Proceedings of the HIMAA/NCCH 34th National Conference

Health Information Management: Challenging a Changing Landscape
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Preface

Health Information Management: Challenging a Changing Landscape

Health information management professionals have assumed the lead roles in the introduction of scanning and digital health solutions in health institutions, public and private, around the country. They are not just responding to a changing landscape in health service provision, they are creating and challenging it to perform effectively and efficiently. The integration of health care across the primary and tertiary health care divide, and the dual benefits this will bring in improving quality of patient care and containment of costs, is now not just a goal, it is imminent.

Never before has there been so many opportunities for health information management professionals to challenge and shape the health landscape.

The HIMAA and NCCH National Conference is an annual event that allows the sharing of knowledge and experiences gained from health information related projects and research. The theme this year reflects the ground-changing influence health information professionals are having on the landscape in which they work. A number of current health information and digital health topic areas are addressed in these proceedings, including: education and workforce issues; information governance; clinical documentation improvement; data quality; coding quality; EHRs; and the research culture in health information management.

The management of health information has always been an integral part of health care delivery, research and planning for health services. With health information now increasingly documented, accessed, aggregated, mined and shared electronically, the value and uses of health information have broadened. Our national conference brings together leading research, opinions and case studies relating to the value and use of quality health information and clinical classification systems. These proceedings present the peer reviewed research papers, professional practice abstracts, and posters from our annual key face-to-face conference.

Dr Kerryn Butler-Henderson,
Chair, Academic Panel

Linda Westbrook
Conference Chair

Vera Dimitropoulos
Conference Deputy Chair
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Peer-reviewed papers
Challenging the data gaps in health outcomes due to domestic violence

Miriam Lum On and Michelle Gourley – Australian Institute of Health and Welfare

Background

Exposure to domestic violence (also known as intimate partner violence (IPV)) has serious health outcomes for Australian women and their children, and its prevention is a recognised national priority and subject of the recent Victorian Royal Commission into Family Violence. Despite this, there are data gaps and limitations to that information available to calculate the health burden of this serious problem. A national burden of disease project examining the impact of IPV against Australian women was undertaken by the Australian Institute of Health and Welfare (AIHW), with funding from Australia’s National Research Organisation for Women’s Safety (ANROWS) and published in 2016. This project was an extension of the results from the Australian Burden of Disease Study 2011.

Aim/objectives

This paper will focus on the data sources and analytical methods that underpinned the project, particularly the broadening of definitions of IPV and inclusion of emotional abuse. This paper will briefly explore the strengths and limitations of the inputs to burden of disease analysis.

Method

Burden of disease studies measure the combined impact of living with illness and injury (non-fatal burden) and dying prematurely (fatal burden) on a population. The unit of measure in burden of disease analysis is the disability adjusted life year (DALY). One DALY equals one lost year of health life. The first estimate of burden of disease associated with IPV globally was developed in Victoria by the Department of Human Services using 2001 data (Victorian Health Promotion Foundation 2004).

Comparative risk assessment involves five key steps:

1. Select linked diseases (risk-outcome pairs) to be included in the analysis based on criteria about causal associations.

2. Estimate the population-level distribution of risk factor exposure.

3. Calculate the effect of risk factors on linked diseases.

4. Define the theoretical minimum risk exposure level – in the case of IPV, this minimum is zero or no exposure.

5. Calculate the population attributable fraction – which is where we estimate the proportion of burden (calculating from the Australian Burden of Disease Study 2011) that could have been avoided if the population had never been exposed to the risk factor.
As a first step, a systematic literature review was undertaken (Lum On, Ayre, Webster, & Moon 2016). There are many health outcomes and behaviours that the literature has shown to be associated with exposure to IPV. However, potential linked diseases were assessed according to rigorous criteria to determine the strength of evidence in the literature, including:

- causality
- appropriateness of how IPV and the disease were measured
- consistency of findings (across studies)
- controlling for other factors
- relevance to Australian women in 2011

The literature review found that there was strong evidence for a causal effect of IPV on depressive disorders, early pregnancy loss, homicide and violence (injuries due to assault). It found probable evidence for a causal effect of IPV on anxiety disorders, suicide and self-inflicted injuries. Possible evidence for a causal effect of IPV on was found for alcohol use disorders and children born prematurely or with a low birth weight.

To estimate the population-level distribution of exposure, the Australian Bureau of Statistics (ABS) Personal Safety Survey (or PSS 2012) was used as the primary data source (ABS 2013). Exposure was assessed for two time points, lifetime (from 15+ years) and in the previous 12 months. Data was obtained for physical and sexual violence by a cohabiting partner and non-cohabiting partner, and emotional abuse by cohabiting partners. There are many overlaps between these definitions, and in some cases the proportion of overlap across a woman’s lifetime is not known. Using the data in PSS 2012, the lifetime exposure to emotional abuse by a cohabiting/non-cohabiting partner was unknown; and this highlights a key opportunity for future data collections.

The systematic review found a range of epidemiological studies to inform the effect of risk factors on linked diseases (this was the statistical measure of the strength of the relationship between two variables, exposure to IPV and the disease outcome. In most cases this was a relative risk).

For some linked diseases, direct evidence was also used to assess these estimates of effect, with mortality statistics. As an example, the National Homicide Monitoring Program 2010–12, and the National Hospital Morbidity Database (NHMD) 2011–12 were used for homicide and violence (injuries due to assault). To illustrate, data was obtained from the NHMD with external causes of morbidity and mortality codes related to assault by an intimate partner (ICD-10-AM codes X85–Y09 with a 5th digit of 0) and applied these to non-fatal injuries as direct evidence. On average 41% of hospitalised assaults on women in 2010–2012 were perpetrated by an intimate partner. However, it worth noting that the NHMD coded data does not distinguish between cohabiting or cohabiting/non-cohabiting relationships. Further, many injuries due to assault are not admitted to hospital, and a high proportion of hospitalisations for assault do not having perpetrator type recorded (although this may be rising). In 2013–14, nearly 60% of hospitalised assaults against women were perpetrated by a spouse or domestic partner (AIHW 2017, p.1).
Results

Overall, it was estimated that 1.4% of the disease burden experienced by women aged 18 years and over in 2011 was attributable to physical/sexual IPV by a current or previous cohabiting partner. When the definition of IPV was broadened to include physical/sexual IPV by non-cohabiting partners, it was estimated that 2% of the burden experienced by Australian adult women could have been avoided if no exposure to IPV occurred. When emotional abuse was also considered, it was estimated that 2.2% of all burden experienced by adult women was due to IPV and could have been avoided if no exposure to IPV occurred. Using the broader definition of IPV (cohabiting and non-cohabiting), the rate of burden attributable to physical/sexual IPV was estimated to be five times greater among Indigenous women than non-Indigenous women in 2011 once the effects of age were removed. In total, it was estimated that this type of IPV was responsible for 6.4% of overall burden among Indigenous women (Ayre, Lum On, Webster, Gourley, & Moon 2016).

Among women aged 18 to 44 years, IPV was the biggest single risk factor when violence in all intimate relationships was included, bigger than smoking, alcohol use or being overweight or obese (Webster 2016).

There was little change in age-standardised rates of burden attributable to IPV between 2003 and 2011 (there was an increase from 4.4 to 4.9 DALY per 1000 adult women). This was mostly because there was little change in the burden of many of the diseases linked to IPV (particularly anxiety and depressive disorders), and because the rate of exposure to IPV was stable across these two time-points based on available evidence (Ayre et al. 2016).

Discussion

There were several strengths in this research project, first and foremost that transparent, detailed estimates were based on current best-practice methods for burden of disease analysis. The benefit of this type of analysis is that it allows comparison of the contribution of risk factors to both fatal and non-fatal burden of IPV, and across the various disease outcomes and with other risk factors.

As the first step in this research project, the epidemiological studies used to identify diseases linked to IPV were assessed for their relevance to Australian women (only studies published 2000 and from comparable high-income countries were considered in the literature review), rather than using global estimates of effect without evaluating their specific application to the population of interest. Some diseases were not able to be included due to insufficient causal evidence in the literature (e.g. coronary heart disease) despite known associations.

Another key strength was the use of the PSS 2012 as the source of IPV prevalence, which is a nationally representative, high quality survey. This analysis allows it to be used in combination with other key data sources to strengthen the evidence known on the impact of IPV. Of note, this project included estimates of attributable burden using a broader definition of IPV than used in the ABDS 2011, one that included non-cohabiting partners as well as emotional abuse for the first time in any known burden of disease studies.

A key limitation of the project was that data on the prevalence of IPV for Aboriginal and Torres Strait Islander women are limited (and specifically comparable to the definitions used in PSS 2012) which means that the estimates for the Indigenous population must be interpreted with caution. After consultation with Indigenous health experts an Indigenous: total population rate ratio was applied to national IPV prevalence estimates. Additionally, no data sources were identified appropriate for estimating Indigenous exposure rates for emotional abuse. Similarly, evidence is not yet available to calculate burden of disease estimates on non-partner sexual assault or estimates for children witnessing IPV. Another limitation was that the current evidence does not enable consideration of time elapsed since exposure on the linked disease.
Conclusion

This project provided evidence that IPV is a significant health problem for Australian women. The broadening of definitions of IPV and inclusion of emotional abuse enable use for policy and planning purposes, and have a greater level of transparency and increased specificity to Australian women. It is anticipated that the methodology developed in this project could be used for subsequent burden of disease studies, enabling monitoring over time. This project is a great example of how data can be used in a systematic way to challenge the evidence on health outcomes due to domestic violence.

References


Acknowledgements

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The authors would like to acknowledge Julie Ayre, Kim Webster and Lynelle Moon as the authors of the full research report, and the contributions of Peta Cox.
Systematic review of the impact of diagnosis-related groups – prospective payment system on health care: empirical evidence from China

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Introduction

Diagnosis related groups prospective payment system (DRGs-PPS) has been used in most developed countries. A number of low and middle income countries have also adopted or in trial of DRGs-PPS. There are widely shared reasons for the origin and spreading of DRG-PPS – the pressure of limited health resources and rapidly increased health care cost and shared objectives of applying DRGs-PPS: to contain rapidly increased health care cost, to increase the efficiency and transparency of the health services, for hospital comparison, benchmarking, budget planning or other management purposes.

