Australia’s fragmented healthcare system is well recognised. Primary healthcare services are delivered by general practitioners, public hospital emergency departments and public community health services with little or no coordination of activity. The delivery of specialist or secondary health services is similarly disjointed, with services being provided in private medical practice and through the public hospitals. Even within the public healthcare system, there has not always been sufficient communication between antenatal healthcare, maternity services and early childhood health services. It is possible that, following delivery, mothers and babies may fail to make contact with the healthcare system at any point and that this may not be recognised by service providers. There is evidence that it is the most disadvantaged or at-risk mothers and babies who are most likely to fail to attend general practitioners or Early Childhood Services. It is important that there is good communication between different health service providers seeing the one patient so that their efforts can be coordinated and that duplication or gaps in service delivery are prevented. It is therefore important to find a cost-effective and simple way to separate systems while maintaining the operations. Better integration of all the health services being used by a mother and her infant also allows for the different service providers to identify the most appropriate person or group to supply services in response to identified need, and for coordination of the efforts of all providers in the interest of that mother and her child (Kahn et al. 1999).

**Development of MINET**

MINET has its origins in the Ingleburn Baby Information System (IBIS). The development of this database grew in 1995-96 from of the concerns of six primary care nurses at the Ingleburn and Campbelltown Early Childhood Centres. These nurses needed better information in order to be able to identify issues of access and health outcomes relating to their services and to evaluate those services. The information collected at that time included the patients’ postcodes. By examining the postcodes of the mothers they were seeing in the postnatal period, the nurses recognised that they were mainly seeing mothers and babies from the more socioeconomically advantaged parts of their sector. The data also showed that by the age of three months 60% of the infants registered with Well Baby Clinics had stopped attending. Only 20% of the original registrants had a six-month review. This finding led to consideration of the location of the Well Baby Clinics. The decision was also taken to develop a more comprehensive data collection system, which would provide more useful information for the review of services. The need for improved data collection was addressed by collaboration between the Primary Health Nurses and the Health Outcomes Resource Team. The aim was to support the Primary Health Nurses in structuring and standardising the capture of information as part of routine clinical practice in Well Baby Clinics. One aspect of this development was that technically it was a robust, flexible and low cost solution. Because it used scannable medical records based on technology using Optic Mark Recognition and did not require large numbers of data entry operators, it was likely that it could be sustained despite staffing changes and budget crises. Electronic capture of large volumes of clinical information in real time was relatively easy and reliable. Successful electronic medical record implementations share the ability to improve the quality of care by making clinical data readily available and offering decision support (Khoury 1997).

IBIS Version 1 was developed in 1995. Each record consisted of four pages of baseline data and two pages of follow-up information. Clinician involvement with and ownership of the database has meant that there has been ongoing review of the usefulness of the information being collected, and that additional information requirements have been identified from clinical experience and addressed over the years in three revisions. In 1997 IBIS underwent minor modification with the addition of a small number of descriptive items, such as the educational attainment of the mother. IBIS Version 2 records still comprised four pages of baseline data and two pages of follow-up information. The data collected continued to be purely descriptive. IBIS Version 3 was developed in 1998, at which time the database underwent a major revision and paradigm shift with the introduction, on a trial basis, of psychosocial questions.

The database is currently undergoing yet more major modification to incorporate information on social health. It will be structured differently from the first three versions, with a generic core and additional modules for mothers and babies in high-risk groups. The modules currently being developed relate to non-English-speaking women, Aboriginal women, young mothers (< 18 years) and drug-dependent women.

IBIS is now used to provide Primary Health Nurses working in Early Childhood Services with information with which to review, evaluate and, where necessary, modify the services they provide. The IBIS information architecture and underlying principle of clinician ownership have created an information culture within the community-based services for mothers and their infants and children within the SWSAHS. As a result of using IBIS to assist them to improve their everyday work, the Primary Health Nurses have begun to recognise a new dimension to their role, that of the information worker. In the clinical context an information worker is a clinician who is able to access and use information pertinent to the equality and outcome of the care he or she is providing.

The use of IBIS at a sector level allows significant differences between the sectors in relation to particular health issues, such as rates of smoking in preg-
nancy or breast-feeding, to be identified. This, in turn, allows programs to be developed and priorities to be set that are specific to the needs of the mothers and children in each sector. It also allows for benchmarking between the different sectors and for exploration of the reasons for the differences observed.

The IBIS database now holds baseline data on more than 10,000 babies and their mothers, and of over 50,000 visits to health services by these infants and their mothers. There are more than 4,000,000 data items on the database.

Key issues associated with the successful development of IBIS are:
- it has clinician development and ownership
- there are real-time data flows
- it contains multipurpose data of high quality which have been validated against national standards,
- it has robust, flexible information architecture with the capacity to modify and upgrade the system to reflect best practice for Well Baby Clinics.

Data linkage and health outcomes

Towards a public health approach

By 1997 the public health potential of IBIS was becoming apparent at the Area level, and work to expand its scope and utility by connecting it with related data sets within the SWSAHS was commenced. The importance of the prenatal period to the later health of mothers and babies is now well recognised, and the advantage of creating links between IBIS and other Area databases containing information on the prenatal period and the confinement could be appreciated. Such an approach would support the early identification of at-risk mothers and babies and the implementation of strategies to ensure their access to appropriate early childhood services, such as Well Baby Clinics and Parent Advisory Services.

Parents may seek health care for their infants and small children from one or more of a range of public health service providers within SWSAHS. It is important that services for this group should be well coordinated, and that any health service provider seeing a young child should have access to relevant information concerning that child. Thus, it also made sense to consider linking the IBIS database with data sets held by other public health service providers, such as hospital emergency departments and public hospital inpatient and outpatient services.

The outcome of these considerations was the decision to create an Area-wide clinical data network integrating all of the services available to mothers and infants to capture all health information about the children living in SWSAHS from conception to school entry. This would be known as the Maternal and Infant Network (MINET). MINET would increase the system capacity for accessing and using information. In turn, this would inform the quality of care, with a dual emphasis on achieving improvement in population health in SWSAHS, while maintaining a focus on the individual mother and infant and the outcomes of the services provided for them.

The technical objective was to develop and implement a clinical data network, which aimed to integrate all information on healthcare over a continuous period which spans the three important developmental stages for the mother (pregnancy, confinement and parenthood) and infant (foetus, infant and toddler/pre-school child).

It was apparent that any database development would need to support the translation of theoretical epidemiological knowledge into actual clinical practice. The main strategies identified to do this were accurate data collection, sharing of those data across all points of healthcare delivery and, where the need was identified, re-engineering the system to address health problems.

It was determined that MINET will ultimately hold information on every child from conception to the age of 5 years born to the residents of SWSAHS. With about 12,000 births per annum in the Area, once it reached steady state the database would hold in excess of 60,000 active records at any time. Thus, for most of the Area’s children, MINET will eventually hold information on the prenatal period, the confinement, the period of infancy and the period of childhood up to 5 years of age.

Information will be collected, entered and analysed at a Sector level in order to support clinical practice. At the Area level it will be possible to develop policy and plan strategically for population health based on information derived from the whole database. De-identified data from the database will ultimately play a very important role in clinical and health service research. It will support better integration and coordination of health services for the target group and inform efforts to improve access to health services for infants and children across a large and disadvantaged population. It will also assist the Area to better target population health programs.

Another example of the usefulness of linking databases is to be seen in the identification by Early Childhood Nurses at Ingleside of a successful solution to the problem of matching services to need. Further consideration of the problem by the Early Childhood Nurses led to a decision to introduce home visiting by Early Childhood Nurses during the antenatal period for those mothers and infants considered to be most at risk of adverse outcomes.

Another example of the usefulness of linking databases is the application of Geographic Information Systems (GIS). Analysis of birth weight data using spatial analysis (GIS) demonstrates significant variation by small area. The birth weights of the individual infants are now indicators of infant health at a population level (the capacity for monitoring health gain for the population of infants). GIS is being used increasingly within epidemiology and health services research; it is an important tool within MINET. Data on individual clients are geo-coded to the defined geographical area where the client lives. This geographical unit may be a Collector District, a Suburb or a Local Government Area (LGA). The process, as in this case, is that Primary Health Nurses collect information on the socioeconomic profile and the family characteristics of their clients (mothers and their infants) as part of routine service delivery. Combining this information and health-related data, an association between the risk behaviour of the mother (maternal smoking) and the infant’s physical health (birth weight) can be ex-
explored. Using geo-coding to overlay this health information with other information, particularly broad socioeconomic data such as 1996 Australian Census data or Socioeconomic Index for Area (SEIFA Index), allows the spatial distribution of this association to be geographically mapped.

This capacity of GIS to communicate complex outcomes of clinical care ‘at a glance’ has become a powerful means of providing feedback on outcomes of care to clinicians within MINET. GIS has the demonstrated capacity to take the final step towards ‘closing the loop’: feeding clinical information back to the clinicians, who can effect change (e.g., restructuring work practices, Health Systems Reform, Quality Improvement). Analysing the data flowing from the MINET integrated clinical data network using GIS has made it possible to identify suburbs within SWAHS with a high prevalence of smoking in pregnancy, low birth weights and low socioeconomic status (SES). More importantly, using the results which display the geographical distribution of maternal smoking, pre-term birth and low birth weight, a preliminary hypothesis of an association between smoking in pregnancy, SES and adverse pregnancy outcomes can be generated. Linking databases also allowed the Early Childhood Nurses to work with women who were having difficulty with smoking minimisation or cessation during pregnancy.

It was decided that MINET would be developed by a collaboration between the Simpson Centre for Health Service Innovation, Liverpool; the Caroline Chisholm Centre for Women and Babies, Liverpool; the Centre for Health Equity, Training, Research and Evaluation, SWAHS; the Epidemiology Unit, SWAHS; and the Health Outcomes Resource Centre, Macarthur Health Sector, SWAHS. The need for dedicated staff, together with a base for those staff, was met by locating the development team in the Simpson Centre. A multi-disciplinary research team with expertise in Health Informatics, Communication, Population Health, Psychosocial Health, Clinical Effectiveness and Epidemiology was formed to undertake the development work.

### Practical and technical aspects of the development of MINET

A staged approach to the development and integration of different sites and their data sets across SWAHS into MINET has been adopted. As a result, MINET currently contains a range of data sets of differing magnitude according to when they were commenced or incorporated into the database. Quality data elements can support clinical decision making and can improve the clinical processes. Interoperability and comparability of the health data are key factors in healthcare data processing. Better integration of data can improve the accessibility, accuracy, comprehensiveness, consistency, currency, definition, granularity, precision, relevancy and timeliness of the data. The develop-
Development and implementation of MINET data sets are adjusted and modified to suit the readiness of the clinicians to engage in defining and refining their own information requirements. Data will be gathered as a by-product of operational systems to support research into improved promotion, prevention and treatment, and to provide a foundation for public health initiatives generally, while at the same time maintaining privacy and confidentiality (National Health Information Management Advisory Council 1999).

Integrated uniform interfaces data link electronic medical record systems are in use all over the world (Neame 1997; Fraser et al. 1997; Kohane et al. 1996; Tange et al. 1998). The conceptualisation of MINET linking different databases presented some interesting technical challenges. Acknowledging the need to share information about clients at any point in the spectrum from conception to five years of age among multiple providers impacted on the IBIS information architecture. Linking the information across data sets embedded in technically and geographically dispersed databases became a priority.

The MINET health informatics model is developing a methodology which will allow information captured and stored on technically disparate databases to be linked to enable the tracking of short-, intermediate- and long-term outcomes for mothers and infants across the first five years of life (Roos et al. 1986; Wadja & Roos 1987; Gill et al. 1993). Links have been or are being developed between IBIS, the obstetrics units (antenatal, birth and postnatal information), the neonatal intensive care unit, the hospital emergency departments, and hospital inpatient and outpatient units.

There is a well developed and validated database for maternity services in SWSAHS (Obstetrics Package). Data collection commenced in the Liverpool Obstetrics Service in 1994 and in the four remaining obstetric units within the Area during 1998. The Obstetrics Package now captures baseline information for all antenatal clients utilising public antenatal clinics or GP Shared Obstetric Care. This database is a legacy system and is mainframe based. Collection of other related data has been undertaken for a number of years in various hospital units in SWSAHS.

Currently, the Simpson Centre, in collaboration with the School of Information Technology & Computer Science at the University of Wollongong, is developing a LinkIT System to link all of the disparate databases within the MINET data system. The underlying principle of the system is to effectively address the integration of health informatics data from different sources. This is highlighted in the diverse data collection system, ranging from OBSTET, IBIS and a number of decentralised methods practised by individual community health service sites (Figure 1).

The aim of this system is to address these wide scopes of data sources and implement an indexing scheme whereby health informatics and statistics can be generated on the population residing in the SWSAHS.

The following issues are challenges for developing the LinkIT System:

- **Disparate data sets:**
  - The data collected contain a set number of required fields.
  - Other fields determined and controlled by another organisation (e.g., OBSTET data).
  - Forms for each service outlet are different.
  - Forms within each outlet generally are revised and changed annually.

- **Multiple identifiers:**
  - Patient may have different identifiers at different sites.
  - Mother's identifier may not be recorded with infant's identifier.

Essentially, the LinkIT software system can be thought of as an engine (Figure 2) that does the following:

- **Translation:** The process that effectively addresses the various data sources and translates them into a standard format.
- **Linking:** Any system that has a number of unstructured inputs needs an indexing methodology. Linking addresses the core issue that is elementary in the problem of health services innovation delivery being experienced by the Simpson Centre.

The conceptual design of the link system can be visualised as containing several modules, including one rule governing the module (Figures 3 and 4). There are four modules in the LinkIT System: Translation Module, Rule Set Module, Linking and Matching Module and Query Module. The modules are cohesive in their design and will act as independent entities. Each module encompasses an engine, which performs the major processing task for that module, and the output from the module or engine will be stored in a file. This caters for the dynamic aspect of the link system, where, for example, the linking can be performed on any stored translation file.

The linking module is the crucial component of the LinkIT system. Given the data layouts for all data sets, the matching rules and the raw data from various data sets, the primary function of the linking engine is to link a patient record (using local identifier) in the data.
set and generate a Shadow Unique Identifier (SUI). Each record is sequentially compared to all of the other records to determine which records are for the same patient. To determine if the records match, powerful heuristic rules specified by the user are used. Once the match has been found, the linking engine saves the results with that patient's SUI, which will be used in the query module.

This system provides a very useful way to review, check and simplify the input files to the matching system, and also does a very good job of matching records in a deterministic matter; however, the probabilistic matching has some drawbacks, as the matching field comparison is binary. This means that two fields qualify if they have the same ordered sets of characters, but are not otherwise equal. A very simple matching algorithm, where one record is crossed with all other records, is used, and has a very lengthy matching process when files are larger than over 1000 records.

Clinical needs take priority over IT considerations

The MINET group has deliberately given priority to clinical needs rather than system or technological needs in all its decisions. It has set out to ensure that the system should not be driven by the Information Technology, but rather by the needs of clinicians for timely, high quality and relevant information. Much effort has been applied to ensuring that the data entered into the system are accurate and relevant. The use of scanning technology makes it easier to ensure that data entry is timely.

Every Community Health Centre in SWSAHS has a computer server with information stored according to privacy and confidentiality principles and practice. The administrative responsibility for the data lies with the nursing officers, who are assisted by Information Technology staff. Cleaning, coding and analysis of data is undertaken by the Simpson Centre. The data are aggregated at the Area level by the Simpson Centre, which is the custodian of the data at the Area level. The cleaned data file is returned to the sector by the Simpson Centre and de-identified data are archived by the Centre.

The critical success factor for the MINET integrated clinical data network is the ability to identify and embed generic cores of information for each of the health domains, such as biological health, psychological health and social health. The need for a core data set must be balanced against the clinician’s duty to provide assessment and treatment or support that is socially sensitive and culturally specific. Identifying clinicians’ needs for what information needs to be shared when has facilitated the development and implementation of critical pathways for all of the three health domains. Sector-based data items and definitions may be added to ensure that specific indicators capture the uniqueness of the needs of the population within individual sectors, as well as the kinds of services being provided. The critical pathways are subject to a clear change management control process. A trail is kept to ensure the history of the development of the data sets is available to inform the evaluation and research activities relating to MINET.

Future directions

The development of MINET has meant that an area of healthcare with important and natural connections and interactions has been organised in such a way that every intervention within the continuum of care for a particular patient can be informed by all of the relevant information already collected in any health setting about that patient. This has important implications for the coordination and comprehensiveness of care as well as for quality management. It will provide a practical framework within which health services can be accurately and sensitively targeted, patient-focused and integrated. The information available to health service providers will support proactive intervention with women and infants or children with identified risk. It will be possible to really understand the 'continuum of care' as it is experienced by the patient, and to do things differently where it is apparent that this would be associated with better outcomes.

Conclusion

In recent times, early childhood has become the focus for attention and activity aimed at developing adolescents and adults with robust physical and psychosocial health. It is thought that investment in services for mothers and their young children may have significant
consequences in terms of reduced adolescent and adult rates of mental illness, substance abuse, suicide and crime. It is understood that the South Western Sydney Area Health Service may so far be the only health service in Australia with an extensive community-based health database linked with databases containing hospital outpatient and inpatient information. MINET is a very valuable health information tool which assists health service providers to be better informed and to improve the appropriateness, quality, effectiveness and efficiency of the health services they provide for mothers and their babies and young children. The benefits sought from the project are mainly for the babies and young children of SWSAHS and for the adolescents and adults they will become. There are also considerable benefits for the clients of Early Childhood Services, and for health services in general, arising out of better integration of public health services, improved coordination of services and reductions in duplication and gaps in service provision.

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Electronic health record system risk assessment: a case study from the MINET

Khin Than Win, Hai Phung, Lis Young, Mai Tran, Carole Alcock, Ken Hillman

Abstract
This article discusses the risk assessment of a health information system. A case study was conducted at the South Western Sydney Area Health Service to examine the potential risks of the Maternal and Infant Network (MINET) health information system using Failure Mode Effect Analysis (FMEA). FMEA was conducted by utilising safety attributes identified by the authors. Potential failure modes of the system were identified by the study. From this study, it can be concluded that FMEA is an appropriate risk-assessment method for MINET.

Keywords: Health information; risk-assessment; safety.

Introduction
A thorough literature search indicates that there has been little study to date on risk-assessment methods for electronic health record systems. Although there have been assessments of project management and security risk to systems, there has been no safety risk assessment. The main objective of this study was to identify possible risks in a health information system (the Maternal and Infant Network: MINET) using Failure Mode Effect Analysis (FMEA). In particular, this article describes a risk-assessment case study conducted at the Simpson Centre for Health Services Research. Identifying possible failures from the system could mitigate or prevent its potential failure, while also enhancing the safety of the system.

Background
The report To err is human: building a safer health system (Kohn et al. 2000) emphasised the importance of safety in healthcare. There have been many reports of medical misadventure; for example, 98,000 Americans die each year as a result of preventable medical errors (Kohn et al. 2000). The Institute of Medicine estimates the number of lives lost to preventable medication errors alone represents over 7000 deaths annually, which is more than the number of injuries in US work places (Institute of Medicine 2000). The 1998 National Survey of New Zealand has documented that 4.5% of all hospital admissions were associated with highly preventable adverse events (Davis et al. 2001). In Australia, more than 55,000 patients become disabled and as many as 18,000 unnecessary deaths occur each year due to medical errors (Weingart et al. 2000).

As electronic health record systems are part of the overall healthcare system, it is important to ensure that electronic health data are secure and dependable in order to reduce the risk of occurrence of medical errors. The identification of safety requirements of electronic health record systems would also help to reduce errors (Win et al. 2002). Exploring undesirable events that can occur from electronic health record systems would assist in identifying risk.

There are specific risk-assessment methods available for different systems. With proper risk assessment, potential risks can be identified and avoided, resulting in a safer health record system, and ultimately in safer healthcare. Awareness of risk and safety requirements is important, as it will assist in re-engineering of the appropriate electronic health record systems for healthcare organisations.

1: Safety attributes of EHRs

- Identification
  1. unique patient identification
  2. patient's name and identification on every screen
- System security
  1. local area network/internet
  2. encryption
  3. authorization
  4. firewall
  5. access level
  6. access list
  7. antivirus
  8. audit trail data
- Privacy
- Confidentiality
- Consent
- Disaster recovery
- Storage
- Back up
- Retention period
- Data standards
- Data interoperability
- Data integrity
- Medication
  1. drug allergy
  2. drug potentiation
  3. calculation of dosage
- Alerts
  1. allergy
  2. drug potentiation
- Data entry
  1. data verification
  2. data validation
  3. algorithm such as age and weight check
- Attributes of data quality
  1. availability
  2. accuracy
  3. completeness
- System quality
  1. usability
  2. accessibility
  3. ease of use

Safety and dependability
Drawing on the relationship framework for dependability and data quality and the literature review under-
taken, we have identified safety attributes for Electronic Health Records (EHRs). However, as EHRs can have different purposes for different information management and systems, safety attributes may also differ (Schloeffel & Jeselon 2002; Shiffman et al. 1999). Attributes of dependability include availability, reliability, security and safety (Sommerville 2001).

**Data quality**

Data quality has been defined as ‘the totality of features and characteristics of a data set that bears on its ability to satisfy the needs that result from the intended use of the data’ (Arts et al. 2002). Wherever possible, data quality should not be compromised, because low quality health data will have a significant impact on decision-making processes on information management.

**Data quality and dependability**

Box 2 presents characteristics involved in healthcare data quality. It shows how data quality is related to the dependability and lists appropriate measures needed to ensure data quality.

**Electronic Health Record Systems (EHRs)**

A Health Information Network for Australia identified the electronic health record as:

＞＞＞ an electronic longitudinal collection of personal health information, usually based on the individual or family, entered or accepted by health care professionals, which can be distributed over a number of sites or aggregated at a particular source, including a handheld device. The information is organised primarily to support continuing, efficient and quality health care (A Health Information Network for Australia, 2000).

Humphreys has defined health records which are used in health services research for monitoring public health and outcomes as ‘population health records’ (Humphreys 2000). However, these records are also used for data acquisition, record keeping, communication, integration, surveillance, information storage and retrieval, and data analysis. These attributes also apply to EHRs, as defined by Perreault and Wiederhold (1990); therefore, MINET can be categorised as one of the EHRs.

**MINET case study**

The case study was conducted at the Simpson Centre for Health Services Research, from the Maternal and
Infant Network (MINET) database. MINET was selected as a case study for this research as it involves different electronic health data from different sources. The MINET database contains health data on infants and children in the South Western Sydney Area Health Service (SWSAHS) from the prenatal period to school age (0-5 years). MINET involves community-based data from the Ingleburn Baby Information System (IBIS Database) and obstetric and gynaecological data (OBSTET) from the hospital data system. MINET caters for all persons living in the SWSAHS. These data are important for public health and health service research, because the prenatal and infant and early childhood periods are critical for the promotion of good health and the development of personal characteristics for adolescence and adulthood (Halldorsson et al. 1999). It is also important that the databases are accurate for the purposes of health service research. As part of MINET, OBSTET data are downloaded to the Simpson Centre for Health Data Research only and Simpson Centre does not have any control over how the OBSTET data are collected and processed.

Currently, IBIS Version 4 is being used in the SWSAHS. IBIS uses Optical Mark Recognition (OMR) to capture data. IBIS is part of a Local Area Network, which enables sharing of information with other service points for mothers and their babies. There are two types of data for IBIS: baseline and follow-up data. The IBIS baseline form is used for the first visit at the baby clinic and the IBIS follow-up form is used for subsequent visits.

**Methodology**

Different methods have been explored in order to identify one that is appropriate for risk assessment of EHRs. Failure Mode Effect Analysis (FMEA) was proposed because risk assessment conducted through this method involves identifying the possible failure modes of the system before failure can occur (Win, Cooper & Alcock 2004). An alternative method of risk assessment is root cause analysis, for example fault-tree analysis; however, this method identifies the source of error after the event. Fault-tree analysis is more suitable for retrospective studies of systems in which adverse events or errors have already occurred, or to track back to the root-cause conditions. With FMEA, failure mode can be predicted and action taken to prevent the condition from occurring in the first place (Win 2004). It is clearly important to identify any possible risks first to ensure the system’s safety, so FMEA is a more suitable approach compared with root-cause analysis in this case.

**Failure Mode Effect Analysis (FMEA)**

Failure Mode Effect Analysis is a structured approach to the prediction and identification of the consequences of failures in a system. To conduct an FMEA, the processes involved in the system can be subdivided into sub-processes and possible failure modes of these processes. Upon identification, their potential effects can be estimated and analysed to prevent the possible failures.

**Results and discussion**

Possible failure modes of MINET can be predicted as illustrated in Box 7.

**3: Level of probability**

<table>
<thead>
<tr>
<th>Probability</th>
<th>Low: rarely or never occurs</th>
<th>Medium: occurs occasionally or few times per year</th>
<th>High: occurs regularly or weekly basis</th>
</tr>
</thead>
</table>

**4: Level of severity**

<table>
<thead>
<tr>
<th>Probability</th>
<th>Low: rarely or never occurs</th>
<th>Medium: occurs occasionally or few times per year</th>
<th>High: occurs regularly or weekly basis</th>
</tr>
</thead>
</table>

**5: Risk/hazard score**

<table>
<thead>
<tr>
<th>Severity Probability</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Medium</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>High</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
</tbody>
</table>

To conduct risk assessment of MINET using FMEA, severity and probability of identified risks need to be determined. Definition of severity and probability level are presented in Boxes 3 and 4. Risk or hazard score can then be determined. This is shown in Box 5.

Processes involved in the MINET database are described in Box 6.

**6: Processes involved in MINET database**

1. Source of data
   - Face to face data collection
   - Fill in the form (IBIS)
2. Scanning
   - From form into the text file using the scan software
3. Download
   - From text file to access database using Microsoft Access

**7: Possible failure modes from processes**

1.1. Forms not marked accordingly
1.2. Loss of forms
1.3. Duplication of MRN
1.4. Same MRN for different patient
2.1. Data cannot be scanned as forms are printed malaligned
2.2. Overwriting existing file
2.3. Disruption of scanning during the process
3.1. MRN cannot be matched
3.2. Files cannot be linked
3.3. File corrupted
data cannot be matched
Potential effects, severity, probability and hazard score of each potential failure mode are described in Box 8.

These identified hazards were notified to the authorised personnel responsible for the system and necessary actions were identified.

The following section presents the analysis of possible failure modes identified in Box 7. These include *Forms not marked appropriately* and *Missing forms*. Forms that are not marked appropriately could be ruled out at the time of the scanning process. This can be due to human error, and the Simpson Centre needs to trace them back to the Community Health Centre. Patients’ data are filled in manually at the Community Health Centres and compiled to scan.