There are generally three types of health payment methods: fee-for-service (FFS), per capital fee/per-case payment and global budget (ceiling). The former is weakest in controlling health cost, and may lead to overtreatment. The global budget is the strongest in controlling cost, but may lead to reduction of efficiency (long waiting time/list) and under-treatment of patients. The DRGs-PPS lies in the middle of the two extremes, due to its nature in defined bundled payment unit as per case in each DRG groups which accounted for the variation of consumption of health resources. Theoretically, if been well designed, the DRGs-PPS would contain health cost (by reducing cost per case and unnecessary services), increase the output (i.e. number of admission) and efficiency (by reducing the length of stay) and refine health care resources (transfer resources to department of high efficiency). However, there is concern about the side-effect of DRGs-PPS. If the incentives of per case cost contain are too strong, patients may be undertreated, discharged earlier than should be, or be selected or treated differently if the incentives are unbalanced between groups, which may harm the quality and equality of health care.

To date most studies of the impact of DRGs-PPS came from developed countries such as the US and Europe, and findings are mixed. However, low- and middle- income countries may have different or special challenges and difficulties in adopting DRGs-PPS, such as weaker economy and its inequality, poorer population health, weaker health care infrastructure and delivery system, workforce and information system et.al. Evidence from these countries is needed to inform their health care reform and healthy policy making but is sparse. As a rapidly developing low- and middle-income country, China is reforming its health care system and health care payment method is a core measure. The piloting of DRGs-PPS has started from 2011, aiming to replace the former fee-for-service (FFS) system. Systematic synthesis and critical appraisal of current best available evidence is vital to guide the following action, but has not been conducted.
Objectives

We addressed this need by systematically reviewing the evidence on the impact of DRGs-PPS on health care system from empirical studies in mainland China. Though China is unique in many characteristics, the evidence and experience may be valuable or inspirable for other low- and middle-income countries in similar situation.

Methods

Inclusion and exclusion criteria

All empirical studies in China evaluating the impact of DRGs-PPS on health care were eligible. Inclusion criteria were:

- Study design: randomized controlled trial (RCT), quasi-RCT, parall William el controlled study, time-series study or before-after study
- Participants: all types of patients
- Intervention: DRGs-PPS
- Comparison: other types of payment method of health care, namely global budget, FFS or other types of per-case payment method.
- Outcomes: cost, outputs, efficiency, quality, and equality of health care

No language limitation was applied.

Exclusion criteria: reviews, editorials or comments without empirical data.

Search of literature databases

Electronic databases of PubMed, Cochrane Library, EMBASE, CNKI and SinoMed (CBM) were searched. MeSH and free-texts related to DRGs were used, such as DRGs, DRG*, Diagnosis-related group, Diagnosis related group*, prospective payment system, TEFRA Healthcare Resource Group system. The scrutiny of reference lists of included studies was also conducted.

Study selection and data extraction

Study selection was conducted by two reviewers (KZ, DZ or ZJL) independently according to the study inclusion and exclusion criteria. Disagreements were resolved by discussion.

Data extraction was performed by one reviewer (KZ) using customised data extraction form. Data extracted were: first author, publication year, study location, setting, study design, period, type of participants, type of DRGs-PPS, type of control, ancillary policies, and outcomes of interests.

Data synthesis

Meta-analysis was not applicable due to the heterogeneity of studies as regard to methodology and outcomes. Therefore, narrative synthesis of evidence was conducted. Characteristics of included studies were summarized. The synthesis of evidence was performed by outcome and summarised in aspects of cost, output, efficiency, quality and equality of health care. We considered the effect of DRGs-PPS as positive when the cost of health care declined or increased less than the comparison, the outputs and quality of care increased and the equality is enhanced, whereas negative when they are opposite. Evidence from parallel controlled studies was synthesised separately from before-after studies due to its methodological merits in preventing bias. Endpoint comparison and ‘difference to difference’ (DID) comparison (compare the difference from baseline between the two groups) were also summarised separately when data were available.
RESULTS

Records identified through database search n=5475

Removed duplicate n=23

Title and abstracts reading n=5452

Title/abstract Excluded n=4747

Full text reading n=705

Full texts excluded n=285

Full text re-examination n=20

Study included n=9

Figure 1 CONSORT flow chart of study selection

Study selection and characteristics

In total, 5475 citations were identified from systematic literature search. Finally, 9 studies were included through title and abstract scrutiny and full text reading. The characteristics of included studies were presented in Table 1. Among them, 7 studies were carried out in Beijing, 1 in Tianjin, 1 study did not report the location of study. There were 4 before-after studies and 5 parallel-controlled studies. All studies were conducted in general tertiary hospital, except 1 in secondary hospital. 7 studies examined general patients (108 DRG groups), while 1 study examined women of hospital delivery and another examined patients undergoing cholecystectomy. All studies compared DRGs-PPS with FFS. Outcomes were classified as cost (i.e. settlement fee, out-of-pocket payment, insurance payment), outputs (number of discharges, case-mix index (CMI)), efficiency (length of stay), quality (i.e. 2 weeks readmission rate (2WRR)) and equality of health care (difference of health services between groups). Three among 5 parallel-controlled studies reported “difference in difference” method; the other 2 made endpoint comparison only.
Table 1 Characteristics of included parallel-controlled studies

<table>
<thead>
<tr>
<th>Study</th>
<th>City</th>
<th>Study period</th>
<th>Facility type</th>
<th>Patients</th>
<th>Intervention</th>
<th>Comparison</th>
<th>N</th>
<th>COST</th>
<th>OUTPUT</th>
<th>Efficiency</th>
<th>Quality</th>
<th>Equality</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 Hu M</td>
<td>Beijing</td>
<td>2012 –2013</td>
<td>tertiary hospital</td>
<td>general patients</td>
<td>Beijing DRGs, 6 hospitals</td>
<td>FFS, Number of hospitals</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>2014 Song XX+</td>
<td>Beijing</td>
<td>2011 –2012</td>
<td>tertiary hospital</td>
<td>general patients with urban worker health insurance</td>
<td>Beijing DRGs, groups 108, DRGs-FFS patients in DRGs hospitals</td>
<td>FFS, Number of hospitals</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>2014 Hu M</td>
<td>Beijing</td>
<td>2011 –2012</td>
<td>tertiary hospital</td>
<td>general patients with urban worker health insurance</td>
<td>Beijing DRGs, 6 hospitals</td>
<td>FFS, 2 hospitals</td>
<td>NR</td>
<td>59.268</td>
<td>34.11</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
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<tr>
<td>2012 Zhang MM</td>
<td>Beijing</td>
<td>2011 –2012</td>
<td>tertiary hospital</td>
<td>general patients with urban worker health insurance</td>
<td>Beijing DRGs, 6 hospitals</td>
<td>FFS, 8 hospitals</td>
<td>NR</td>
<td>59.268</td>
<td>34.11</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

†separation between medical and drug services, ancillary policy were not reported in other studies.
Table 2 Characteristics of included before-after studies

<table>
<thead>
<tr>
<th>Study</th>
<th>City</th>
<th>Study period</th>
<th>Facility type</th>
<th>Patients intervention</th>
<th>Comparison</th>
<th>N</th>
<th>COST</th>
<th>Output</th>
<th>Efficiency</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wang HB+</td>
<td>NR</td>
<td>2010-2012</td>
<td>36 DRGs groups, cholecystectomy</td>
<td>unclear</td>
<td>DRGs</td>
<td>251</td>
<td>Settlement fee</td>
<td>Item fee</td>
<td>Insurance payment</td>
<td>Out-of-pocket</td>
</tr>
<tr>
<td>Li XL</td>
<td>Tianjin</td>
<td>2006-2011</td>
<td>1 tertiary hospitals</td>
<td>maternity insurance</td>
<td>unclear DRGs</td>
<td>3232</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hu M</td>
<td>Beijing</td>
<td>1996-2001</td>
<td>1 tertiary hospitals</td>
<td>general patients</td>
<td>Beijing DRGs</td>
<td>8181</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wu XX*</td>
<td>Beijing</td>
<td>2010-2011</td>
<td>1 tertiary hospitals</td>
<td>general patients</td>
<td>Beijing DRGs</td>
<td>49649</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wang HB+</td>
<td>NR</td>
<td>2010-2012</td>
<td>36 DRGs groups, cholecystectomy</td>
<td>unclear</td>
<td>DRGs</td>
<td>251</td>
<td>Settlement fee</td>
<td>Item fee</td>
<td>Insurance payment</td>
<td>Out-of-pocket</td>
</tr>
</tbody>
</table>

* Ancillary policy: clinical pathway, patients safety policy; +Standardized disease classification, refine payment method, increase rate of reimbursement, strengthen cost surveillance, etc.
Health care cost

The effect of DRGs-PPS on health care cost was reported by 8 studies (5 parallel-controlled studies\textsuperscript{6-10} and 3 before-after studies\textsuperscript{11-13})

The settlement fee was reported by all the 5 parallel-controlled studies\textsuperscript{6-10} Four of them showed that DRGs-PPS was effective in containing settlement fee comparing with FFS\textsuperscript{6-9} among which three studies used “difference in difference” method\textsuperscript{7-9} while another compared the endpoint\textsuperscript{6} However, Zhang 2015 et.al found that the settlement fee in DRGs-PPS group increased more that FFS group during 2012–2013\textsuperscript{10}

There were 3 before-after studies reported the settlement fee\textsuperscript{11-13} among which one study showed DRGs-PPS was effective in containing cost while other two did not. Li XL 2012 and colleagues found that the settlement fee after applying DRGs-PPS (6049) was 842 RMB less than that under FFS (6891) in women undergoing hospital delivery. However, Hu M 2013 et.al found that the settlement fee was not just 2075 RMB higher after applying DRGs-PPS but also increased more rapidly compared with last year (9.7%) than under FFS (5.8%). Wang HB 2015 found that the total settlement fee of the hospital was 2,625,000 higher under DRGs-PPS than previous year under FFS in a secondary A level hospital\textsuperscript{13}