*Duplication of MRNs* and *Same MRN for different patients* are also possible failures in the source of the data, as identified in Box 7. It is noted that different medical record numbers (MRNs) are used in different services. In addition, maternal and infant MRNs can differ, leading to the possibility of incorrect association of maternal and infant MRNs; for example, parents may be unmarried, or a mother might not necessarily change her surname upon marriage, in which case the mother’s and infant’s surnames will be different. In some cases, a mother’s surname could be changed from the previous childbirth history as a result of subsequent marriage or divorce. Duplication of MRNs for the same person at different services or at the same service is always a possibility, and several problems could result from wrong linkage of the data. Data may be linked to the wrong patient at the time of analysis and there can be errors in predicting health indicators.

Possible failure modes during scanning and downloads have been identified in Box 7. Scanning is done in batch processing, and some documents could be misplaced and lost during this process. To avoid this problem, it is advisable to have computerised data entry at the point of care.

Files cannot be linked if the system is unavailable due to such factors as power loss or application failure. The centre has not yet experienced application failure, and, as it is not a ‘real time’ system, power loss for a limited period is acceptable. There would also be loss of data should the data file be corrupted, and the Simpson Centre regularly backs up data so that this can be prevented. There is also a high probability that data from different databases cannot be matched properly, as different versions of IBIS have different data units. These problems need to be addressed at the time of form download and during statistical analysis.

Wrong data linkage can lead to incomplete and inaccurate data, and in the case of clinical data this could result in a significant and immediate impact on the patient. The Simpson Centre uses aggregated data for statistical analysis, and records not matched perfectly are excluded from the analysis. Disruption may occur in the scanning process due to mechanical problems with the machine, power failure, or inexperienced scanning operators. When detected during the scanning process, the problem can be rectified to minimise impact on the system; the only impact would then be on the scanning task the person was performing at the time.

The focus of the Simpson Centre database MINET is on maternal and child health. The IBIS manual clearly explains the format of questions, why the data are collected, what the data are about and standards for completion. IBIS data have been considered for completeness, legibility and integrity of information. Data are gathered with clear understanding of future uses. Box 8 illustrates the FMEA of different processes. With FMEA, possible failure modes have been identified and predicted for different processes involved in MINET. However, as security of health data is important because it contains sensitive information relating to a person’s health, risks regarding security, privacy and confidentiality of the system need to be explored. These failure modes are identified in 4.1 and 4.2 of Box 8.

**Security, privacy and confidentiality**

Security of EHRs could be implemented through the physical security of the system; for example, by providing authorised access only to the user, and by application of firewall and encryption technologies. Assessment of MINET’s information security and vulnerability to threats indicates that, because the system is located in the Intranet, anti-virus software was installed on all servers, desktop and laptop computers, and there are both internal and external firewalls to protect information. In addition, there is an audit trail configured to log all transactions. Log file analysis is carried out daily and reports of unusual, inappropriate or anomalous activities are sent to the system administrator. The system guards against unscrupulous attack to the system.

MINET ensures the confidentiality and privacy of the health data: each patient consents to disclose their information for research purposes; there is an authenticated log-in to the system; there is a policy regarding access; and there is a list of users who could access the system. User access level is predetermined and only authorised users can access the system. Access control is available for system usage and user responsibilities; a user group for MINET determines the access levels. The system provides a password management function to allow password changes to be announced. Individuals have their own passwords, and it is not possible to eavesdrop upon account authentication. To avoid breach of confidentiality, and because it is difficult to trace, guest or anonymous log-in is not allowed. Passwords include a combination of alphabetic, numeric and special characters. A first-time password is transmitted securely.

MINET is a distributed system, and data files and the database are stored on the server. Back-up is performed at the Simpson Centre and the other community health service centres. Back-ups are stored securely under lock and key, and the Information Service Department has data back-ups on tapes, while the Simpson Centre has data back-ups on hard disks. The Simpson Centre uses de-identified data for research purposes, thus maintaining patient confidentiality. The Centre follows the *Database and data extracts policy and guidelines* from the South Western Sydney Area Health Service.
Conclusion

The Simpson Centre uses data mainly for health services research, an important role, as it could affect public health research in, for example, healthcare processes, disease patterns, disease surveillance, prevention of disease and health promotion. Data from MINET are used for health services research, and conducting a risk assessment study has had a positive effect, as inaccurate or incomplete information can have an impact on health outcome indicators. It is very important that electronic health data from MINET are complete and accurate, as MINET is used for data collection, analysis and interpretation of data for early intervention, planning, prevention and evaluation.

Although MINET data are health data, it can be seen that not all safety attributes identified are appropriate for this system. As MINET is aggregated data and it is used for de-identified data, the requirement that a patient’s name and identification be displayed on every screen is not applicable to MINET. However, it can be concluded that unique patient identification is very important for MINET, as there could be different potential effects (as described above) if a patient could not be uniquely identified. Alerts and reminders could assist in follow-up and referral for community health, but they do not have a significant impact on the health service research data for MINET. They could, however, be appropriate for disease surveillance health research in different aggregated data sets. Data regarding medication and dosage could be important for maternal and child health data in community care; for example, errors in a child’s medication dosage could result in a serious outcome. Including information regarding these data will add value to the system.

As for all health informatics systems, issues of privacy, confidentiality and security are important in MINET. Those involved with data entry and processing are given a clear explanation of privacy policy and are therefore aware of confidentiality concerns. Access level is decided by the user group, and the administrator needs to set the level accordingly to ensure the privacy of data.

As data from a number of sources are used for research, common standards are important for different databases. Completeness of data is essential for MINET databases, as incomplete data will result in errors in statistical analysis, which will in turn have an impact on healthcare indicators. FMEA has identified possible failures of the system and is therefore an appropriate risk-assessment method for the MINET.

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Best practice for the design of forms

Leanne Zammit and Doreen Bauer

Abstract
A major objective following the 1997 amalgamation of three health services in Ballarat, Victoria, was the integration of the three discrete medical records into one system. This article describes the multidisciplinary collaboration, under the leadership of health information managers, that played a critical role in this project. Standards and best-practice evidence were used to inform new guidelines for forms design and development. This was complemented by another project to develop best-practice guidelines for producing consumer information with a focus on readability. Issues related to designing electronic forms were considered, but further work is required so that best-practice principles are available to guide designers. A sub-committee has been established with delegated authority to approve all forms. Initial evaluations have demonstrated marked improvements in the quality of new and revised forms.

Key words: Medical records; forms design; best practice; quality.

Introduction
Forms are an integral part of medical records and are intended to collect reliable and valid information. The information retained in the medical record is used to facilitate communication between healthcare professionals in their provision of continuing patient care, ensuring an accurate chronology of that care. The information in the medical record may be used also for a variety of legal purposes, research, clinical and related education, evaluation of services and billing for financial reimbursement of the services provided.

Information management is a comprehensive process which should be based on standards, laws, regulations, business practices, and technologies (Patient Medical Record Organization 2000). Information reliability and validity are enhanced by the application of agreed standards to the organisation’s medical record data collection plan (Abdelhak et al. 1998). While a good deal of the information retained in a medical record is, or should be, shared with all healthcare professional disciplines contributing to the care of an individual patient, many data collections are specific to particular disciplines. A lack of infrastructure standards may limit the ability of different elements to communicate with one another.

The design, implementation, and management of forms should be a collaborative process, including at least health information managers, information systems personnel, materials managers, patient care service providers, and quality improvement advisers (Abdelhak et al. 1998). Forms design is a skilled activity, principally within the domain of health information managers, who should have a clearly designated leadership role. Forms design guidelines, based on agreed standards and best-practice principles, will assist all participants in the collaboration needed to reach effective solutions.

This article describes current progress in the development of standards and guidelines to improve the quality of medical record forms. This work was supported by another project to improve the quality of consumer information being used by Ballarat Health Services.

Background
Ballarat Health Services was formed in 1997 as a result of the amalgamation of three previously independent health services: the Ballarat Base Hospital, the Queen Elizabeth Centre, and Ballarat and Grampians Psychiatric Services. Each had well-established medical record systems which had evolved under the leadership of qualified health information managers in response to the specific needs of the service. Most permanent medical record forms were designed in accordance with Australian standards, but many forms attested more to the preferences of disciplines and individuals than to best-practice principles. Some forms had been borrowed from other health services, with the organisation’s name overprinted, but without acknowledgment of the source. Other worksheets were poorly produced photocopies of photocopies, the master document having been lost. There were a number of forms used by all three organisations essentially for the same purpose but with minor variations between content and format. Further, anecdotal evidence suggested that many users found their project data collection forms contained problems not identified until the time of data analysis. The medical record structure used by each of the three organisations met their service requirements, but the inconsistencies limited effective and efficient information sharing.

Amalgamation, however, brought opportunities for the development of a coordinated, whole-episode-of-care approach which could best be facilitated by a single medical record, or at least shared medical records in the short term. A lack of uniform policies and guidelines based on standards and best-practice principles was a major problem. Education and training in forms design had not been a high priority for clinical staff. Thus, they had limited appreciation of the need for appropriate forms, and, in particular, the necessity that the design conform to regulations and Australian Standards. It was not uncommon that forms would be developed without the involvement of the professional staff member who was responsible for the design function, the Health Information Manager - Forms Design (HIM-FD), until the very last stages of the form’s imple-
mentation. This made it quite difficult for the HIM-FD to provide guidance in design and production, and often resulted in more work for all involved.

Objectives of the review of medical record forms

The objectives of the review were as follows:

- to streamline the processes for designing and producing forms to improve efficiency and to ensure consistency across Ballarat Health Services
- to ensure that staff members understood and complied with established delegations of authority
- to improve communication between services and disciplines in the production of common information
- to promote the support available through key services: Health Information Services, the Health Information Management Unit, the BHS Print Shop, the BHS Quality Coordinator, and the BHS Manager – Community Relations
- to reduce duplication of forms and consumer information documents, thereby reducing ongoing costs associated with design and production.

The process of review, change and quality improvement

Following amalgamation, the newly convened Information Management Committee, a standing committee of the Board of Management, determined that a primary objective was the consolidation of the previously discrete medical records into one system, with one record for each patient. One element of this activity was a review of all forms in use, both authorised and informal. The Forms Review Subcommittee, comprising a range of healthcare professionals from all services and disciplines, was established to undertake this activity. Their goal was to develop a medical record structure which would support clinical practice and contain high quality medical record forms while reducing the medical record cost, both financially and in terms of storage.

Initial activities of the Forms Review Subcommittee included the establishment of a forms inventory, including the identification of duplicate forms. The subcommittee also established recommendations for the development of one medical record for each patient across all sites, although it was understood that an interim measure of borrowing medical records would suffice during the planning and implementation period.

Form ownership had previously been vested in a range of disciplines and individuals, many with strong emotional ties to documents, and most of whom contributed untold hours of work to the forms. In order to overcome resistance to change, it was agreed that the project should begin with the development of new policies and guidelines based on Australian Standard AS2828 (Paper-Based Health Care Records), and other evidence or best-practice principles. The HIM-FD was delegated with responsibility for undertaking this work. The passage of time also contributed to the change process, the progress of amalgamation making it easier to develop organisation-wide standards, policies and procedures for medical records and other forms generally. Additionally, as clinical practice was restructured across the three sites, the value of a combined medical record became clearer and more accepted by all parties.

Complementing the work being undertaken by the Forms Review Subcommittee, a Consumer Information Working Party addressed publication standards and processes for consumer information. This group, led by the Quality Coordinator, comprised representatives from HIS, Print Shop, Materials Management, Community Relations and Clinical Services. This collaborative group worked together to develop a policy and guidelines based on evidence and best practice principles to improve the quality of documents produced by the organisation. Strategies for facilitating appropriate consumer input have become integral to document production to ensure that the information collected and held meets consumer needs, both in terms of content and readability.

In 2002 the Board of Management approved the two new policies related to medical record forms design and consumer information. These, and their associated guidelines, have been published on the internal website. The Board of Management’s Delegations of Authority in relation to the approval of information documents has been promoted to ensure that designers meet standards before presenting new documents to potential users or consumers. Compliance has been improved by the introduction of a formal production authorisation which is required by the BHS Print Shop or Materials Management before any document can be printed. This authorisation specifies that all new or revised medical record forms must be evaluated by the HIM-FD using the standards set out in the guidelines before referral to the Forms Review Subcommittee, which has the delegated authority to review and approve all BHS forms. Similar authority for the approval of consumer information documents has been delegated to the Manager – Community Relations, who evaluates materials against the standards endorsed for BHS.

These policies, and their attendant guidelines, have resulted in substantial improvements to many documents in terms of content, layout, style and readability. It is anticipated that it will take two years to complete the revision of current documents. Further work is being undertaken to develop guidelines for other forms used by BHS, such as forms used by Human Resources, as well as ‘satisfaction survey’ forms. Searching for best-practice principles is currently underway.

Further details about the policies and guidelines are available from the authors.

Critical issues

During the process of writing the policies and guidelines, several critical issues were identified, and from these were evolved essential items to be considered when designing forms. These issues were incorporated into the guidelines, and are used by committee members when evaluating forms.

Managing data storage is a critical issue that form planners need to consider. Storage space is usually at a premium both in terms of physical facility and cost,
including the cost of record retrieval from secondary storage.

Recent legislation to enhance patients’ rights for privacy, as well as their rights to access their health records, has implications for information management.

Although most hospitals and health services will not have access to a computerised medical record for some time because the cost is prohibitive, electronic records are becoming more common. Forms used for direct computer input require the application of particular design criteria for which there is a growing body of evidence. Further, some paper forms are also being scanned for electronic data and need to meet specific design criteria.

Standardised data definitions should be used, as they can improve data interpretation, facilitate data sharing and enhance data reliability and validity. The National Data Dictionary is used as the primary definition source.

Quality principles should be clearly established at the outset to ensure basic standards have been met before the form is approved. Ten elements have been described as characteristic of data quality (AHIMA 1998):
- accessibility: data items should be easily and legally collected
- accuracy: data are correct and valid
- comprehensiveness: all required data items are included
- consistency: data should be reliable and the same across disciplines
- currency: data should be up-to-date
- definition: standard definitions should apply
- granularity: attributes and values of data should be defined at the correct level of detail
- precision: data values should be defined and complied with
- relevancy: data are meaningful and appropriate
- timeliness: data are collected as specified.

Other quality considerations relate to document design principles based on evidence or best practice. These design principles cover issues such as legibility, typeface, type size, justification, acronyms, use of upper and lower case, italics and bold, shading, and reverse text. The use of evidence to support standards, such as no underlining or the minimisation of upper case, has been of considerable value in reducing debate when personal preference is the issue.

A guideline example
A clear plan is essential to ensure that the design, production, implementation and evaluation of a new form, or the modification of a current form, are successful. A range of issues should be canvassed, preferably through collaboration of potential users.

Information required
- What information is to be collected?
- Why does it need to be collected?
- Who will use this information?
- Is this information collected on another form and, if so, where?
- If the information is collected elsewhere, why does it need to be collected again separately?
- Will the information be collected in narrative form?
- Will the narrative contain information that will be coded for other uses?

Computerisation
- Will the information be collected in an electronic format?
- Will the information be transferred to paper for retention?
- Will this information be retained in an electronic format?
- Will the information be coded and translated into an electronic format?

Forms
- Is this form one of a series being produced?
- How many documents will be needed?
- How many forms may be needed to collect the information?
- Will self-carbon paper be used for multiple copies?
- What are the implications for record storage?

Information retention
- Does the information need to be kept for a period of time and for how long?
- How will information be destroyed?
- Who will destroy information?

Production
- Will this form be produced in-house or commercially printed?
- What budget constraints apply?
- What are the estimated costs?
- Who needs to approve production?

Implementation
- How will the form be trialled?
- How will the trial be evaluated?
- Who will need to be educated?
- What education will be required?

Current direction and future goals
Ballarat Health Services’ ultimate goal is to establish one high quality medical record per patient and to have a system whereby the record moves with the patient throughout all of their contacts with the health service.

The establishment of a consistent set of standardised medical record forms that comply with the BHS policy and guidelines remains a high priority for the organisation and will assist in the record integration process. The production of medical record forms will meet best practice principles and be evaluated to ensure an appropriate quality that meets the needs and expectations of the users. The application of these principles to informal forms such as project worksheets and satisfaction surveys is being promoted, even though the forms will not require approval for retention in the record.
The following steps have been identified as being essential for achieving the goals:

- to provide staff members with appropriate education
- to build information about the policies and guidelines into the orientation program for new staff
- to progressively review, and revise as necessary, current medical record forms and other forms and to ensure they comply with the guidelines
- to continue the operations of the multidisciplinary Forms Review Subcommittee
- to annually review policies and guidelines to ensure that they remain current and support best practice
- to continue the functioning of projects and working groups to achieve an amalgamated medical record
- to begin work on developing guidelines based on standards, evidence, and best-practice principles for web-based documents.

**Conclusions**

A clearly specified design process for medical record forms is an essential framework for assisting clinical staff in the production of that component of their information management system. Agreed standards based on regulation, evidence, and best-practice principles are essential to facilitate effective outcomes.

The endorsement of policies and guidelines at Ballarat Health Services has provided standards for staff designing forms; these standards will ensure that these documents are produced to a consistent high quality. It is anticipated that these policies and guidelines will reduce costs and the time spent in uninformed debate, while simultaneously improving collaboration in the identification of new data collection needs, as well as the review of current data collection forms.

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**References**


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Professional Practice

The role of the Health Information Manager in forensic mental health

Glenda Cunningham

A Health Information Manager’s informal description of working in a forensic mental health service in Victoria.

Introduction

Although there are differences, working in a forensic mental health service is in many ways similar to working in a psychiatric hospital anywhere. I have found that many of the medical record issues that we face every day in our role as a Health Information Managers are very similar wherever you go.

Victorian Institute of Forensic Mental Health (Forensicare)

The Victorian Institute of Forensic Mental Health comprises a 100-bed secure inpatient facility (Thomas Embling Hospital, Fairfield), a community centre (Community Forensic Mental Health, Sydney Road, Brunswick) and a 15-bed acute assessment unit at the Melbourne Assessment Prison (in the city). There are also Court Liaison Nurses based at Magistrates Courts around Melbourne (Melbourne City, Ringwood, Dandenong, Broadmeadows).  

Thomas Embling Hospital

I am based at the Thomas Embling Hospital, which is situated in Fairfield. I have an office outside the secure entrance to the hospital, close to key personnel, such as the Corporate Lawyer, General Manager Inpatient Operations, Program Managers for the Hospital, Human Resources Manager, Clinical Administration, and the CEO.

I should explain the hospital’s access procedures. Every person who goes into the hospital has to be photographed and finger-scanned (although we are soon changing to an iris-scanning system). This system is different from fingerprinting, with a photographic image of the finger being recorded. There is a barcode on the back of the photo ID which allows access to different parts of the hospital (if authorised to access those areas). Everything you take into the hospital is put through an X-ray machine, and there are a number of banned items, including mobile phones with cameras, which must be left in a locker outside the secure entrance (for visitors) or left in your office (for staff). Going through security can take a couple of minutes, or it can take quite a long time if there are groups of students or visitors in front of you.

Medical record storage

The medical records are located inside the wall so that they are within the secure confines of the hospital and close to the clinical staff. Having said that, the units are fairly spread out on the site, so it can be a bit of a walk to where the medical records are stored (in the education building – see the photograph of the hospital). As the Health Information Service personnel are located away from the medical records, this poses some problems, for example; when our Community Forensic Mental Health team requires a medical record to be sent to it, or when clinical staff require a medical record urgently but their ward clerk is not to be found or, when outside agencies telephone requiring information, it can take some time to get to the medical records. Also, because I am away from the medical records, I am not aware when medical records are awaiting coding as ward clerks take the discharged records to the education building. One way around the problem of supplying information is by keeping a copy of discharge summaries in my office, in a locked filing cabinet. But if someone wants more than a discharge summary they have to wait until either myself or the Health Information Service clerk goes into the hospital.

I think that one of the problems we all encounter as Health Information Managers is the location of the Health Information Service within a hospital. At Thomas Embling Hospital (one of the newest in Victoria), no provision was made for the storage of medical records, so there is no Health Information Department as such and (as stated earlier) records are kept in the education building.

Challenges

When I was appointed, the health information clerk had a card system for the manual tracking of medical records. Initially, the clerk and I worked in the education building close to the medical records. This was a good system (and better than nothing), but it meant that if we weren’t available, ward clerks would have to walk over to the Medical Records area and check on the cards to see where the record was. This often

1 Fairfield and Brunswick are inner suburbs of Melbourne; Ringwood, Dandenong and Broadmeadows are outer suburbs.
wasted time, especially if the medical record was out. To assist ward clerks in this matter, I set up an Excel spreadsheet (not a long-term fix) to which they all have access so they can look up the medical record in question and see where it is. Before venturing on the walk to Medical Records in the education building. This Excel spreadsheet, however, only covers Thomas Embling Hospital and not Community Forensic Mental Health (CFMHS), situated in Sydney Road, Brunswick. At CFMHS they have a manual system where they use a book when medical records leave CFMHS to go to the hospital.

Another challenge was the format of the medical record. Because we have patients who can stay many years, the consultant psychiatrists wanted a better system so that they could find important information in the medical record quickly and easily. After talking to clinical staff as to what they considered important, the new format was trialled. All patients at Forensicare, if they have more than one volume, also have a legal volume in which all Mental Health Review Board information, legal paperwork (PSY forms and warrants etc.), correspondence, reports and referral information are kept. The second and subsequent volumes hold inpatient and outpatient information. There is a community divider (if the patient has been to CFMHS), an inpatient divider, and diagnostic, medication, individual service plan, and program dividers. The challenge now is to convert all the old volumes of the long-stay patients into the new format, as these are the patients who will continue to need annual reviews for some time to come.

Forensicare relies on RAPID (Victoria’s statewide Mental Health dataset) as its computer system. Before I arrived at Forensicare, I had spent all my life as a Health Information Manager in acute general hospitals, so this was my first encounter with mental health. As such, this was also my first encounter with RAPID, which consists of an Operational Data Store (ODS) and the Client Management Interface (CMI), the local interface to RAPID. There is no test database so I received on-the-job training. I was lucky that the clerk, who had been at Forensicare for some time, was very conscious of the quality of the data that were entered onto RAPID and she knew the system quite well. However, it would have been beneficial to have training on a test database with other CMI coordinators (or someone at that level) to perhaps explain such things as the ODS and data definitions, as there is no data dictionary for reference.

Extra responsibilities
As Forensicare is a small organisation, I am also called upon to look at its corporate records and to advise on their archiving. When I arrived at Forensicare, the archived records were kept in the Stores Department; when people had records to be archived they just put them in a box and sent them to Stores. Imagine the nightmare when you wanted to find a record again!! A Records Management Group was called in to re-archive the records properly according to the Public Records Office Disposal Schedule so that everything is now indexed, barcoded and filed according to year of disposal. A policy on archiving was written and no records are accepted for archiving unless the policy has been followed. I also wrote a business case to management to secure a more appropriate area for the storage of archived records. The proposal was accepted and the area was converted to accommodate the standards for archiving of paper records.

Melbourne Assessment Prison
We have a 15-bed unit located on the fifth floor of the Melbourne Assessment Prison (MAP). MAP can hold approximately 270 prisoners.

When I started at Forensicare we were responsible for both the general medical records and the psychiatric medical records. The previous Victorian government had an outsourcing policy; we submitted a tender to continue both general and psychiatric health services but were unsuccessful. We have, however, retained the mental health component of the service at MAP, and a private provider cares for the general health of the prisoners.

The number of operators within MAP (Office of Corrections, Department of Human Services, Pacific Shores and Forensicare) makes life interesting. As previously mentioned, Forensicare is responsible for the psychiatric service, and we are also the caretakers of the general prisoner health files. All prisoners have a general health file which travels with them to various prisons throughout Victoria.

The Department of Human Services (DHS) was involved in writing guidelines for the format of the content of the general health file. All providers had input into these guidelines. The problem for us is that, because MAP is the storage facility for the general health file, all loose filing ends up with us. Some prisons do not have clerical staff to deal with filing and related tasks.

At MAP, we have two EFT medical record clerks and another clerk who is 0.6 EFT. MAP used to coordinate the assessment of prisoners for court reports; however, CFMHS is now the central contact point for this. MAP holds approximately 20,000 medical records and culls records every year to make room for incoming records, transferring archived records to commercial storage at Pickfords. As you can imagine, with only 2.6 EFT medical record clerks retrieving and filing, dealing with this number of records is an enormous job.

I cannot change much within MAP, because to do so I would have to go through the DHS Prison Health Unit. The Health Information Service clerks at MAP work closely with this unit, as all Freedom of Information requests and guidelines relating to prisoner health files are handled by it.

I discovered that clerks, when marking off the year on the front of the general health record, were marking off only the year of reception. Of course, the prisoner might stay a number of years, in which case, when being released, their record may be culled in that same year. I have therefore requested that they mark the year not only on reception but also on being released.

My main role at MAP is an advisory one. I usually visit MAP every week to code the general health file in the Acute Assessment Unit to keep up rapport with the staff and to see if there are any problems or concerns.
Community Forensic Mental Health

My role with CFMHS is also one of advisor. There is an office manager and two clerical staff (all full-time) and approximately 30 clinical staff (not all full-time). The clinic is very busy but still does things manually. Because of the problem of not being able to get adequate reports from RAPID, an in-house system called CMIS was written. This Access database captures information about the clients at CFMHS and reports are gained easily. However, there are no edits on the system!

During my tenure, one of the Australian Council on Healthcare Standards recommendations for accreditation was to have one medical record travel between CFMHS and Thomas Embling Hospital. This has now been implemented; however, we still have quite a number of duplicate records, as not all have been amalgamated (mainly because they are not active clients). I have performed some medical record audits at CFMHS and advised on electronic appointment scheduling. I am also the contact person for any RAPID queries or problems.

Legal complexities

Working in a forensic service involves learning about the different Acts, such as the Crimes Mental Impairment Act and the Sentencing Act, that govern such an organisation. Because of the complexities of a statewide forensic service, I am very lucky to have access to our corporate lawyer. I have asked the corporate lawyer to assist me in compiling a flowchart with regard to involuntary, security and forensic patients, and sought advice about the type of paperwork which needs to be completed, and by whom, so that the clinical staff would have a visual chart to which to refer. I am often asked about paperwork.

Summing up

As can be seen, a forensic service provides challenges which may not be encountered in acute general hospitals. I feel that my training all those years ago has helped me, but the experiences I have had along the way have certainly added to my skill base. In a small organisation, you are quite often called upon to give advice on anything to do with records management and computer systems. I am enjoying my role tremendously and, as with most jobs, there are frustrating times as well as rewarding times.

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A Health Information Manager’s informal description of working in the New South Wales Corrections Health Service.

Corrections Health Service (NSW)
I am Joint Records Manager (JRM) for the statewide medical records service of Corrections Health Service (CHS), New South Wales.

CHS works in close partnership with the Department of Corrective Services (DCS) and the Department of Juvenile Justice to provide health services within a secure environment to more than 8400 full-time inmates and 18,000 people annually in 29 correctional centres, detention centres, police cell, court complex and juvenile justice centres across NSW. There are approximately 130,000 offender movements between centres each year, which translate to the same number of record movements.