Three parallel-controlled studies all showed that DRGs-PPS was strongly effective in containing item fee and out-of-pocket payment compared with FFS\textsuperscript{6, 7, 10} As regard to insurance payment, the evidence from 4 parallel-controlled studies were mixed. Hu M 2012 et.al reported that the insurance payment per CMI in DRGs-PPS group was 558 RMB less than that of FFS group during the first half year of 2012\textsuperscript{6} Song XX 2014 et.al found that it reduced in DRGs-PPS group (-66.83) while that of FFS group increased (75.26).\textsuperscript{8} However, two larger studies showed that the insurance payment per CMI in DRGs-PPS was 977 to 1362 RBM higher or increased 385 RMB more than FFS group during 2011–2012 or 2012–2013\textsuperscript{7, 10} Insurance payment was also reported in one before-after studies (2015 Wang HB), in which its trend of increase was not significantly changed before (0.59%) and after (0.3%) the implementation of DRGs-PPS\textsuperscript{13}
### Table 3 Summary of results of parallel controlled studies

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Endpoint comparison</th>
<th>Difference in difference</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEALTH CARE COST, RMB</strong></td>
<td>DRGs-PPS FFS</td>
<td>DRGs-PPS FFS</td>
<td></td>
</tr>
<tr>
<td>Settlement fee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012 Hu M</td>
<td>16594 17522</td>
<td>-928</td>
<td>Positive</td>
</tr>
<tr>
<td>2014 Hu M</td>
<td>16837 16652</td>
<td>-291 45</td>
<td>Positive</td>
</tr>
<tr>
<td>2014 Song XX</td>
<td>-30.92 -26.57</td>
<td>-4.35</td>
<td>Positive</td>
</tr>
<tr>
<td>2015 Jian WY</td>
<td>-434 71</td>
<td>-505</td>
<td>Positive</td>
</tr>
<tr>
<td>2015 Zhang MM</td>
<td>457 179 278</td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>Item fee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012 Hu M</td>
<td>15113 17522</td>
<td>-2409</td>
<td>Positive</td>
</tr>
<tr>
<td>2015 Zhang MM</td>
<td>15152 16832</td>
<td>-1680 117 180 -63</td>
<td>Positive</td>
</tr>
<tr>
<td>Out-of-pocket payment (per CMI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012 Hu M</td>
<td>4316 4874</td>
<td>-558</td>
<td>Positive</td>
</tr>
<tr>
<td>2014 Hu M</td>
<td>4318 5109</td>
<td>-791</td>
<td>Positive</td>
</tr>
<tr>
<td>Insurance payment (per CMI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012 Hu M</td>
<td>12278 12648</td>
<td>-370</td>
<td>Positive</td>
</tr>
<tr>
<td>2014 Hu M</td>
<td>12519 11542</td>
<td>977</td>
<td>Negative</td>
</tr>
<tr>
<td>2014 Song XX</td>
<td>-66.83 75.26</td>
<td>-142.09</td>
<td>Positive</td>
</tr>
<tr>
<td>2015 Zhang MM</td>
<td>12865 11503</td>
<td>1362 346 -39 385</td>
<td>Negative</td>
</tr>
<tr>
<td>Drug fee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014 Song XX, all patients</td>
<td>-0.001 0.00004</td>
<td>-0.00104</td>
<td>Neutral</td>
</tr>
<tr>
<td>2014 Song XX, insured patients</td>
<td>-0.002 0</td>
<td>-0.002</td>
<td>Neutral</td>
</tr>
<tr>
<td>2015 Zhang MM, (% item &amp; drug)</td>
<td>-1 0</td>
<td>-1</td>
<td>Neutral</td>
</tr>
<tr>
<td>OUTPUT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case mix index</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012 Hu M</td>
<td>1.3391 1.2381</td>
<td>0.101</td>
<td>Positive</td>
</tr>
<tr>
<td>2014 Hu M</td>
<td>1.3328 1.394</td>
<td>-0.0612 -0.0005 0.0001 -0.0006</td>
<td>Negative</td>
</tr>
<tr>
<td>2015 Jian WY</td>
<td>1.39 1.39</td>
<td>0</td>
<td>Neutral</td>
</tr>
<tr>
<td>2015 Zhang MM</td>
<td>1.3694 1.3052</td>
<td>0.0642 0.0366 -0.0888 0.1254</td>
<td>Positive</td>
</tr>
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</table>
### Table 3 Summary of results of parallel controlled studies – continued

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Endpoint comparison</th>
<th>Difference in difference</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of patients discharged</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014 Song XX, insured patients</td>
<td></td>
<td>38.13% 27.40% 0.1073</td>
<td>Positive</td>
</tr>
<tr>
<td>2014 Song XX, all patients</td>
<td></td>
<td>41.32% 23.72% 0.176</td>
<td>Positive</td>
</tr>
</tbody>
</table>

**EFFICIENCY**

<table>
<thead>
<tr>
<th>Length of stay, day</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 Hu M</td>
<td>7.01 10 -2.99</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>2014 Hu M</td>
<td>6.97 7.44 -0.84</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>2015 Jian WY, all hospital patients</td>
<td>8.9 10 -1.1</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>2015 Zhang MM</td>
<td>6.3 6.66 -0.36</td>
<td>Positive</td>
<td></td>
</tr>
</tbody>
</table>

**QUALITY**

<table>
<thead>
<tr>
<th>2 weeks readmission rate, %</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 Hu M</td>
<td>6.45 7.36 -0.91</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>2014 Hu M</td>
<td>4.26 3.58 0.68</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>2015 Jian WY, all hospital patients</td>
<td>No difference</td>
<td>Neutral</td>
<td></td>
</tr>
<tr>
<td>2015 Jian WY</td>
<td>2.85 6.84 -3.99</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>2015 Zhang MM</td>
<td>4.12 5.06 -0.94</td>
<td>Positive</td>
<td></td>
</tr>
</tbody>
</table>

**EQUALITY**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 Hu</td>
<td></td>
<td>Negative The number of outlier of DRGs-PPS patients decreased, while that of FFS increased.</td>
<td></td>
</tr>
<tr>
<td>2015 Jian WY</td>
<td></td>
<td>NEGATIVE Hospital fee for DRGs-FFS patients rose more rapidly, stayed longer in hospital, and had higher 2 weeks admission rate than city tertiary hospital average, while lower CMI.</td>
<td></td>
</tr>
<tr>
<td>2015 Zhang MM</td>
<td></td>
<td>NEGATIVE The number of outlier of DRGs-PPS patients decreased, while that of FFS increased.</td>
<td></td>
</tr>
</tbody>
</table>
Hospital outputs

There were 6 studies (5 parallel-controlled and 1 before-after studies) reported outcomes of hospital outputs such as CMI, number of admissions (NA) and number of surgeries (NOS).

Among the 4 parallel-controlled studies, 3 reported positive (increase) of outputs in DRGs-PPS hospitals than FFS hospitals. Hu M 2012 et al reported the CMI was higher in DRGs-PPS hospitals than FFS hospitals from 2012.01–2012.06. Song XX 2014 et al reported the number of discharge of insurance-covered inpatients and all inpatients per hospital increased more in DRGs-PPS hospitals than in FFS hospitals from 2011.07–2012.07.8 Zhang MM 2015 et al. found that CMI increased in DRGs-PPS hospitals, but decreased in FFS hospitals during 2012–2013. However, Hu M 2014 et al. found that the change of CMI was not different between DRGs-PPS and FFS hospitals from 2011.01-2012.12.

A before-after study showed that the number of admissions grown slowly, while the number of surgeries grow more rapidly, but CMI were stable under DRGs-PPS (2012–2011) than FFS (2011–2004).

Table 4 Summary of results of included before-after studies

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Endpoint comparison</th>
<th>Difference D-F</th>
<th>Change vs. previous</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH CARE COST, RMB</td>
<td>DRGs-PPS</td>
<td>FFS</td>
<td>DRGs-PPS</td>
<td>FFS</td>
</tr>
<tr>
<td>Settlement fee</td>
<td>6049.1</td>
<td>6891.1</td>
<td>-842</td>
<td>Positive</td>
</tr>
<tr>
<td>2013 Hu M</td>
<td>17160</td>
<td>15085</td>
<td>2075</td>
<td>9.70%</td>
</tr>
<tr>
<td>2015 Wang HB (100,000)</td>
<td>2472.37</td>
<td>26.25</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Drug fee</td>
<td>849.2</td>
<td>1502.3</td>
<td>-653.1</td>
<td>Positive</td>
</tr>
<tr>
<td>2012 Li XL</td>
<td>1233.3</td>
<td>1596.8</td>
<td>-363.5</td>
<td>Positive</td>
</tr>
<tr>
<td>Examination fee</td>
<td>653.9</td>
<td>1072.4</td>
<td>-418.5</td>
<td>Positive</td>
</tr>
<tr>
<td>Treatment fee</td>
<td>652.4</td>
<td>911.9</td>
<td>-259.5</td>
<td>Positive</td>
</tr>
<tr>
<td>Other service fee</td>
<td>1235.5</td>
<td>876.3</td>
<td>359.2</td>
<td>Negative</td>
</tr>
<tr>
<td>Material fee</td>
<td>1424.9 ± 11.1</td>
<td>931.4 ± 47.8</td>
<td>494</td>
<td>Negative</td>
</tr>
<tr>
<td>Operation fee</td>
<td>46.64</td>
<td>40.18</td>
<td>6.46</td>
<td>Negative</td>
</tr>
<tr>
<td>Insurance payment, %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUTPUT</td>
<td>1.165</td>
<td>1.171</td>
<td>-0.006</td>
<td>-0.50%</td>
</tr>
</tbody>
</table>
Efficiency

There were 8 studies (4 before-after studies\textsuperscript{11,14} and 4 parallel-controlled studies\textsuperscript{6, 7, 9, 10}) reported outcome of hospital efficiency (LOS) but results were mixed. Among the 4 parallel-controlled studies, 3 studies reported the LOS of DRGs-PPS patients was shorter \textsuperscript{6, 7, 9} and 1 study reported it declined more than FFS patients.\textsuperscript{7} However, 2015 Jian WY et.al found that there was no difference of LOS between DRG-PPS hospitals and FFS hospitals if all patients were compared.\textsuperscript{9} Zhang MM 2015 et.al reported that the LOS declined more in FFS hospitals than in DRGs-PPS hospitals during 2012–2013.\textsuperscript{10} Among the 4 before-after studies, one study reported the LOS declined than under FFS,\textsuperscript{11} 2 studies reported the change was insignificant,\textsuperscript{12, 14} while one study reported the LOS increased by 0.48 days after implementation of DRGs-PPS in a secondary A level hospital.\textsuperscript{13}