The job
My position as the JRM is responsible for the efficient and effective management of the medical and inmate management records services for CHS and DCS. The JRM is expected to consult and advise the senior executive of both CHS and DCS on issues relating to the management of medical records and inmate management files. The JRM develops an annual business plan for the records service to provide quality improvement where required, and works closely with the Assistant Records Manager and Medical Appointments Supervisor to recruit, train, direct and manage 41 records service personnel.

I work from two offices, spending most of the time at Joint Records Centre, which is the central records repository, and the remainder of my time at the Medical Appointments Unit, Long Bay. The position also provides the opportunity to travel around the state to oversee records service operations in many metropolitan and rural clinics.

HIM skills
Subjects studied in the Bachelor of Health Information Management degree have provided a basis of knowledge required for my current position. My knowledge of medicolegal principles has helped in providing advice to medicolegal staff, although it is important to keep expanding medicolegal knowledge and to keep up to date with the relevant NSW Health Circulars, Privacy Principles and Acts. Clinical Classification has helped in providing advice on coding queries, although it is also important to keep up to date with new versions of ICD-10 as these are introduced. Human Resource Management provided a basis for recruitment and performance management of staff in theory, although most of the practical skills of staff management, such as the recruitment process, staff meetings, performance management and reviews, staff coaching and counselling, are learnt on the job.

Experience gained through completion of an Honours thesis in Health Information Management has helped me to develop an improved level of skills in written communication and analysis, which has made it easier in my current position to write reports, submissions and plans, and to conduct research projects.

Summing up
In the position of JRM, the management of a large number of staff is an area that is challenging and requires commitment, patience and perseverance. On the brighter side, when there are breakthroughs, staff members achieve goals, or there is improved communication between staff and management with staff working together as a team in the workplace, it is rewarding because the environment is happier, indicating that your hard work has paid off.

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An ‘arresting’ kind of job for a Health Information Manager: working in SAPOL

Liza Reinberger

A Health Information Manager’s informal description of working in the Information Services Branch of the South Australia Police.

Introduction

Recently, I was advised that someone noticed a gleam in my eye when I spoke about the challenges facing me at work. While I thought the gleam was more likely to be a ‘glazing over’ rather than excitement, I do have to concede that I have been enjoying my time as Manager, Information Services Branch (ISB) at South Australia Police (SAPOL).

ISB at the South Australia Police

SAPOL is an interesting organisation in itself, being male dominated, yet the corporate culture is very positive and team orientated. It is heavily committed to equity and diversity and I have been the grateful recipient of many opportunities in this area.

SAPOL provides a diverse range of services to the community, and is a large complex organisation that, because of the nature of its operations, is constantly subject to public scrutiny and accountability. It provides services to over 100 locations across the State on a 24-hour-a-day basis.

ISB is responsible for information release, data quality, and strategic information and records management. We ensure records are up to date and as accessible as possible to operational police and other SAPOL staff. The Branch has over 80 staff, a major proportion of whom are now unsworn officers, as the civilianisation of many police positions has occurred. ISB comprises areas dealing with data quality, records management, mail services, information release under the Freedom of Information Act (FOI), and release of police reports and criminal history information to government agencies, members of the public and private organisations. Shift workers provide 24-hour access to information for local and interstate operational police from SAPOL and external agency systems.

ISB provides substantial information release services: we receive over 2500 FOI applications a year, and process 80,000 requests for criminal history information (for example, National Police Certificates), 15,000 requests for police reports, and many court orders and ad hoc requests for information. Over 12,000 requests for information from operational police are dealt with each month.

Some of the manual processes used to prepare and manage requests have been automated. A FOI management system has been developed and successfully manages and reports on our business activities, saving hours of tedious compilation of statistics and monitoring of workload. An application which automates production of much of the criminal history advice has also been introduced, providing much-improved working conditions for staff and substantial efficiencies.

Security issues

Ensuring we meet our obligations in respect of confidentiality and privacy, as well as meeting our primary responsibility for the safety and security of the community, is demanding at the best of times; however, in the current climate of national security, recent initiatives to ensure the integrity of people working with vulnerable groups have substantially focussed my role at SAPOL of late.

To support appropriate national criminal history checking initiatives we have revised policies (scouring legislation in the process), developed and introduced new work flows, revised forms, drafted cabinet submissions and briefings, and undertaken high level negotiation and consultation with other jurisdictions, community groups and government agencies.

Summing up

Sometimes I wonder why I traded the simple life in health for policing, where I had to learn a new ‘language’ and culture, where issues are generally complex and things made difficult by having to operate within strict legislative confines and public scrutiny. I do, however, enjoy challenges, solving problems, introducing efficiencies and improving the conditions of clerical staff and services to the community; SAPOL certainly provides me with plenty of opportunities.

I am very pleased to announce the defection of another Health Information Manager to the ranks; Lorraine Van Gemert recently transferred to take on the responsibility for project management of CrimTrac national projects, development of integrated business and information management solutions to support operational policing, and provision of expert and timely advice on national information technology and data management issues.

I have found the competencies and skills obtained while working in health are readily transferable, and the move to another industry may not be as daunting as you may think. My advice to any of you contemplating a career change is to go for it — there are plenty of employers out there looking for people with the skills that Health Information Managers can provide.

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The Health Information Manager in correctional health

Jenny O’Callaghan

A Health Information Manager’s informal description of working in the health services for Correctional Health in Victoria.

Introduction

St Vincent’s Correctional Health Service provides acute medical, surgical and psychosocial care to male prisoners in Victoria. The service operates at two locations: St Vincent’s Hospital campus in Fitzroy, inner Melbourne, and at the Port Phillip Prison campus in Laverton, outer Melbourne. At the Fitzroy campus there is a 10-bed maximum security inpatient unit called St Augustine’s, as well as tertiary outpatient services. At Laverton, there is a 25-bed medical and surgical inpatient unit, a 30-bed psychosocial unit, and primary- and secondary-level outpatient services.

Part of my role at St Vincent’s Hospital is to oversee the Health Information Service functions at Port Phillip Prison. This entails a monthly visit to the department and a consultancy-type role for any other questions that may arise in between these visits. Obviously, visits to the prison can be interesting, and, although the process of getting in may be quite unusual, the department still experiences the same issues as a health information services department in any hospital.

Not your average workplace

There are a number of things to be aware of when you first visit the prison, about which I was warned well in advance. The ‘number one’ thing is that you have to be very careful about what you take there. All your belongings must be in a clear plastic bag so what’s inside can be clearly seen. There are to be no mobile phones, nothing sharp like hair clips or nail files, and any pens you take must have a clear casing so you can see inside them. If you bring a guest visitor with you, they must have prior clearance.

The first time I visited the prison it reminded me of an airport. All bags must be put through an X-ray machine, and you walk through a security gate. Then you are searched by one of the security guards before you are allowed to enter. The manager of the health information services department must collect you before you make your way through the numerous security doors, one after the other. Once inside, besides the fact that there are prisoners walking around and security guards everywhere, it feels like every other health information services department.

Demands of the job

In the last few months I have been involved in numerous activities with the prison, including designing a new form for the medical record, organising storage areas, privacy training, updating procedure manuals and participation in the implementation of the IBA Unicare Outpatient Booking system and multi-identifier functionality.

In addition to the visits to Port Phillip Prison, the other part of my role is to provide statistics to the St Augustine’s ward Nurse Unit Manager at St Vincent’s. This ward is accessible by one lift only and has the same type of security features as the prison.

The main difference between a hospital health information services department and the prison is that the prison does not actually retain the medical record permanently. Medical records are transported with prisoners wherever they go, so, if a prisoner is transferred to another correctional facility, the record also goes with them. This obviously makes storage issues a little less complicated.

Summing up

Visits to Port Phillip Prison are always interesting and are a fascinating part of my role. It is definitely a different aspect of health information management that I didn’t think I would ever get to experience.

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A Health Information Manager’s informal description of working as a consultant in Australia and overseas.

Introduction
This is not a typical day, sitting in a comfortable hotel room overlooking lush gardens, a swimming pool and the sprawling southern Indian city of Hyderabad. I have this week joined a team of actuaries and economists who are developing the regulations necessary for the administration of private health insurance in India. My role is to assist this team from Bearing Point/USAID in assessing the ability of hospitals and providers to generate the necessary data for insurance claims and to help the establishment of a uniform claim data set.

This Saturday is the morning of my fourth day here and I will visit a private hospital to review their medical records and hospital information system and, next week, a third party claims administrator. This country is one of great contrasts, where 700 million of the one billion people are under the poverty line, yet there is a large enough middle class to warrant the establishment of private health insurance.

I first met Bearing Point three years ago in Sofia, Bulgaria, where the company runs the health project on behalf of USAID. The various initiatives run by USAID over the last three years have had relevance and implications for HIMAA’s health information standards project, for which I am team leader.

Skills
The work I have done over the last 10 years has relied on the core skills and experience gained as a hospital Health Information Manager. My data management skills were developed during my time as manager of the National Health Data Dictionary. There, I learnt the true meaning of health data management: to be able to take the data captured by hospitals out of the context in which they were originally recorded and understand their use in health statistics, evaluation and funding. To be able to capture the meaning of these data in their original context is vitally important to their subsequent use and interpretation. This need for well-defined data gave rise to the data dictionary and a framework to organise the data element. I have created several data dictionaries since then.

The overriding organisational need is to understand and exploit their data. To do this, I have learnt to develop logical models of the data, how to define or capture data meaning and how to specify the way the data will be recorded.

With the advent of increased computerisation of clinical information, our ability to manage (by this I mean understand, define and use) health data across the different media, including paper, as a conceptual whole on behalf of the patient, is crucial.

Summing up
I wish we could assist all the projects today that are struggling with how clinical data will be captured and held in electronic records in whatever clinical setting. I see clinicians and systems developers exploring these concepts at HL7. They are trying to define all the data that may be shared between information systems. The debate between terminology, coding systems and data is fascinating. I believe that health information managers should be playing a much stronger role in this work. Our role today in managing a patient’s health information is important as greater amounts of data become electronic. Paper and electronic records must be managed as a whole.

One thing that I wish I could really understand is how people conceive of data in their heads!

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From private to general practice

A Health Information Manager’s informal description of working in a Division of General Practice in Victoria.

Introduction
During the 1980s and 1990s, I had my own consulting business in health information management and quality, as well as lecturing part-time at La Trobe University, Victoria. The business had numerous clients both locally and interstate and we were also contracted to manage and staff the medical record services for two private hospitals. I had a partner who looked after the day-to-day management of these services and we employed four staff to work within the hospitals.

One of my most enjoyable roles involved coordinating clinical review/medical care evaluation for medical staff at the public hospital and the two private hospitals in the Dandenong area of Melbourne. In 1993, several of the general practitioners participating in this program asked me if I would consider assisting them in establishing a Division of General Practice. They anticipated this would involve about one day per week. I agreed to give it a go, although I had little knowledge of general practice.

Divisions of General Practice

The catchment of Dandenong District Division of General Practice includes the cities of Casey and Greater Dandenong, with a population of 300,000 plus. Just over 270 GPs are members of the Division, with just under 100 actual general practices. In 1993, the first year of operation, the annual operating budget was $160,000 and the Division had two staff. I was the Executive Director, working one day per week with an administrative assistant working two days per week. The budget for 2004 is just under $2 million and we now have over 20 staff. For several years I was able to combine my business with the running of the Division; however, in 1997, I had to make the decision to go one way or the other. The consulting business was doing very well but involved more and more travel interstate. Things were very hectic on the home front with two teenage children and a husband working in a very demanding role. The idea of one place of employment with regular hours sounded very attractive to me. Closing the business was difficult, but, in hindsight, taking on the full-time role as CEO of the Division has been one of the most rewarding experiences of my career.

HIM skills
My background in health information management, quality improvement and education has equipped me extremely well, as it brings together all the skills required to manage a small to medium healthcare organisation. A large part of my time is spent managing staff, business planning, networking with other health providers and liaison with the GPs and practice staff. I report to a Board of 11 GPs that is elected by the membership. The majority of Division staff members are very experienced, skilled health professionals, including pharmacists, nurses, health promotion officers, educators and doctors. Others include finance and administrative staff. A Health Information Manager worked with us for several years as a Quality Coordinator and contributed a great deal to the accreditation support provided to practices. This included developing a generic policy and procedure manual, coordinating reviews of medical record systems and providing education and resources around continuous quality improvement and privacy. We have recently employed a part-time HIM to work on our Diabetes CVD Risk Management Program. Almost each year over the 10 years we have had an HIM student spend time with us on placement.

What do we actually do?
Division programs and activities include a focus on quality improvement at all levels of general practice, information management, health promotion, preventive healthcare, evidence-based medicine, the management of chronic disease and training in population health areas. The overall aim is to assist general practice in providing optimal quality care to the community.

Programs and activities at Dandenong Division include:

- general practice accreditation, including continuous quality improvement
- information management
- electronic information exchange
- care planning/case conferencing
- business and financial management
- risk management
- chronic disease management, including a Diabetes CVD Risk Management Program and a Mental Health Program
- aged care
- Aboriginal health
• immunisation
• integration with other health providers
• consumer/community liaison
• quality use of medicines
• GP Health
• Practice Managers network
• Practice Nurses network.

The future
What I have discovered, after spending most of my working life in the public and private hospital field, is that 95% of healthcare happens outside hospitals. Tony Abbott, Minister for Health and Ageing, stated that Divisions of General Practice are doctors working with doctors to promote a wellness culture over an illness culture. He believes that the development of the Divisions network has been one of the most important health innovations of the last decade and that the Government looks to Divisions to provide leadership, generate partnerships and build an organising framework that will maximise the community benefit from available health funding (Department of Health and Ageing 2004).