Quality of care

There were 6 studies (4 parallel-controlled studies\textsuperscript{6, 7, 9, 10} and 2 before-after studies) reported outcomes related to quality of care. 11, 14 The 4 parallel-controlled studies all reported the 2 weeks readmission rate (2WRR), among which 3 studies showed that the 2WRR was lower in

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|c|}
\hline
\textbf{Number of admissions} & \textbf{Year} & \textbf{Number} & \textbf{Number} & \textbf{Increase/Decrease} & \textbf{Change}\textsuperscript{a} \textbf{Change}\textsuperscript{b} \\
\hline
2013 Hu M & 70400 & 65069 & 5331 & 8.20\% & 11.80\% \textbf{Negative} \\
\hline
\textbf{Number of surgeries} & \textbf{Year} & \textbf{Number} & \textbf{Number} & \textbf{Increase/Decrease} & \textbf{Change}\textsuperscript{a} \textbf{Change}\textsuperscript{b} \\
\hline
2013 Hu M & 44015 & 37515 & 6500 & 17.30\% & 14.60\% \textbf{Positive} \\
\hline
\textbf{Number of DRGs groups} & \textbf{Year} & \textbf{Number} & \textbf{Number} & \textbf{Increase/Decrease} & \null \null \\
\hline
2013 Hu M & 551 & 552 & -1 & \null \null \textbf{Neutral} \\
\hline
\hline
\textbf{EFFICIENCY} & \null & \null & \null & \null & \null \\
\hline
\textbf{Length of stay, day} & \textbf{Year} & \textbf{Number} & \textbf{Number} & \textbf{Increase/Decrease} & \textbf{Change}\textsuperscript{a} \textbf{Change}\textsuperscript{b} \\
\hline
2012 Li XL & 5.6 & 8.2 & -2.6 & \null \null \textbf{Positive} \\
2013 Hu M & 6.62 & 6.64 & -0.02 & -0.30\% & -7.50\% \textbf{Neutral} \\
2013 Wu XX & 6.53-7.52 & 5.95-7.20 & \null & \null \null \null \null \null \\
2015 Wang HB & 4.98 & 4.5 & 0.48 & \null \null \textbf{Negative} \\
\hline
\textbf{QUALITY} & \null & \null & \null & \null & \null \\
\hline
\textbf{Vaginal delivery rate, \%} & \textbf{Year} & \textbf{Number} & \textbf{Number} & \textbf{Increase/Decrease} & \null \\
\hline
2012 Li XL & 55.9 & 22.7 & 33.2 & \null \null \textbf{Positive} \\
2013 Wu XX & 97.97 & 97.87 & 0.1 & \null \null \textbf{Neutral} \\
\hline
\textbf{Cure or improvement rate, \%} & \textbf{Year} & \textbf{Number} & \textbf{Number} & \textbf{Increase/Decrease} & \null \\
\hline
2013 Wu XX & 0.89 & 1.79 & -0.9 & \null \null \textbf{Positive} \\
\hline
\textbf{Nosocomial infection rate, \%} & \textbf{Year} & \textbf{Number} & \textbf{Number} & \textbf{Increase/Decrease} & \null \\
\hline
2013 Wu XX & 0.57 & 0.94 & -0.37 & \null \null \textbf{Positive} \\
\hline
\end{tabular}
\end{table}
However, one study reported that the 2WRR increased in DRGs-PPS hospitals compared with FFS hospitals in 2011–2012.7

Both of the 2 before-after studies reported positive impact of DRGs-PPS on quality of care, including increased vaginal delivery rate for pregnant women11 and reduction of nosocomial infection rate and 1 WRR.14 Wu XX and colleagues 2013 found that there was no significant pre-post difference of cure/improvement rate at discharge.14

Equality of care

Three parallel-controlled studies reported outcomes related to the equality of care.7,9,10 There was evidence that patients exempted from DRGs-PPS were treated differently from those within. Hu 2014 et.al and Zhang MM 2015 et.al found that the number of outlier of settlement fee decreased in DRGs-PPS patients, while that of FFS increased.7,10 Jian WY 2015 et.al reported that hospital fee of DRGs grouped patients decreased, but rose more rapidly for FFS charged patients. The later also stayed longer in hospital, and had higher 2 WRR than city tertiary hospital average and DRGs-PPS patients.9

Discussion

To our best knowledge, this is the first systematic review comprehensively accumulating current evidence of the impact of DRGs-PPS on health care in China. Nine studies with more than 532,086 patients from 2012-2015 were included. There were five key findings:

1. The study reaffirmed that DRGs-PPS had an incentive for hospitals to contain health care cost;
2. It had neutral or positive effect on hospital outputs and efficacy, reflecting on the increased number of admissions or CMI;
3. It was effective in increasing the efficacy of health care by reducing the LOS;
4. No obvious side-effect on quality of care was observed;
5. The equality of heath care may be hampered as patients exempted from DRGs-PPS may be treated differently from those within.

The findings of our study were in accordance with a previous SR conducted by Brügger and colleagues (2009), which accumulated evidence predominantly from high-income countries.5 They concluded that

1. There may have been a reduction of costs and an increase in efficiency following the introduction of DRG, though opposite evidence also existed;
2. There was no measurable reduction in quality of care considering mortality or readmission rate with some minor quality reductions in other areas were reported in a few studies;
3. There may have been an adverse effect on equity/equal access, though the evidence is weak and the findings do not suggest an effect of large magnitude.

It is aware that the impact of DRGs-PPS on health care may be affected by the context it is implemented and other confounding factors, such as the coverage of DRGs-PPS in the population, the setting of payment rate of DRGs-PPS system, the shared proportion of the DRGs-PPS payment in the health care payment system, and measures of health care quality et.al.

The number of DRGs groups in included studies was 108 at maximum, and there was a substantial variance of the proportion of patients paid by DRGs-PPS among trial hospitals. It suggested that on one side, the limited coverage of DRGs-PPS may reduce the effect of cost contain of DRGs-PPS. On the other side, as not all patients were covered by DRGs-PPS, the equality of health care may be harmed, as patients exempted from DRGs-PPS may be treated differently from those within, with higher cost and lower quality of care as found in our study. This indicated a “cost-shift” phenomenon and highlighted the importance of universal coverage of all patients under a systematic DRGs-PPS system to prevent the potential side-effect of DRGs-PPS.
Second, the out-of-pocket payment plays an important role (around 30%) in the overall health care payment in China, which was also shown in our included studies. It is grateful to find that that the out-of-pocket payment was reduced under DRGs-PPS. However, the overall payment was compensated by the increase of health insurance payment. The effect of DRGs-PPS on containing the overall cost may be limited due to the mixture of payment sources. Whether the overall cost of care will shift to out-of-pocket payment, if the insurance payment (DRGs-PPS payment) become tighter, warrants further investigation. This also suggested the vital role of increased contribution from health insurance to prevent the increase of individual burden.

Third, the price setting (tariffs) of DRGs-PPS may have effect on the cost, quality and equality of health care. Efforts in precise cost accounting and timely adjustment of tariffs (for example annual) are needed to make sure that the tariffs reflected the real cost of clinical practice and balanced between among DRG groups. Otherwise, hospitals may have incentive to select patients with higher revenue (such as in favour of surgical patients).

Fourth, measures to ensure the quality of health care can be vital to prevent potential side-effect of DRGs-PPS. Overall there is no evidence of major change of quality of health care under DRGs-PPS. There were studies found that the quality of health care was improved, though negative or neutral results were also reported. However, whether the effect was due to DRGs-PPS or due to the strengthened health care quality monitoring or their interaction is not clear, and further investigation is needed.

Conclusion

In conclusion, there is limited evidence that DRGs-PPS was effective to contain cost, increase outputs and efficacy of health care. It may not affect the quality of health care in the context of close quality monitoring and regulations. However, it may deteriorate the equality of health care as patients exempted from DRGs-PPS may be treated differently from those within.

For further research, it is needed

It is suggested the DRGs-PPS may have different effect on health care output depend on the original payment system. There is evidence that the shift from FFS system to DRGs-PPS resulted in reduced number of admission and cost, while opposite results were observed in countries transferred from overall budget to DRGs-PPS.\(^1\) However, in most cases, there is a mixed payment system. For example, in China the insurance bureaus implement an overall budget, under which FFS is applied, insurance payment contributed to a proportion of overall payment (60%–70%), while the rest rely on out-of-pocket payment. In included studies, under the overall budget, the DRGs-PPS as insurance payment was implemented for a proportion of patients (108 groups) while FFS was used for others. It is a challenge to disentangle the effect of DRGs-PPS in such a mixed payment system on which more research is needed.

This study has several limitations.

1. We did not search for unpublished studies, thus publication bias may not be excluded.
2. Some outcomes were not evaluated as they were not reported in included studies, such as early discharge, patient’s satisfaction of health care, up-coding et al;
3. Since all studies focused on DRGs-PPS in acute care setting, the impact of DRGs-PPS on other services (i.e outpatient, emergency, laboratory, imaging, long term or home care, rehabilitation services) is unclear;
4. We did not access the quality of evidence, as there is a lack of consensus of assessment tool for those types of studies.

In conclusion, there is limited evidence that DRGs-PPS was effective to contain cost, increase outputs and efficacy of health care. It may not affect the quality of health care in the context of close quality monitoring and regulations. However, it may deteriorate the equality of health care as patients exempted from DRGs-PPS may be treated differently from those within.

For further research, it is needed

1. to include all DRG groups,
2. to include different level and type of hospital,
3. to use representative samples from locations with different economic and social development status,
4. to compare broader outcomes of population health, better use DID method.
More effort is also needed to disentangle the effect of difference payment methods in a mixed payment system. Primary studies should report the context in which the DRGs-PPS is implemented for better understanding and interpretation of the results.