Summing up
I feel very fortunate and privileged to have been involved from the beginning with the development of a Division of General Practice. It has been a roller-coaster ride, with many exciting challenges that have stretched me both personally and professionally. I continue to promote Health Information Managers as ideal candidates for various roles within Divisions, including research, quality improvement, clinical information analysis, data management, accreditation coordination, electronic health exchange, and project management. I certainly made the right decision several years ago and have never looked back. I look forward to other Health Information Managers joining this exciting area of the healthcare sector.

References

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The Health Information Manager in a Division of General Practice: a Western Australian experience

Kate Harrison

A Health Information Manager’s informal description of working in a Division of General Practice in Western Australia.

Introduction

‘So, where do you work, Kate?’ is the question most likely to cause anxiety at social gatherings. As you will see, this is not easy for me to define! In my last job it was much easier just to say that I worked at a hospital, invariably receiving the return question whether I was nurse. However, I think it’s pretty standard for Health Information Managers to get those questions and I’m sure each of you has had a similar experience at some time.

A ‘traditional’ start

I have had a fortunate career to date. I am forever grateful to the Health Information Manager in South Australia who took a chance on a fresh-out-of-uni nurse. However, I think it’s pretty standard for Health Information Managers to get those questions and I’m sure each of you has had a similar experience at some time.

Making a move

I have now moved into a more diverse, less traditional HIM role and I currently work for the Osborne Division of General Practice in Perth. My first contact with Divisions was through Barbara Postle at Curtin University, Western Australia, who had heard from the CEO of one of the other Perth Divisions. Although that particular Division had no vacancy at the time, I was keen to return home to WA and, as fate would have it, the very next month there was an advertisement in the West Australian for a position at another Division. I couldn’t say I ‘consciously’ chose a non-traditional HIM role, but I was keen to return home and the advertised position seemed ideal.

Divisions of General Practice

Despite the name, Divisions are about networks and cohesion and working together with GPs, rather than ‘division’ of them. The Divisions Network is Australia-wide, and at the last national Divisions Forum (our conference), held in Brisbane in November 2003, a major theme was to suggest a move away from the traditional name of ‘Divisions’ to a name more representative of the actual work we undertake.

Osborne Division of General Practice (ODGP) supports general practitioners working together in the provision of quality healthcare to the community. Our mission is twofold: to provide a network for GPs to interact with each other and communicate with other healthcare providers, hospitals and community groups in order to enhance the delivery of primary healthcare in the local community; and to maintain the GP in the central coordinating role in the provision of healthcare and adequately represent the views of GPs in the future direction of healthcare delivery.

ODGP was founded in 1993 and is managed by a board of GP directors with support from non-medical staff. It represents 122 general practices and nearly 400 GPs working in the almost 830 square kilometre North Metropolitan region of Perth, with a population of approximately 398,000. It is one of the largest Divisions in Australia. ODGP is a member organisation, with members having access to our many programs, some of which include Diabetes, Mental Health, Quality Use of Medicines, Community Liaison, Research, Immunisation and GP & Practice Support. Each Program Manager provides support in many different ways, including development and provision of resources, continuing education, visits to practices etc.

1. There are 120 Divisions of General Practice throughout Australia, with 30 in Victoria. Each covers a specified geographical area, and is incorporated as an association or company largely funded by the Federal Government. Across Australia, 95% of GPs are voluntary members of Divisions and receive support, coordinated education opportunities and facilitation in networking with their colleagues and other health providers. Divisions of General Practice provide the federal and state governments with a focal point to facilitate communication with GPs. This allows governments, through Divisions, to deliver a range of national health programs and policies. Examples include the roll-out of new initiatives such as changes in Medicare, new strategic directions in areas such as chronic disease management, population health and information management. Divisions are funded to achieve outcomes through agreements with the Department of Health and Ageing. Other funding sources include State Departments of Health, the Pharmacy Guild, the National Prescribing Service and other bodies.
My start
When I first started in ‘Division-land’ (yes, we have our own land here!) I was completely and utterly overwhelmed. Having not done much work at university on GPs or their industry, and coming to the role with hospital-based experience only, I was lucky to come through the first few months with a lot of new skills, understanding and knowledge – I think you could say I managed to swim rather than sink! It helped that I started in a new role at the Division, so, to a certain extent, was able to mould the position to suit my experiences and knowledge. I have since moved on from my original role, and Zoe Moran (a fellow Health Information Manager) is now more than capably at the helm of the ship that is ‘GP & Practice Support, Immunisation and GP Education’.

My current role
My current role changes literally every day. I am covering a maternity leave position of Program Development Manager and providing day-to-day support to the CEO, whom I also cover while she is on leave. In addition, I undertake most of the human resources requirements of the Division. My ‘official’ title is Executive Assistant. I am responsible for meeting the reporting requirements of the Department of Health and Ageing, which include development of strategic (three-yearly) and business (annual) plans, along with completion of 6- and 12-month reports collaboratively with each relevant Program Manager. I have three staff reporting directly to me as a Team Leader. I provide secretariat services for the Board and Executive Committee meetings and my work with the CEO varies so constantly it is impossible to define in any succinct way!

There are many HIM skills that I use on a day-to-day basis; however, most are probably not in their traditional sense. For example, I’m not coding and I’m not dealing with casemix or terminal digit filing and so on, but I am still required daily to call upon my staff management and human resources skills, along with my understanding for keeping good records (never underestimate the power of good minutes!) and my report-writing skills. For me, one of the biggest things I think I learnt at uni (not HIM specific) is the ability to learn new concepts, to adapt to change and to problem solve. I use these skills absolutely every day.

I have also acquired many non-HIM skills along the way. In this recent role I have learnt (and been fascinated by) some of the ins and outs of the Corporations Act and how an organisation with a board of directors and a membership works. There are countless other skills that I have learnt — I find that I learn and am challenged by what I do every day.

Summing up
For the most part, I enjoy my job immensely. I have learnt a great deal being involved in such an organisation, and I believe that Divisions do much good work for GPs and for the community, so I’m proud to be a part of that. We have a great professional and supportive team at ODGP, and as an individual Division we have many achievements to be proud of. I believe that HIMs have many skills that are useful to Divisions and I would certainly recommend that, if other Health Information Managers are looking for a role which is less traditional and there is the opportunity to work in a Division, they should take the challenge with both hands.

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A Health Information Manager’s informal description of working in a Division of General Practice in Western Australia.

Introduction

I was an HIM student at Curtin University of Technology, Western Australia, when I pursued a Professional Practice Placement outside the usual realms of HIM. I would recommend all HIM students to try somewhere a little different for placement; it is one of the few opportunities you have to get to know what you might be missing! The Divisions of General Practice provided the perfect opportunity for this. For a student on placement at the Division, it was an exciting and enjoyable experience, and this later led to a position as Program Facilitator. Later, I became a Program Manager of GP & Practice Support, Immunisation and GP Education.

A typical working day

This is how my typical working day should look:

8:00am Arrive at work and make myself a coffee.
8:05am Check emails, facsimile and phone messages, and respond appropriately; many of these queries require follow-up. Or this is time for General Practice visits.
10:00am Preparation includes lots of research, reading and assessment of what might be useful for my programs and what might be useful to forward to practices and the community.
Noon Lunch.
12:30pm Breathe...prepare weekly fax stream updates, and monthly newsletter updates, a key source of communication to GPs and practice staff.
2:30pm Plan, organise, prepare and attend upcoming education events and committee meetings.
3:30pm Distribute or produce resources.
4:00pm Home time!

Being a Program Manager of three programs, namely GP & Practice Support, Immunisation and GP Education, is very much a juggling act. Each of my programs is large and equally important. So, generally speaking, I don’t have a ‘typical’ day! Things I often deal with include providing support to practice managers, practice nurses, receptionists and GPs in the Division. Questions range from ‘I need help on how to become accredited!’ to ‘Do you have a template job description form for a practice manager?’ This kind of support is provided in person or by telephone, facsimile or email and, as you can imagine, can be extremely time consuming. These queries often lead on to producing resources that are made available by the Division, such as producing a template job description form for a practice manager.

I often meet with external organisations interested in sponsoring events that the Division might hold, and also regularly meet with other stakeholders, including my Program Advisory Committees, on ways to provide input into my program areas. Evaluations from education events I hold at the Division are also a valuable source of guidance in future program planning.

Liaison with colleagues is an important part of my role because of the amount of overlap with other Program Managers in the Division. For example, I am the GP Education contact for the Division; however, other Program Managers organise GP Education events (e.g., the Diabetes Program Manager might plan a Diabetes Workshop) and we work together to produce the workshop. This approach improves team spirit within the organisation and promotes our Division as working collaboratively within and between Divisions.

Each of us has a business plan which Program Managers review and report on annually and submit to the Commonwealth Department of Health and Ageing in conjunction with budgets for each program.

HIM skills

When I consider which particular HIM skills I use, I’d have to list:

- communication skills
- management skills
- time management and prioritising skills
- budgeting skills
- organisational and planning skills
- evaluation skills (surveys, needs assessments)
- reporting skills
- knowledge of accreditation, privacy and confidentiality
- knowledge of medical terminology.

Summing up

There are many things I love about my job. Being a Program Manager has provided me with a wealth of knowledge and experience. I am proud and excited to be involved in furthering quality healthcare in the community. It is also a privilege to have programs that are my own within the boundaries of the programs business plan. As a result of this flexibility, the opportunities to be creative are endless and I am able to use my initiative to better the community.

There are some things I wish I’d known from the start. It can be easy to conjure a picture of where you want to go with your programs and imagine the successes as a result, but sometimes this may be an unachievable goal in a given time frame. Do not over-stretch yourself. Set achievable goals, not unrealistic goals that only Superman could achieve!
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Taking on a new role: the Health Information Manager in the Queensland Ambulance Service

A Health Information Manager’s informal description of working in the Queensland Ambulance Service

Introduction
After being asked to write a piece for Health Information Management Journal outlining my duties as a Health Information Manager with the Queensland Ambulance Service (QAS), I wasn’t quite sure where to start. Whether in a government or privately funded organisation, the environment in which Health Information Managers find themselves is both highly and rapidly changeable.

The Queensland Ambulance Service
The QAS is part of the Department of Emergency Services (DES) and falls under the portfolio of the Minister for Emergency Services. Delivering high quality pre-hospital emergency care, specialised transport and a range of community services, the QAS aims to improve the health and wellbeing of the Queensland community. During the 2002/03 financial year, QAS paramedics responded to over 570,000 requests from 262 locations across Queensland. Previously part-funded through a subscriptions scheme, the QAS now sources funding through the Community Ambulance Cover scheme in addition to government funding.

The position of Health Information Manager within the QAS appealed to me, as it required the establishment of health information services in a healthcare setting in which there was no predecessor. It is the challenge of creating a health information service from scratch and watching it change and grow that I enjoy most. In fact, my first position as Health Information Manager was based at Kingaroy Hospital in a similar newly created position requiring the development of systems in remote sites throughout the then Kingaroy and Gayndah Monto Health Service. Looking back, I believe it was those skills that I was forced to acquire through a very steep learning curve during my two years in Kingaroy that held me in good stead when applying for the position of Health Information Manager within the QAS.

In the beginning
I began working with the QAS in early 1996, being responsible for the ongoing management of the Ambulance Integrated Management System (AIMS) database. AIMS was an in-house solution, designed to store information recorded by the then Ambulance Officers on ambulance reports which were introduced during 1995 as part of a new information management strategy. In the last eight years the number of ambulance reports produced has doubled. The QAS has microfilmed ambulance reports produced since July 1995, all of which are indexed on AIMS in order to meet future storage and retrieval requirements of patient records. This enabled the centralisation of management of ambulance reports previously stored across Queensland, allowing the QAS to better meet its legislative requirements.

Initially my role was coordinating the flow of ambulance reports (including a significant backlog) and liaising with our external contractor for data entry and microfilming. This was shortly followed by the rather tedious job of verifying the existence of ambulance reports on both AIMS and microfilm. This became an all-consuming part of my role as I faced difficulties in obtaining assistance due to the proverbial budgetary constraints. Eventually, resources were provided, and I was able to concentrate on other duties.

The job develops
The role grew significantly and before long I found myself responsible for:
- planning, development and documentation of services provided by the Health Information Unit
- managing quality activities on database accuracy
- loading data files to AIMS and investigating and resolving any problems
- database acceptance testing
- managing the storage, retention and destruction of patient records
- coordinating the retrieval of patient records for medicolegal requests
- preparing and managing the AIMS budget (then at $500,000)
- teaching trainee Ambulance Officers in subjects covering the completion of ambulance reports;
- producing a monthly newsletter
- chairing the annual AIMS review
- coordinating enhancements to data capture, including the production of revised Instructions for completion of ambulance reports as reporting requirements changed.

In addition, I found myself responsible for the production of all statistical reporting from AIMS using the Cognos reporting tool Impromptu. These reports were sourced from a range of internal and external clients for purposes ranging from reporting of operational performance measures, research and education, through to obtaining revenue from other Government Departments that utilise the services of the QAS. It was at this point that I was very relieved to obtain funding for a second full-time Health Information Manager.

By the time we had settled into an effective working arrangement, our roles were significantly changed as a result of our amalgamation with another unit during the latest organisational restructure. The result was the formation of the Information Support Unit consisting of seven employees. My role now is primarily that of managing the AIMS database, patient records, release of records through a recently established Administrative Access scheme, policy and
procedure documentation, developing and managing quality assurance activities and the provision of advice in relation to health information. I am now in a position where I can finally tackle at least some of the items on my long-established wish list.