For implementation, it is vital

1. to include all patients in a comprehensive DRGs-PPS system to avoid potential inequality,

2. to settle and update the DRGs logics and its tariffs timely to reflect the true cost of clinical practice and create balanced incentives among difference groups,

3. to establish quality of health care regulations and strengthen the monitoring system to avoid quality deterioration.

References


4. Diagnosis Related Groups (DRGs) and the Medicare Program: Implications for Medical Technology; 1983.


Mhealth improves social support for ethnic minority women during perinatal period

Hue Thi Trinh, Nguyen Vu, and Liem Nguyen – Institute of Population, Health and Development Vietnam; Bronwyn McBride – Simon Fraser University, Burnaby, Canada

Background/introduction

Social support is crucially important for women to achieve a healthy pregnancy and postpartum period. It basically consists of emotional support (expression of caring and esteem); informational support (advice/guidance); and instrumental support (tangible goods or assistant with task) (Collins et al. 1993).

The women mainly ask these supports from their husband, women relatives, friends and health staff. Lack of social support constitutes an important risk factor for maternal well-being and has adverse effects on pregnancy outcomes (S.Elsenbruc, et al. 2007). Absence of mothers, other female relatives, and friends to provide childcare, companionship for exercise, and advice about food were prominent barriers that limited women’s ability to maintain healthy practices during and after pregnancy (Thornton et al. 2006). In the technological era, social support is considered a foundational function of mHealth to improve maternal health. The innovation offered by mobile health technologies can help develop and maintain healthy behavioral routines by linking to peers, friends, family, or healthcare workers for social support and instrumental support services (Rotheram-Borus et al. 2012).

In Vietnam, ethnic minority women (EMW) still face challenges in accessing health care services and asking for social support during their perinatal period. Their limited negotiation power and limited autonomy lead to inequities in accessing maternal and child health services (Binder-Finnema et al. 2015) and lack of capacity to ask for support from society. The application of mobile health by sending short message services (SMS) promises to enhance women’s knowledge about maternal, new born and child health (MNCH) and their demand for and ability to seek social support.

Aim/Objectives

An mHealth intervention for improving reproductive and child health access among EMW in Thai Nguyen, Vietnam was conducted from 2013–2016 (mMOM). The mMOM model delivers necessary MNCH information, in a timely manner, directly to community women via their mobile phones. Qualitative research was conducted as a component of project to examine:

1. How an mHealth intervention can improve social network and social support for EMW during their perinatal period.

2. The feasibility to scale up the mHealth intervention to other potential groups.
Method

Setting

Dinh Hoa is a rural district of Thai Nguyen province which is located in the northeast region of Vietnam. This district has a high proportion of ethnic minorities (73%). The mMOM project has been implemented in this district since July 2014. The pilot model was implemented in 8 communes in Dinh Hoa, and 4 other communes were also recruited to the project as control groups. The qualitative research was conducted when the project came to its final period.

Data collection and participants

This research was conducted between May and July 2016. The project team invited different informant sources to evaluate the impact of the mMOM intervention on the social networks and social supports for the pregnant women and new mothers. Guidelines and questionnaires for the focus group discussions (FGD) and in-depth interviews (IDI) were developed to ensure that project team members followed research objectives and were consistent in collecting information. The interviews and fieldwork were conducted in both the intervention and control communes in Dinh Hoa district, Thai Nguyen. Data collection occurred through field observations and meetings with the leaders of the Thai Nguyen Provincial Health Department (TNHD), Dinh Hoa District Health Centre (DHDHC), commune health staff (CHS) of both the intervention and control communes, and selected pregnant women and women with infants under 2 years old (participants and non-participants) and their families. For the commune health staff, one two-hour FGD was carried out in the DHDHC with the participation of seven intervention health staff. Seven additional IDIs were conducted in the commune health centers. For the participants and non-participants, the other six FGDs were conducted in both intervention (4 FGDs) and control commune health centers (CHCs_ (2 FGDs). There were 5–10 women participating in each 60–90 minute FGD. 24 IDIs were conducted. The detail number of the FGD and IDI is shown in Table 1.

<table>
<thead>
<tr>
<th>Stakeholder groups</th>
<th>FDGs</th>
<th>IDIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management level</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Intervention</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Health staff</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Control</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Health staff</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>31</td>
</tr>
</tbody>
</table>

Table 1: Focus group discussions and In-depth Interviews conducted during the mMOM project Final Evaluation

All data collected during the final qualitative assessment was recorded. The project team also took notes and observations during the FGDs and IDIs. The audio files were transcribed verbatim, and analyzed. This data was reviewed and categorized into major themes for presentation in this report. Several direct quotes from project stakeholders are presented.
Results

Most women who participated in the FGDs and IDIs belong to ethnic minority groups (83.8%) in both control and intervention communes, with a mean age of 29 years. 79.4% of women had experience of taking care more than one child. The participants were asked to share their experiences about their social network and social support from emotional, informational and instrumental perspectives.

The improvement of social networks.

In the project communes, it seemed hard to find a network for the women to participate in, as the women only gathered in small groups of 3–4 people who were neighbors, sisters, relatives or friends. Being a small group, they generally felt open to share information with each other. During the implementation of project, dialogue and exchange about MNCH care within and beyond the intervention communes happened more often than that in the control communes. The observation in the FGDs noted that the women felt quite comfortable to share their experiences in the group. In contrast, in the control communes, the pregnant women only joined in the group consultation once or twice during their pregnancy. During this process, the interaction between the health care provider and participants was quite limited since the information came from the provider and had no response from participants. In a group consultation, the women didn’t feel comfortable sharing their issue within the group; they preferred to talk with the health staff personally.

Emotional support (expression of caring and esteem).

The mMOM model was found to support women’s mental wellbeing during the pregnancy and early motherhood periods by promoting confidence and minimizing anxiety. The participant women were less worried throughout their pregnancy experience, and stated that knowing what to expect at each stage helped them to feel less concerned. This was particularly salient for women in their first pregnancy, many of whom stated that the experience seemed more normal with the messages informing them about what to expect. Women’s increased confidence in their own knowledge of pregnancy and new motherhood also positively impacted their interactions with the health care system.

“For the first baby, we took care as the elderly people told us, what to feed in which month, but for the 2nd child through the program mMOM, we apply the knowledge sent by the program to take care of ourselves as well as our children, and we find it easier, more scientific”
– Tay woman, 26 with 2 babies, intervention commune.

In a social context where maternal and infant health have traditionally been considered the domain of women, it is likely that when women have problems during their pregnancy or post-partum, they may try to address it themselves without asking anyone for support. In a related study, women in the low social support group had significantly reduced psychological quality of life and indicated greater depressive symptoms (S.Elsenbruch, S.Benson et al. 2007). Therefore, women’s expression of their support needs is crucial to decrease the burden and stress during the perinatal period. In the intervention communes, the women shared project information to husbands and engaged them in prenatal and postnatal care:

“Yes, my husband reads the SMS [messages] too, he even reminded me to go for a vaccination when I forgot."
– 27-year-old Kinh woman with 5-month baby, intervention commune.

On the contrary, the non-participants did not refer to their husbands or family members as being greatly involved in MNCH care. Their belief seemed to be that pregnancy and child-rearing were generally a woman’s responsibility and seemed to accept their husband’s low involvement.

Both participants and non-participants agreed that asking an experienced person, such as mother/mother-in-law or relative sisters for help was very important if their husband was absent or suffering a physical health issue.
“My husband is deaf-mute, he can’t take me to the CHC for antenatal care, I have to ask my sister to go with me”
- 36 year-old Kinh women with 7-month baby, intervention commune.

**Informational support (advice and guidance).**

The mMOM system met the informational needs of the participant women. The personalized information to each stage of pregnancy/new motherhood helped them to follow their baby’s development and helped them to contact the health staff for advice.

“For my first child, whenever I had a problem, I always went to the health centre, but now I just need to call the health staff’s phone number, it is more convenient. Yes, I feel good when I call the health staff, they are very enthusiastic.”
- 27-year-old Kinh woman with 5-month baby, intervention commune.

The intervention CHWs also stated that the mMOM project had had a powerful impact on their interactions with local women. Most health workers remarked that women were phoning more frequently to ask about health care during pregnancy, and that the quantity and quality of interactions between CHWs and women had increased.

“Most of the participants call the health staff if they have any questions. Two-way interaction like that is very beneficial.”
- CHW 1, in focus group discussion, intervention commune

CHWs also noted that women were more actively engaged in their MNCH care, and that the information in the messages had an enabling effect on their readiness to initiate discussions with health care providers:

“Women ask more questions when they have more information from the SMS. They ask us right away when they have any questions.”
- CHW 2, in focus group discussion, intervention commune.

Many CHWs commented that prior to the mMOM intervention, women would sometimes not report problems in their pregnancies, such as bleeding or edema, until the issue had become an emergency. More women were said to be consulting CHWs at the earlier signs of a problem, which has contributed to preventing further complications. Several participants echoed this sentiment, stating that the information from mMOM helped them to feel confident that they had definitely identified a problem and encouraged them to seek care.

In the control communes, several women expressed that there were many barriers for them to access information: the distance and limited capacity or time to travel to the CHC, and the family’s financial situation. However, they were quite hesitant to search for MNCH information: most indicated that they only visited to the CHC if they were informed by the village health workers or were called by the CHS for a group consultation, vaccinations or antenatal care.

“I would visit the CHC if I got a notification from the VHW”
- Women 1- in focus group discussion, control commune.

For women who lived far away the CHC, the village health workers played an important role to distribute the MNCH information for them. In the FGDs and IDIs, women mentioned that they mainly got informational support from the VHWs which related to visit CHC for antenatal care and vaccinations, but these supports were insufficient.

“I previously got information from my village health worker…since she left to another village, the information I got was insufficient”
- 23-year-old Tay women with 11-month baby, control commune.