**Summing up**

I dare not say that my degree didn’t prepare me in any particular area, just in case it reflects poorly upon my attendance and listening skills during lectures. The campus club was after all a great place to be between lectures — and a little difficult to leave. Seriously, though, the skills that no theoretical course can prepare individuals for, and which I found most difficult to learn, were dealing with and negotiating organisational politics, how to say no, and how to delegate. The latter was made easier when there was actually someone to delegate to.

Apart from the constant interaction with many varied and interesting people and constantly being faced with new challenges, I must say that the thing I like most about working in a non-traditional HIM role is not being confined to the basement (or dungeon as it is affectionately known) of a hospital. Oh, and let’s not forget the coding — this may be career limiting, but I haven’t coded for 10 years.

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The Health Information Manager as Project Manager

Shahn Williams

A Health Information Manager’s informal description of working as a project manager for the Victorian Department of Human Services.

Introduction

I like to keep things simple. I often tell people I am a project manager, I work in ‘health information’ and/or I work for the Department of Human Services, Victoria. Sometimes this is abbreviated to ‘IT projects’ and sometimes elaborated as working with data and information collections, systems and standards. I always find the ‘What do you do?’ question difficult because my role continually changes. The words ‘change’ and ‘projects’ seem to me to be synonymous, which is probably the key attraction to me for project work.

I did not plan to become a ‘project manager’, but I accepted the offer of being involved in a project one day, and have moved from project to project ever since. I like the constant challenge of projects, the variety of work, the autonomy and the chance to work with so many people through ‘projects’. I believe HIM skills are perfectly suited to project work, and this is why so many Health Information Managers seem to be moving into ‘project’ roles.

Skills for the job

The main skills I use in my current project role are:

- organisation and time management
- written and oral communication
- project management
- health information systems (analysis, design and selection)
- information technology (concepts, processes and terminology)
- health data collection and analysis (including data integrity)
- work process management
- organisation dynamics, team dynamics and politics
- change management.

Some of the HIM skills that I use occasionally in my work are:

- contract management
- legislation interpretation and implementation
- policy and procedure development and implementation
- meeting organisation
- staff management
- strategic planning.

Quality-management and risk-management skills have been helpful for my general knowledge, as have knowledge of the Australian health system, information standards and disease processes. An understanding of financial management has also been useful, even though I have only ever managed fixed budgets.

Coding is a thing of the past for me (unfortunately). I did try to keep up my coding skills, as I used to advise researchers and data analysts on the meaning of coded data. However, when ICD-10-AM was introduced, I did not have the time required to maintain my coding skills and now I have very little to do with the analysis of the disease and procedure data that are collected by the Department. I also have had very limited direct experience in benchmarking or accreditation.

The ‘interpreter’ role

Many of my projects are ‘information technology’ projects where I am a ‘business’ or ‘information management’ expert. I find that I need to understand both the IT jargon and the business jargon, and be able to interpret from one language to another. The same words can sometimes hold very different meanings for each group. I believe the key for managing IT projects is for the team and stakeholders to have an agreed understanding of the work required and the end goal, regardless of the words used.

Challenges

I do enjoy my work, but often those aspects of my projects that I most enjoy are also the aspects that can be the most frustrating: variety, challenge and change. I also really like working with so many different groups of people, but at times do not feel attached to, or part of, any one group. Working across many projects I often facilitate lots of work, but find that I am not directly responsible for many projects. Often people who work with me on projects have other (sometimes ‘real’) jobs, and it can be difficult to gain their commitment to ‘my’ project. Everyone wants to know ‘what is in it for me’, and this is a reasonable question to ask.

With all projects I believe it is most important to always try to keep the end goal in mind and be clear about the scope. Projects can easily move off on a tangent if not managed properly. Also, I believe it is important to take a step back every now and then. It is important to acknowledge what has been achieved, particularly on large projects and particularly at the end, when the focus is usually on what is not yet finished and what else can be done. To understand how each project fits into the ‘bigger picture’ is also very important for me.

Summing up

Perhaps one day I will move into an operational role. However, for now, I find my project work very satisfying professionally and personally.

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A Health Information Manager’s experience in palliative care

Sophie Cassimatis

A Health Information Manager’s informal description of working in a palliative health service in New South Wales.

Introduction

I have been working as a Health Information Manager in subacute and non-acute care for the last 10 years. My role and responsibilities have changed as much as the name of the organisation I started working for back in 1994. I am currently responsible for the information needs for palliative care, rehabilitation, community palliative care, community health, dental, immunology and infectious diseases ambulatory care. I have been asked to relay my experiences as a Health Information Manager working in palliative care.

The Hospice

In 1994, I started my second job after graduation from the University of Sydney working as the Medical Record Manager, Sacred Heart Hospice. At this time, Sacred Heart Hospice had 100 palliative care beds. The Community Palliative Care Team was responsible for seeing 200 patients in their homes, and over 100 patients were being seen each month by the multidisciplinary team in the Day Centre.

Sacred Heart Hospice is a public hospital owned by the Sisters of Charity and funded by the New South Wales Health Department. Since 1890, Sacred Heart Hospice has been providing palliative care to patients. Palliative Care is about providing holistic care to patients and their families in a kindred and nurturing environment. The essence of palliative care is also extended to staff who work in this setting.

The challenges

As a new graduate, I found the role extremely challenging. As the sole Health Information Manager, I was responsible for overseeing all medical record functions, processes, policies, reporting, training and information needs for Sacred Heart Hospice as well as supervising two medical record clerks. I held this position for seven years.

In my first two years at Sacred Heart Hospice, I felt isolated from other Health Information Managers. I used to ring my Clinical Supervisors from Auburn and Nepean Hospitals for advice. I joined the code-I list server to be able to talk to other coders around Australia and New Zealand about coding queries, and I joined several special interest groups of the New South Wales Branch of the Health Information Management Association of Australia (HIMAA) to meet other Health Information Managers.

From my first day at Sacred Heart Hospice, my mission was to tailor my medical record service to the environment and to think extremely laterally. My university degree prepared me for my work in health information management, but I felt there was more for me to learn and that it was up to me to keep educating myself. To improve my skills, I took courses in human resources management, palliative care principles, casemix, medicolegal and bioethics. I read everything on palliative care, different classification systems, disease processes, occupational health and safety and subacute care.

In my first five years at Sacred Heart Hospice, I stopped the medical staff from completing the front sheet: my aim was for the medical staff to complete an adequate discharge referral letter and summary for patients upon discharge, transfer or death. I redesigned the discharge summary twice. I introduced a discharge summary and a summary of admission (a deceased summary) with the full support of my medical staff.

Four years ago, with the full support of both the palliative care and rehabilitation teams, I redesigned the format of the medical record with coloured dividers (for example: Community, Assessment and Management Plans, Correspondence, Pathology and Investigations, Reports and Case Conference). These dividers are used in the medical record and for clinical use in the hanging files on all wards.

HIM background

I am often asked what in my work background led me to this type of work and how I got this job. I think it is a combination of luck — someone giving you the opportunity to develop and someone seeing that potential in yourself that you do not necessarily see.

The Sacred Heart Human Resources Manager and the Director of Mission told me many years later that they wanted me for the job due to my diverse work experience. I had worked with palliative care patients as a radiation therapist, I was compassionate, I had strong Christian and family values, I was bilingual, I had worked in other roles (coder, data collector and researcher), I had a Health Information Management degree and I demonstrated attributes of loyalty and advocacy for palliative care.

This was evident in 1997, when the then Sacred Heart Hospice Chief Executive Officer asked me to be one of seven staff in an organisation of 200 employees to be on the Transitional Monitoring Team to assist staff and management with the integration of the Hospice with St Vincent's Hospital.

I am eternally grateful to those individuals who gave me a chance in the very beginning of my career and who were willing to gamble on a new graduate.

I can honestly report that I have used all my health information management skills. I have designed forms, chaired meetings, assisted in implementing different information systems and medical records systems, prepared Sacred Heart Hospice for several accreditation reviews, managed budgets, written ser-
vice agreements and business plans, moved my medical record department twice and closed my service.

Changes
In 1997, Sacred Heart Hospice integrated with St Vincent’s Hospital, Sydney. Sacred Heart Hospice is still the legal name for the organisation, although it has changed several names from Sacred Heart Palliative Care Institute to Sacred Heart Palliative Care and Rehabilitation Services, and then to Sacred Heart Building. The palliative care beds were reduced from 100 beds to 65 beds. The Sacred Heart Medical Record Service was formally merged with the St Vincent's Hospital Medical Record Service in January 2002.
I now report directly to the Medical Record Manager, St Vincent's Hospital and I report indirectly to the Sacred Heart Hospice Director and Deputy Director. I am employed as the Health Information Manager, Subacute Services at St Vincent’s Hospital.

A typical day
A typical day involves overseeing the day-to-day information needs of Sacred Heart Hospice. I am responsible for ensuring all data on the 24-hour ward census match the information system, coding Sacred Heart Hospice records, conducting audits, managing staff, ensuring records are prepared for the 10am and 2pm drop-offs to Sacred Heart Hospice, liaising with the Medical Record Manager, St Vincent's Hospital, Sacred Heart Hospice Director, Deputy Director, Quality Improvement Co-ordinator or staff in general on various matters and issues and going to pertinent meetings.

Summing up
I have always wanted a challenging job with variety and where my day-to-day job would not be the same. Even today, I feel that I have stayed so long because I enjoy the work. I love the variety in my role and the challenges it brings every day. I thrive on the interaction with staff, patients and families.

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The Health Information Manager in epidemiological research: from Coder to Program Manager

Georgina Marr

A Health Information Manager's informal description of working as a program manager in epidemiological research in Victoria

Introduction

As a new HIM graduate, I commenced work with the Anti-Cancer Council of Victoria (as it was then known) on a six-month contract to code breast cancer registrations for the Victorian Cancer Registry (VCR). Accepting this position allowed me to continue working and living in Melbourne, which was my primary objective at that time. I also thought it would give me the opportunity to think more about what kind of role I might like to seek as an HIM graduate. Little did I know the wealth of opportunities that exist for HIM graduates working for organisations like The Cancer Council Victoria!

Choosing to code with the VCR was an interesting decision, as coding had been one of my least favourite subjects. Furthermore, the coding system used by the VCR was quite different to the ICD-9 coding I was trained in. Despite this, the logic and knowledge of other systems I had learned in coding were invaluable, enabling me to learn the VCR system quickly. I continue to use my coding skills today; in every project I have worked on either we call on data coded using a standardised system or we need to devise a coding system to record responses to questionnaires.

A big decision

At the conclusion of the first six months with the VCR, my contract was renewed for another six months. About that time I considered returning to regional Victoria, as I had the opportunity to work in a regional country hospital and live closer to my family. I also thought that working as an Health Information Manager in a regional hospital would give me a wider skill base for future work. It was a tough decision, as, at that time, my work with the VCR was not particularly challenging and there were not many positions available in Melbourne. Ultimately, I chose lifestyle over work, stayed in Melbourne and accepted a second six-month contract with the VCR.

Shortly after that, I was invited to join a small working party within the Cancer Epidemiology Centre to provide input on breast cancer coding. The project involved a consultancy at a national and international level and a national workshop. Ultimately, the protocol was accepted and implemented by each of the state cancer registries and selected Victorian BreastScreen services.

Skills existing and skills required

One member of the working party was an epidemiologist who had just received a three-year NHMRC grant to fund a project investigating the relationship between HRT use and mammographic density. I applied to work as the project research assistant.

The project was an incredible logistical challenge and a very steep learning curve. I credit the way our Information Systems subject was run with giving me some of the skills required to meet the challenges I was set. This subject taught me how to seek and utilise resources that are available. Ultimately, we scanned some 14,000 mammograms from each of the eight BreastScreen services in Victoria.

To gain access to the mammograms, we agreed to a 10 working-day turnaround from when we received the mammograms. At the conclusion of the project, I had set up a digitiser with customised imaging software used at only one other site in the world. I also designed and wrote a project database in Microsoft Access that automated our requests for mammograms and learned how to read mammograms for the purpose of computing breast density.

The next position I successfully sought was as Project Manager for the Melbourne Collaborative Cohort Study (i.e., Health 2000–2020, or MCCS) coordinating a Case Cohort study. This was a sub-study of approximately 6000 participants designed to measure selected biochemical markers of diet and hormones in plasma, conduct a standardised pathology review and analyse selected SNPs and polymorphisms using DNA. The study design was selected so that multiple outcomes could be analysed using the same comparison group. In this instance we were investigating breast, prostate and colorectal cancer in addition to type 2 diabetes and fatal cardiovascular events.

The study design was hotly debated, and is only now becoming the study design of choice for sub-studies within larger cohort studies. Through working on this study, I continued to build on the skills learned in epidemiology and biostatistics. Towards the end of this project I commenced a Graduate Diploma in Epidemiology and Biostatistics with Melbourne University.

Always new challenges

Once the design decision was made, I was responsible for coordinating the dispatch of some 12,000 plasma samples to laboratories in both Melbourne and Adelaide. Here I was faced with the challenge of learning how to handle plasma that had been stored in liquid nitrogen and coordinating the dispatch of samples to minimise bias introduced by the order in which the samples were analysed.

In November 2002, I commenced work to coordinate the follow-up of some 38,000 participants in the MCCS still known to be alive. Since that time I have been responsible for setting up a study centre for participants to attend and recruited over 30 staff to work in the study centre. The study centre opened in May 2003; by mid-July 2004 we had reviewed over 9000 of our participants (we still have a long way to go!).

Disclosure

Georgina Marr does not have any relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

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As part of the review we conduct a face-to-face interview and record the information directly on PC. The review also involves collection of an additional blood sample and a series of physical measurements. We provide a print-out of results to our participants before they leave the study centre with customised advice depending on their result. We are also collaborating with a number of other researchers to maximise the opportunity gained while the participant is in the study centre. One such study involves taking a retinal photograph for a study of macular degeneration.

We are currently investigating alternative ways to follow up participants so that we can reach those who no longer live close to Melbourne or are not quite so mobile. We are also about to commence reviewing the Greek and Italian participants; the challenge here has been to seek staff who can speak with these participants in their own language so that we can continue to conduct one-on-one interviews.

My responsibilities in this role have also expanded to include coordinating the management of the MCCS data set and release of MCCS data to researchers. We are increasingly contacted to release information we have collected about the MCCS participants for other researchers to analyse. We are also currently working on a business plan for a new information system to manage contact with the MCCS participants and manage the scientific data collected.

My current role still calls on various aspects of the subjects I studied; for example, I recently reviewed the notes from the Quality Assurance and the Health Information Management subjects.

**Summing up**

At this stage I’m not quite sure what the future holds. I will continue to seek new and challenging opportunities. To work at a higher level directly in the field of epidemiological research I will need to complete a PhD. On the other hand, I really enjoy my management role. When I commenced work as a coder with the VCR in 1994, I did not imagine that I would stay for 12 months, and yet I continue to work at The Cancer Council Victoria as I have been given the opportunity to take on a variety of positions. Not only have I been able to work in a field directly related to the subjects I enjoyed during my study, but I also have the privilege to work with some inspiring, kind and caring people. To be able to look forward to going to work is not always an option and I’m very grateful that it is an option for me, albeit most of the time.

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A Health Information Manager’s informal description of working in data collection for the Victorian Department of Human Services.

Introduction
In common with every Health Information Manager, I have often been asked to explain what a Health Information Manager does and why I chose it as a career. At least readers of Health Information Management Journal will have a clear idea of what a Health Information Manager is capable of, and what the core work is. As to why I chose to be a Health Information Manager, I am not sure why Medical Record Administrator (as it was then still listed in the Victorian University Guide) stood out to me. I had been working in retail management for a number of years after completing a Bachelor of Business in Information Technology out of high school. I guess I was looking for a change and the HIM profession offered a flexible career with a wide range of work; it intertwined my IT and administrative skills and interests and encouraged those anal retentive tendencies that most of us Health Information Managers possess.

My prac at several hospitals provided a rounded view of what ‘traditional’ Health Information Managers were involved in, and my final prac in the Health Data Standards and Systems (HDSS) unit at the Victorian Department of Human Services (DHS) gave me the opportunity to use all my skills and knowledge. Fortunately, a position became available and I have been with HDSS for just over four years now.

A typical day?
I am not sure that there is a ‘typical’ day at the Department, as new issues and crises are always cropping up, but, essentially, the core work of HDSS is to manage four datasets:

- Victorian Admitted Episode Dataset (VAED)
- Elective Surgery Information System (ESIS)
- Victorian Emergency Minimum Dataset (VEMD)
- Agency Information Management System (AIMS).

HDSS manages the functionality of the datasets, coordinating the annual revision process (which often involves arguing against the inclusion of new data fields and codesets each year in an effort to ensure that the datasets remain relevant and dedicated to the basic concept), and distributing the user manuals and performing data-quality exercises to ensure integrity in the data collected, among other things.

Each collection is the responsibility of one Health Information Manager within HDSS (I am responsible for VEMD). We each have other individual responsibilities, but there are other tasks we share or rotate.

A real day
So, my responsibilities — let’s start with today’s tasks, which have been to:

- respond to emails and telephone calls regarding questions and problems relating to the VEMD, VAED, coding and data quality from internal and external sources
- finalise the VEMD Data Timeliness report for the monthly consolidation for discussion with the HDSS manager; this will require various letters to be created based on the performance (or lack of performance) of the VEMD submitting sites
- analyse VEMD data to ensure that edits are performing as required
- make necessary amendments and updates to the 9th (annual) edition of the VEMD User Manual in final preparation for printing and distribution to hospitals
- continue with assessing the DHS software for the VEMD as of 1 July 2004
- complete the minutes for the last EDIS Review Committee meeting, for which I am the secretary (the EDIS Review Committee oversees the VEMD)
- receive and forward for processing VAED submissions sent in via the APET System (the Admitted Patient Entry & Transmission System, a free internet-based system provided by DHS for hospitals to use, if they wish, when submitting data to the VAED)
- query progress on the upgrade of the APET revisions for 1 July 2004
- finalise the Sub-Acute Diagnosis Outstanding Report for the VAED after the monthly consolidation
- generate various performance and penalty assessment letters for sites with outstanding sub-acute data
- assess a VAED report for a testing hospital. Any day procedure centre or hospital that has recently begun operation or recently changed its software must undergo a testing process when an HDSS Health Information Manager makes an extensive range of quality and quantity checks, documenting each test, and providing feedback to the hospital
- respond to queries and requests received via the HDSS helpdesk message bank and email address
- add an item to the HDSS bulletin currently being compiled
- update the HDSS contacts database to ensure that the most recent details are available
- update reference files and links on the HDSS website and submit to IT for loading onto the internet.

Summing up
As you can see, HDSS Health Information Managers have a varied work day and use many of the skills general to Health Information Managers, as well as specialised skills, such as the ability to develop specific computer expertise for packages such as SAS, Access and Excel to perform various data-quality and analysis tasks.

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Health Authority data management and analysis

Rita Triglia

A Health Information Manager’s informal description of working in data management and analysis for the Victorian Department of Human Services

Introduction

My journey as a Health Information Manager began in 1992, when I started the course as a part-time mature-age student at La Trobe University, Melbourne. The main stimulus for undertaking the course was my previous work with databases in a hospital environment. I was especially fascinated by database architecture, which could be used to generate much valuable information from many separate data items. On graduation, I worked in a ‘traditional’ role as a Health Information Manager in a private hospital for a number of months before taking on the role of Data Manager for the In Situ and Small Invasive Breast Cancer Register (ISSIBCR), Victorian Cancer Registry (Cancer Council Victoria). A cohort of cases with a diagnosis of in situ (benign) ductal carcinoma reported in Victoria between 1988 and 1992 was included in the Register. My work involved the annual follow-up of each case in regards to treatment and the recording of any event of recurrence and its nature and location. The four-year experience in this role was invaluable in terms of responsibility in the maintenance of the Register database, conducting audits for data quality and maintaining documentation of the protocol for consistency. It also allowed me to ‘think outside the square’ in terms of the follow-up challenges, such as identifying the doctors responsible for women who had changed their names and/or addresses. During my last year as ISSIBCR Data Manager, I completed a Graduate Certificate of Health Science (Clinical Data Management), Sydney University, via distance education. While the focus was on clinical trials, this course also consolidated a range of different skills in data management.

The current job

Currently, I am working in the Performance Reporting & Analysis Unit, Victorian Department of Human Services (DHS). DHS collects health data from public and private acute hospitals and associated service providers (e.g. Melbourne Ambulance Service). The collected data are used in a number of important areas, such as:

• health services planning
• policy formulation
• casemix funding
• epidemiological research.

Over the four years as a Project Officer, my work has changed a number of times, providing me with a range of valuable experiences. Initially, I focused on the development of an information catalogue for the impending deployment of the Victorian Health Information Reporting System (VHIRS) data warehouse. The VHIRS data warehouse enables a single source of integrated, time-series reporting via database technology and is a move away from disjoint, financial-year, flat-file datasets. The catalogue is a comprehensive repository of descriptions of the data elements and all related information, whose purpose is to ensure that end users have access to all information that can be used in the analysis of the data.

The Unit’s role

The Unit is involved with a range of different data collections, including admitted episodes, emergency presentations, elective surgery and mental health among the largest collections. A number of these data collections are being migrated to the VHIRS environment: it certainly is an exciting time in data management and analysis!

Through the development of VHIRS, I have also had the opportunity of ‘testing’ — a process which ensures that the source data match the data that have been migrated to the VHIRS environment. It involved determining a test plan and then formulating a series of test scripts to achieve this. It required a very methodical (some might say ‘boring’) approach, but, as a Health Information Manager, I was in my element!!!

The Unit has a mix of different professional backgrounds: information technology, science, statistics and even engineering. Each staff member has different strengths and this helps in the diverse range of reporting and analysis requirements. One of the Unit’s responsibilities is to generate a suite of regular standard reports produced for other DHS units/regions and externally, ranging from the Commonwealth Department of Health and Ageing and the Australian Institute of Health and Welfare to ad hoc reporting for researchers.

Summing up

On reflection, the diverse range of subjects included in the HIM course has provided me with a solid background for health-related data management. The emphasis on understanding the general health system, quality management and science subjects have, to my surprise, all been beneficial during my career so far.

It is well recognised that there are a number of skill attributes for a data management/analyst role, including attention to detail, quality focus and time management. However, I believe process management is closely aligned and Health Information Managers are well prepared in this area. Documentation is central to understanding process management: it drives flowcharting and opportunities for process improvement.

‘Experience is a wonderful thing. It enables you to recognize a mistake when you make it again’—Anon

Rita Triglia

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Portsea Safe Haven – from DRGs to refugees

Brendon Gardner

A Health Information Manager’s informal description of producing a complete health service for a group of refugees who were being given safe haven in Victoria

Introduction

I walked into my office as I did every Monday morning, planning the week ahead in my mind and preparing for the potential challenges of the day. Apart from the fact that my wife was 39 weeks pregnant, this was not going to be any ordinary week!

At 8.45am I was called into the CEO’s office for a meeting; nothing unusual about that, as Monday was the time that we always looked at our activity for the previous week. I therefore went armed with the usual paraphernalia: DRG lists, WIES position1 and a swag of activity reports. The discussions began with the focus on the news of the weekend that the Australian Government was going to bring a number of Kosovar refugees from their war-torn country to Australia as part of the United Nations Safe Haven plans.

I recall sitting there thinking, OK, what type of ailments might these people suffer from? Would they require inpatient admission? If so, what revenue could we expect to generate, and then the bombshell hit! The CEO told us that 400 refugees would be housed in the old Army barracks at Portsea and that we would be responsible for establishing an entire health service to cater for any needs that these people may have. Then the second bombshell hit: ‘Brendon, I want you to manage this project!’.

Getting started

Within 30 minutes I was back in my office with a few of the senior staff establishing a health service plan that would cover the following services on the actual site at Portsea:

• inpatients
• outpatients
• mental health
• allied health
• maternal and child health
• dental care
• trauma counselling
• specialist services
• infectious diseases
• public health.

By the end of the day we had progressed from a blank piece of paper to a theoretically fully integrated health service complete with organisational structures, governance processes, clinical delivery models and estimated costings. The plan was presented to our CEO that night and then to the executive staff of the Department of Human Services and the Department of Immigration and Multicultural Affairs. It was well received and formed the template for other, similar services around Australia.

Next day we visited the site that we had to change from a deserted army training camp into a fully functioning health service within four weeks. We had been allocated a two-storey building, complete with waterfront views that had ‘plenty of potential’! Who said The Block was tough going?

The fun and games of the ‘week from hell’ didn’t stop there, as we had to negotiate further details with other service providers that were operating under our umbrella as the lead agency. It was very interesting comparing the culture of organisations involved in this process, as we all came from very different backgrounds, but were delivering services with the same patient-care objectives.

Next steps

We then moved into the recruiting phase in an attempt to fill our organisational structure. For those who are not aware, Portsea is one of the most affluent postcodes in Victoria and sits on a narrow spit of land that divides Port Philip Bay from Bass Strait. It is well known as the playground for the rich and famous, so, despite the fact that it was approaching winter, we were inundated with expressions of interest from staff to be seconded from their existing roles within the Health Service.

Next item on the agenda was dealing with the media and the public. I appeared on radio, did interviews for newspapers and spoke at two public forums outlining what was planned. This was perhaps the most difficult task to adjust to. I had previously delivered many presentations to a variety of audiences, but the topic was always something that I could confidently cover, such as casemix or coding. Now I was in front of people from all walks of life answering questions on the health status of the refugees, addressing public health concerns and outlining what services we were providing and how. I quickly learned that the right choice of words and phrases was critical. One or two ‘off the record’ quotes that were published in a major Melbourne newspaper didn’t help to portray the image we were hoping to achieve.

Success

We went on to run a very successful health service for the refugees, but I have never been involved in a project that has had the level of exposure or commitment from staff. It was a project that bonded everybody involved and is still referred to five years after the event as the service that didn’t lose one day to injury or sickness, which is astonishing given the large number of staff who participated. In all, the service operated for three months and every item of our initial plan, from flu vaccinations to emergency helicopter transport, was used during this time.

1 Weighted Inlier Equivalent Separation – the measurement of hospital admitted patient activity used in Victoria for public hospital funding, based on the Diagnosis Related Group assigned to each episode of acute care.
Summing up

In a matter of five long days I went from using my skills as a Health Information Manager to find myself in a role that was well and truly outside of my comfort zone. In this role I was alternating from Health Service Planning, to Financial Management, to Public Relations, to Media Liaison, to Human Resources Management, to Supply Management, to Contract Negotiations, to Engineering to Occupational Health and Safety, and finally Parenting, as I finished off the biggest week of my professional career with the birth of my first son, Joshua! It just proves that the skills that we are equipped with as Health Information Managers can be transformed and utilised in a variety of situations or roles. If you get an opportunity like this, take your hands off the coding books and grab it!

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