The non-participants did not want to bother the CHWs with their problems, because they did not know if they were serious or not. These statements link a low level of confidence with hesitancy in seeking care. In this way, non-participant women’s lack of MNCH information and awareness affected their confidence, which in turn directly impacted their willingness to visit the health centre.
Instrumental support

The existence of mobile phones was critical to support women during the project implementation. At the beginning of the project, due to financial issues, some women did not have their cell-phone or used a shared phone with their husband to receive SMS. The project distributed several mobile phones to women who needed them. During the final assessment, fewer participants were found to be sharing a phone and some women requested a project funded cell-phone. Observations suggested that project participants had benefited from the service and had thus been motivated to buy their own phone.

Discussion

The qualitative results suggested that the women mostly received social support from health staff, their husbands, more experienced friends, and sisters. These groups should be the target to provide MNCH information in order to engage them in MNCH care. In the intervention communes, when the women exchanged MNCH information, some husbands showed their excitement to receive the SMS intervention:

“Of course [I would be willing to receive messages], both of us should receive the SMS so that we could both gain knowledge for taking care of our baby.”

– Husband 32 to 27-year-old Tay woman with 5-year-old and 6-month baby, intervention commune.

However, there were some special family’s conditions that acted to negatively influence the husband’s participation. In some cases, women mentioned that their husbands were too busy at work and had no time to help them. In one special instance, the husband had a disability and couldn’t provide any support, so the woman asked for help from her sister. The living situation also could affect to women’s needs for support. When the couple lives with their parents-in-law, the regular availability of help and advice from their mother-in-law may decrease the demand of external social support. If the couple lives independently, social support might be sought from different sources. The solution should be more flexible with support from the mother, mother-in-law, sisters or village health workers.

Social support for perinatal women depends on various factors: socio-demographic characteristics, social network characteristics, social integration and involvement, and health characteristics (Baheiraei et al. 2012). The World Health Organization recommends that social support should be a foundational function of mHealth to improve maternal health (Rotheram-Borus et al. 2012). From the author’s perspective, until now there has been limited research which indicates the relationship between mHealth and women’s characteristics (including: socio-demographic, social networks, social integration and involvement, and health characteristics). The mMOM model demonstrates some primary social support evidence. In the future, more quantitative research should be conducted to contribute to the evidence base.

Conclusion

The difference in social support between the intervention and control communes indicates that mHealth application contributes and helps EMW to meet their fundamental needs for social networks and social supports. The SMS intervention can contribute three types of support for pregnant and postpartum women. The feedback from participants indicated a high feasibility of implementing mHealth applications for various groups in the near future.
References


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Peer-reviewed abstracts

Abstracts appear in order of presentation according to the conference program listing.
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Administrative service redesign in the Electronic Health Record world
Claire Holt – Portland District Hospital

Introduction

Portland District Health (PDH) is close to a fully electronic health record. It has been a journey spanning 15 years and encompasses twelve of South West Alliance of Rural Health (SWARH) facilities.

Early years included developing a regional Patient Master Index, HL7 transfer of pathology and radiology results and solid stable wireless and network infrastructure. November 2012 saw the beginning of a new era as we implemented the patient administration module of our existing system. March 2015 saw our roll out of outpatient and community functionality. In the clinical space we now have Medication prescribing and administering and observations in our electronic health record.

All of this progress has had an impact on how we manage staff and their systems training, data entry quality and accurate management of patient details. Given all administrative staff, regardless of their working location, now need the same level of training to ensure the accuracy of patient details, their bookings, appointments, episodes and complete medical records management; We needed to revisit the structure and management of all administrative services.

On joining PDH, in 2011, as the Health Information Manager, I had a team of 10 staff which included 1.2 EFT medical records clerks, 2.8 EFT Emergency Department ward clerks, a Clinical Coder (0.6 EFT), a Private patient/preadmissions manager (1 EFT) and myself. Due to restructuring and senior management changes, I have now inherited all administrative staff from across the organisation. My total staff count is now 30 and includes main reception, finance, inpatient ward clerks, aged care ward clerks and specialist consulting suite reception functions.

Project: Administrative Services Redesign

Commencement of project: 01 November 2016.
Expected Completion: 30 June 2017.

Our project to redesign our administrative service pathways is well underway. We have discovered a number of processes which were duplicated with varying degrees of quality across multiple departments. This has resulted in new job roles being defined and we are in the planning stages to redistribute and centralise related tasks.

The challenge is proving to be the change management process and the cultural shift that is required. We have a cohort of staff that is close to retirement that find system and business process changes extremely challenging to adopt. We also have a group of casual staff who are keen to work as much as possible and are proving to be adaptable and flexible.

Our ultimate aim is to have a multi-skilled bank of administrative staff who can work in a number of areas with the same level of patient administration skills ensuring data quality and a consistent efficient approach to patient management.
About Portland District Health

Located in the south west corner of Victoria, Portland is about halfway between Melbourne and Adelaide. The town has a population of about 10,000 people. Per year, Portland District Health has 4500–5000 inpatient separations, 8500 emergency separations and 16000 non admitted episodes of care. The hospital is a 70 bed facility, with an acute, sub-acute, day procedure and dialysis wards and three operating theatres. Our emergency facility is classified as an Urgent Care Centre and is open 24/7. The PAS/clinical system used at PDH and in the SWARH region is Intersystems TrakCare.

References

Portland District Health: http://www.pdh.net.au

South West Alliance of Rural Health: http://www.swarh.com.au

INTERSYSTEMS: http://intersystems.com.au
‘LEAN’ing towards a safer, better, smarter Information Service

Aisha Kattar and Kara Moore – Sydney Children’s Hospital Network

LEAN is an innovate initiative change management tool being adopted across the Sydney Children’s Hospitals Network to help improve services, utilising the best of our resources and eliminating the waste and non-value add in our day to day operational roles. The lean methodology is a customer focused framework used to continuously improve in everything we do.

The SCHN Health Information Units, Patient Administration and Clinical Coding Unit were amongst the first teams to adopt Lean Management, with the objective to review traditional procedures heavily embedded in the ‘paper world’ and connect them with smarter solutions and create a community of lean team leadership for continual improvement. The aim was to reduce errors, creating safer systems and care processes, by reducing waste, minimising duplication and creating efficiencies and by connecting independent systems processes to the eMR, minimising paper and human transitions.

The Health Information, Patient Administration and Coding Teams were asked to review their workplaces and work practices as part of the Lean ‘5S Tool’, developing the concept of standard workstations related to performing tasks efficiently and with minimal resources.

The journey was remarkable, lean leads mastered the art of process mapping; measuring waste and describing the value add to their service. They were able to adapt to save time and allow much needed resources to focus on other areas within the unit to improve customer service.

Some improvements we were able to achieve through LEAN include:

- Coding – returning the accountability to the business units on missing record returns and connecting independent coding systems into the eMR for transparent and visibility of coding information access
- Harmonising Clinical Paper Forms with eMR Development – with the launch of the SCHN eMR/Forms intranet page and CHIMP dashboard to report/target high and low scanned forms for electronic transition
- Document Imaging: Streamline Document Imaging Process to ensure the more efficient use of staff resourcing, KPI delivery and timely access for patient information

LEAN is not the end result however an ongoing collective of smarter solutions applied. Staff were initially reluctant to change, however with time and motion studies and use of the Pareto Principle, the early adopters were leaders and the rest followed. The future of Health Information in an eMR world is connecting what matters and bridging the relational gap between non clinical and clinical business requirements. Our Health Information unit and Coding Unit continue to evolve under lean management, producing sustainable turnaround times, customer focused services, eliminating waste and connecting our units across the organisation. This has had a positive impact on our customers: patients and clinicians.

The true value of LEAN can be appreciated in the daily differences we can see in the reduction or elimination of wasted time, money, and energy in health care. Creating a system that is efficient, effective, and receptive to the needs of our health staff and patients – the ‘customers’ at the heart of it all – we could all be ‘LEAN’ing towards a better service to create a safer, smarter working environment.
Getting an A+ in Accreditation and moving forward in health information and care

Nadine Ghassibe and Kara Moore – Sydney Children’s Hospital Network

In March 2017, The Sydney Children’s Hospital Network (SCHN) Randwick and Westmead facilities, undertook their first accreditation as one of the largest paediatric networks in Australia, previously the hospitals were accredited as separate entities.

SCHN was accredited against 10 National Safety and Quality Health Service (NSQHS) Standards determined by the Australian Commission on Safety and Quality in Healthcare. These standards are designed to drive continual improvement to safety and quality in healthcare services within Australia and provide a nationally consistent benchmark for quality. Health Information Managers play a vital role in the readiness and evidence delivery for accreditation.

The SCHN Health Information Unit (HIU) was accredited on two key standards:

1. ‘Accurate, integrated and readily accessible patient clinical records at the point of care’
2. ‘Protecting the confidentiality of patient clinical records without compromising appropriate clinical workforce access to patient clinical information’

SCHN Health Information Unit was able to showcase unique, leading paediatric specific information management systems and a robust confidentiality framework, tailored specifically for paediatrics across both paediatric facilities.

Subject matters we were able to demonstrate on how we met our criteria include:

- Governance, Health Care Records Committee and ABF information Governance Committee
- Strong policy framework – such as the SCHN Photography, Film and Video Recording for Media, Promotional, Fundraising or Social Activities
- Paediatric eMR – The Single Source Of Truth
- Paediatric Electronic Medication Management
- Integrating Satellite Health Care Records
- Harmonising Clinical Paper Forms With eMR Development
- Network wide Coding Quality Program
- My Health Memory – ‘Safer, Smarter, Stronger - a platform for patient families and clinicians to communicate and enrich patient experience and care plan
- Health Care Records Security And Integrity – ongoing privacy awareness and education. And our security system measures in place such as alerts and breach reports to ensure our patient information stays safe and maintains data integrity
- SCHN Integration Program – project launched to achieve a fully integrated network so that our patients benefit from consistency in treatments and services while providers will appreciate access to the same first-class systems and tools across our Network

SCHN HIU showcased the robust governance systems we have set in place, the processes and policies we have to effectively monitor. And how our role improves the patient experience by supporting our health staff in accessing and managing health information.
At the Accreditation summation, HIU and the supporting facets of the Clinical Integration Directorate were highlighted by all of the surveyors. They could see the positive impact in all areas of care and the importance of our work in creating a sustainable improvement environment. Special mentions included ‘HIU – I wish I could have this in my hospital’, CHIMP – ‘brilliant’ ‘Coding Audits – remarkable’ and eMR – ‘so comprehensive, evolved’, risk assessments, Between the Flags (BTF).

Overall, our aims are in line with the SCHN strategy of moving forward. With integrated and enriched health information, more direct entry and less reliance on paper, for the safety of our patients and long term health care knowledge.

Becoming the ‘subject matter experts’ and applying leading-edge principles and systems to health information, will help you get an A+ in Accreditation and continue to move forward in providing the best in health care.
Leadership is a ‘verb’
Christine Fan – Sydney Children’s Hospital Network

In 2010 the Sydney Children’s Hospitals Network (SCHN) was formed incorporating The Children’s Hospital at Westmead, Sydney Children’s Hospital at Randwick, Bear Cottage, the Newborn and Paediatric Emergency Transport Service (NETS), and the Children’s Court.

At this time the SCHN Performance Unit was created, scoped with responsibility for the management of data relating to the clinical patient journey and corporate support functions. The unit is comprised of six departments: two hospital based patient administration teams and networking teams for health information (including medical records), clinical coding, business intelligence, and clinical costing.

As the newly-appointed head of the Performance Unit, my management perspective changed as I transitioned from being a manager of staff to a manager of managers. Whilst my career trajectory at that point had been principally driven by being the technical expert, in my new role this was no longer the case. It was at this point that my consideration of leadership, and what it meant to lead as opposed to being the manager, began in earnest.

It is useful to think of leadership conceptually as “heading up work journeys”, so that requirements around goals, equipment, engagement, overcoming obstacles, identifying and measuring success can be easily understood and thought about in an active way. This also helps challenge traditional career progression views of the manager just being the person who knows “lots of stuff”.

In an effort to better equip staff for their “work journeys” in 2016 the Performance Unit management team undertook a 12-month leadership development program conducted by Lisa Rubenstein from The Institute of Human Potential. Much can be said about the transformative nature of the program that challenged us to define who we were, what we needed to do, and how we were going to make it happen. We now identify ourselves as “vibrant, passionate change agents, bringing light to kids’ lives by sustainably improved patient experiences” and we will ensure that “our data leads the way”. The development of a professional identity for the Performance Unit together with these affirming statements have, in themselves, proved to be an incredibly empowering experience.

Another focus of the leadership development program was the Axis NeuroPerformance framework. There are three Axis models. The first are the Lenses which Shape our Perspectives and Actions. They include Self, Influencers and Environment. Exploring these helps to better understand why a person may feel, think and behave the way that they do. The second is the Hierarchy of Perspectives which outlines how self-resilience and stress reaction, environment, influencers affect mindset and perspectives. Lastly the Integrity Action Performance Matrix provides an overview of behaviours as a function of one of four combinations of integrity and action. They are: critical thinking, performance zone, false logic & learned helplessness.

Understanding and applying the Axis models and learning associated leadership concepts such as the learning journey (developed by Noel Burch in the 1970s), the Graves Values Levels Spiral (developed by Dr Clare Graves in 1967), the I CAN (Commanding, Authentic and Neutral) communicate model and others; we found that historic ways of thinking were challenged and we developed improved synergy and a common language. It has created a shared foundation for leadership shared across the Performance Unit Management team.
The value of the program can be measured in the practical application of learning. It’s been rewarding to hear accounts of how my managers have changed outcomes based on the application of a different communication style or how they have been able to explore different options to resolve outstanding issues just with a different mindset.

Experience tells me that people are generally taught & promoted to be technical experts. If you want great leaders, investments need to be made in teaching and developing leadership concepts and skills.
How to manage without a manager.  
Self-managed teams at Monash Health

Cathy Davis and Julie Ross – Monash Health

Introduction

At Monash Health the Clinical Coding Service is working towards self-managed teams. The vacancy of the Coding Operations Manager position at the beginning of 2016 was an opportunity to explore replacing the traditional management role with a non-traditional structure.

Professional practice/case study description

This presentation will outline the process being undertaken at Monash Health to implement a non-traditional structure of the coding workforce at Monash health. It is anticipated that introducing self-managed teams will enable our coding staff to feel empowered, take more responsibility for their work and improve their job satisfaction.

Implementation

Management of the change in structure will be outlined, including clarification of roles and responsibilities, and decision making processes. Guidance is still required by the teams, and controls and reporting mechanisms need to be in place to enable teams to make decisions and for the service to continue to perform well, and these will also be discussed.

Performance conversations and feedback to the clinical coding staff which have increased as a result of the restructure will also be outlined.

Conclusion

A survey was undertaken to evaluate the staff culture prior to the restructure which assisted in identifying our strengths and our challenges. The coding staff will be resurveyed and a comparison of the surveys and evaluation of the restructure will be included in this presentation.

The strengths and weaknesses of self-managed teams will be discussed and whether our restructure has been effective in empowering our coding staff, and improving their job satisfaction.

References

Job Sharing; Across the Country

Sherry Craighead and Natalie McGregor – Cairns and Hinterland Hospital and Health Service

Introduction

In a regional area such as Cairns, we must be innovative and creative when searching for employment solutions and attracting talent. With the introduction of ICT solutions there is a greater flexibility to employment arrangements, evident in the unique job share arrangement between Health Information Managers Ms Sherry Craighead who is based in Cairns and Ms Natalie McGregor who is now based in Melbourne.

Both; Health Information Managers with differing number of years experiences but complementing each other as 1 FTE to successfully manage a Clinical Coding team; across the Country!

Setting

Sherry is the occupant of the full-time equivalent position in Cairns. However, Sherry had taken a number of years Maternity Leave, and during this leave Natalie was temporarily appointed.

Sherry returned part-time 2 days a week and due to family commitments Natalie returned to Melbourne.

Problem

It is difficult to permanently attract and recruit a part-time Senior Health Information Managers with the requisite experience to the Far North.

Implementation

In February 2016, the Cairns Hospital, along with the PA in Brisbane became the first Digital Hospital in Queensland. Coders transitioned from paper based records to an electronic medical record.

With the assistance of Remote access; Staff are now able to safely and securely access the electronic medical record from home.

Natalie was involved in the early stages of the roll-out.

The question was: could there be an opportunity to remote access and work from interstate?

It was trialled

Varying duties could in fact be done off-site and the Coding Manager role was reviewed and split up between Natalie and Sherry.

Experiences

Communication is imperative. Emails and phone conversations are frequently had.

Staff are made aware of the main focus areas each of the Managers undertake; and will email directly but are also continually encouraged to carbon copy the other Manager, so that both Sherry and Natalie are across all happenings of the team.

To date, there has been minimal disruption with speed or access to the computer system remotely.

Positives

The two Managers can suggest ideas and learn from each other, sharing their experience with the team.

When one person takes leave there is still a Manager always available, it is highly unusual for both Managers to take scheduled leave at the same.

Natalie is able to teleconference in to meetings, thereby enabling a continued presence with the team and also has the opportunity to visit throughout the year.

We have 1 FTE – Coding Manager role covered that successfully complement each other.

With the inability to attract experienced Health Information Managers and the evolution of electronic medical records this model of managing may become more frequent around the country; challenging a changing landscape.

During the presentation examples of situations (pros and cons) of such an arrangement will be explained.
The Future of Clinical Coding in the Digital Paradigm – A Perspective from the Caboolture Health Information Management Services

Nikesh Gopalkumar, Gerie Liddy and Robyn Rooney – Metro North Hospital and Health Services

Introduction

With the introduction of the Activity Based Funding (ABF) Model in Australia in the past decade, the importance of the clinical coding workforce in hospitals has never been greater especially in actively engaging with clinicians and management when having conversations around optimising funding outcomes and using coded data for health service planning and quality and safety monitoring (Cook 2016; Shepherd 2017).

With the goal being a future towards a personalised and integrated health care system – the State of Queensland is on the digital health journey with it recently publishing the Digital Health Strategic Vision for Queensland 2026 and the ruling Government investing $1.5 billion towards eHealth (State of Queensland (Queensland Health) 2017).

With this as the background and heralding the fact that Australia as a nation is facing a shortage in skilful and experienced clinical coders trained in using ICD-10-AM, ACHI and ACS; we the Caboolture Health Information Management Services (HIMS) since 2016 have been facing issues around:

• Recruiting skilled and experienced clinical coders to our workforce;
• Retaining trained clinical coders within our existing clinical coding workforce

Case Study Description

Queensland Health has 16 Hospitals and Health Services (HHS) under its jurisdiction. Caboolture Hospital comes under the Metro North HHS. It is a 216 bed hospital providing a range of clinical and allied health services (State of Queensland (Queensland Health) 2017). The demand for health care in this region since 2015 has been growing exponentially (Mena Report 2016).

The hospital at Caboolture uses paper based records and has a HIMS that oversees the hospital’s information management and data quality. With a change in leadership in 2016 and a new Senior Health Information Manager (SHIM) coming on board in early 2017 – a few selective strategies (as enlisted below) were collaboratively worked upon by the Caboolture HIMS towards alleviating the existing situation.
Strategies being deployed

Mentoring Program

The Mentoring program has been drafted in place with the aim of active succession planning and delegating some of the daily clinical coding management tasks to the senior coders (Shepherd, 2017). The program has had some great feedback from the protégées ensuring their active engagement within the team.

Service Improvement Unit Reports on Patient Safety and Quality

The Health information Managers (HIMs) and Senior Clinical Coder and Auditor (SCCA) at Caboolture Hospital have been working with the Patient Safety and Quality Service Improvement Unit (SIU) officers when developing and interpreting clinical service line audit reports.

Education for Medical Officers

Research demonstrates medical officers are not adequately prepared through their formal studies for clinical documentation and highlights the need for education on the job (Hawthorne & Parkinson; Rowlands et al, 2016). The Caboolture HIMS Team have developed online resources for new medical officers; are in the process of developing video resources and have practical exercises which are delivered with the commencement of internships.

Reviewing the Coder Clinician Liaison Queries Workflow

Coder-Clinician Liaison (CCL) can be defined as the interaction and communication that occurs between clinical coders and clinicians, specifically to improve clinical documentation required for clinical coding purposes. (Health Information Services – Royal Brisbane Women’s Hospital 2015).

Reviewing the existing CCL workflow with our coding team helped us eliminate practices that caused information duplication and identify consistent coder-clinician education gaps.

Upskilling Long Serving Medical Records Staff through Professional Development Pathways

There is anecdotal evidence to suggest this strategy as key towards cultivating and building a sustainable and flexible local clinical coding workforce for Caboolture Hospital’s future.

Conclusion

The purpose for developing and actioning these strategies have been 2 fold:

1. To build a more cohesive clinical and nonclinical workforce that is responsive and not reactive to the needs of the hospital and
2. To be fully prepared when going digital and adopt the path of least resistance to achieve it

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Coding will fix it!
Kate Heath – Cairns and Hinterland Hospital and Health Service

During 2015-16 there was significant growth in the number of staff employed within the Cairns and Hinterland Hospital and Health Service (CHHHS) due to the implementation of the Digital Hospital, other special projects and the commissioning of the improved services.

Due to this, we found ourselves forecasting an $80M budget deficit for 2016–17. One of the strategies to address this was to develop an Organisational Sustainability Plan (OSP), the purpose of which was to prioritise initiatives to enhance the sustainability of the CHHHS health service delivery, identifying both savings and revenue opportunities. The goal was that this would contribute $17.7M to improve the forecasted position. One of the 5 streams was Revenue Optimisation – including Clinical Documentation and Coding. Target = $3M!

To paint the picture, we were 3 months post Digital Hospital Go-Live which was a huge change and slowed down our throughput, we were sitting at 35 day coding turnaround, discharges that had previously been less than 8000/month were consistently now over 8300. Consequently quality activities we used to do were on the backburner, which resulted in limited clinical liaison and little to no coder education.

So you can imagine the reaction of the team at this ‘challenge’… Initially we thought, that’s impossible, what more can we possibly do, we are flat out and doing our best… But as the resilient HIMs/Coders we are, as a team we productively worked through the 5 stages of grief and came out the other end with a plan.

A baseline audit was done on 200 records, and the results showed that there was a 31% DRG change, and that 70% of the changes were due to missing or incomplete documentation, and 30% due to coding errors.

This was a relief, and objectively presented the great opportunity to share the burden and the success of this project with our clinical colleagues.

This presentation will go through the process we went through to as an organisation to achieve this, will highlight the barriers we faced and the ways we overcame them, or if not, learnt to manage around them.

It has been a collaborative effort between our Clinical Coding team, all clinical streams within our workforce, Medical Executive, Clinical Council and the ieMR Digital Hospital team. A huge win for us was when we saw one of our very active and influential VMOs do a Grand Rounds presentation to her clinical colleagues on this – we will share this with you during the presentation. We have a new clinical champion for good documentation!

To many of you this paper may detail things that we all do, every day, as Business as Usual, but for me, this project enabled us to sit back and quantifiably reflect on that BAU type work as a team, and to have this acknowledged and highlighted by executive.

As we were in the final year of the uncapped Commonwealth growth funding environment, it couldn’t have happened at a better time, and was perfect year to have the organisational support for improvements in this area.

Year to Date end of May, we have spent just under $200,000 towards this project, and have generated quantifiable additional real revenue to the HHS of $4.1M – net revenue of $3.9M. The HHS activity levels are estimating $35M in commonwealth growth, and although not directly quantifiable to this project, we are seeing better documentation the first time around now and therefore the ‘revenue’/acuity through better documentation is more than the $4M we can show.

Yes we exceeded our target, but more than this, we have refocused on quality and education within our team, and have strengthened our relationship with our clinical workforce.
Expect to Manage Reduction in staff: another perspective on EMR implementation

Kathy Cassin – The Royal Children’s Hospital Melbourne

Background

The RCH implemented the Epic electronic medical record (EMR) on 30/04/2016. The change management involved in the EMR project was considerable and impacted all levels, departments and units across the organisation.

With this implementation, clinical staff moved from recording patient information on paper to recording it electronically in the EMR, resulting in a 70% reduction in the volume of paper forms required to be scanned by HIS. Some information remains on paper and will continue to require scanning to be completed, including consent forms, external correspondence and external results. Due to the reduction in scanning workload, less staff were required to complete this work and a reduction in EFT within HIS was required as a result. For Health Information Services the impact of the EMR implementation was most keenly felt in the reduction of clerical EFT and staffing restructure that followed.

Change Process

In order to determine appropriate staffing levels within HIS to meet the revised workload requirements an external rostering specialist was engaged to determine the best rostering configuration. They provided recommendations for a future roster and with the assistance of Human Resources we used this information to develop a proposed roster and the change impact statement. We set timelines for each step of the process and revised position descriptions in line with the new roster.

Meetings were organised with HIS staff in early October 2016 where we went through the proposed changes and provided each staff member with a copy of the change impact statement, proposed roster, position description and information on how to access the Employee Assistance Program (EAP) throughout the change process. Regular follow-up meetings were organised for staff to attend and ask questions or provide feedback. We held these meetings at times all staff could access – i.e. day shift/evening shift and night shift. We also encouraged staff to provide feedback via email and offered 1:1 meetings. A Frequently Asked Questions document was created and updated after each meeting. This document was sent to all staff at the end of each week of consultation.

As part of this process all the existing clerical positions were made redundant and staff were encouraged to apply for the new positions. Interviews were conducted and staff were assessed on their application, the interview and past performance. Staff were appointed to the new positions based on these assessments and the positions each staff member had applied for. Some staff chose not to apply for any of the positions and took targeted redundancy packages. Those staff who were unsuccessful in obtaining a position in the new structure were offered redeployment opportunities within the organisation.

The new clerical staff structure was implemented in early December.
Conclusion – lessons learnt

This was an incredibly difficult time for all those involved but particularly the clerical staff. We worked hard to be as clear and transparent as possible in delivering the change impact statement and the details of the proposed changes. We met with staff regularly, answered their questions and actively listened to their feedback. EAP counsellors were brought onsite to meet with staff during the consultation period and they were also on hand when we advised staff of the outcomes of their applications.

In regard to lessons learnt the things that stand out are:

- setting achievable timelines and sticking to them
- having active support from Human Resources during the whole process
- providing opportunities to staff for questions and feedback
- providing the same information and answers to questions to all staff.
From paper-based to real-time health information reporting: a practical Vietnamese mHealth solution

Cuong Nguyen – Institute of Population Health and Development, Vietnam

Introduction

In recent years, the number of developing countries that are using mobile technology to address health needs and manage health information (aka mobile health or m-health) is growing. Despite the lack of rigorous evidence of its usage, practicalities, and efficiency, m-health emerges as a useful and affordable tool in healthcare worldwide. On the other hand, infectious disease surveillance data in Vietnam is collected through a paper-based system with four government tiers leading to a large delay. Meanwhile, mobile phones are abundant and very popular in the country. Therefore, there is a great potential for the use of a mobile technology-based disease surveillance system in public health of Vietnam.

Description

Starting in 2012, the Institute of Population, Health and Development, in collaboration with the Vietnam National Institute of Hygiene and Epidemiology, Dartmouth College, University of California, Los Angeles, and Columbia University, designed and piloted the use of text messaging Short Message Service (SMS) for public health information reporting in Vietnam. This is a multi-year project with several 6-month trials carried out that aim to:

- develop a timely text message-based reporting system to be used in the Vietnamese context;
- explore insights about the feasibility and practicalities of the utilization of the system in health care in Vietnam by identifying potential challenges and barriers; and
- provide a best-practice model with evidence of utilizing text-messaging in improving engagement, performance, and quality of the health information management duty.

Implementation & Results

A text messaging-based disease tracking system was built and set up. Three six-month trials utilizing this disease tracking system with different settings such as one-way or bi-directional SMS, or different formats of reporting SMS were designed and implemented. 80 health staff from 40 communes of Hoa Binh and Hung Yen provinces of Vietnam got training and participated in these pilots to report two common infectious diseases: influenza and diarrhea using cell phone. After each examination and checking-in onto the paper logbook, participants were asked to report the case by texting an SMS to a designated number and make notes of successfully reported cases. A central data repository server was set up to collect SMS reports, and aggregate reported patient data. Engagement, performance, efficiency, and quality of the reporting work were assessed by the evaluation of the qualitative questionnaires, and the comparison of the texted SMS reports to the patient logbooks.

Results showed that around two thirds (63%) of participants retained the basic structure of the Short Message Service (SMS) report, and there is a strong influence of those people on the time they spent texting the information. Particularly, with the use of bi-directional SMS system for assisting in error screening and reminder and feedback provision vs one-way...
system, participants were 4.62 times more likely (95% CI 3.93-5.44, p<0.0001) to send correctly formatted text reports, and 3.42 times more likely (95% CI 2.72-4.33, p<0.0001) to have precise information in their texted messages.

Results also revealed that while positions, ages or gender of participants did not statistically influence the results, ethnicity and management role did.

**Conclusion**

A disease reporting system utilizing text messaging technology is significantly easier to use in comparison to the traditional paper-based one. The deployment of the bi-directional SMS-based reporting system both significantly improved participant’s engagement in SMS texting protocol, and greatly enhance their reporting quality. The project demonstrated a robust evidence of a practical utilization of SMS in disease reporting system that has great potential for the scale-up and national-wide implementation.
Insourcing in an outsourcing world: big business’s loss is Health Information’s gain

Christopher Guest – Forensicare

Introduction

In 2007, Forensicare, one of the pre-eminent forensic mental health facilities, was struggling to manage the records and data of their complex client base. Twenty-three (23) databases were used to manage 118 mostly long-term inpatients; blue-ruled white index cards and one Excel spreadsheet were being used to manage more than two thousand outpatient client records.

With no appropriate funding available for systems, I built a web-based Clinical Information and Patient Management system consolidating everything to one database. In July 2014 Forensicare went live with a Clinical Information system complete with fully digital progress notes, patient management whiteboards and clinical-flow dashboards and in 2016 went live with an EMR and an integrated Freedom of Information heuristic engine for the processing of digital documents – all developed in-house.

Description of Project

The project had several objectives: reduce the number of forms; remove the paper record; continue to improve data capture, availability and information use; continue to improve business efficiency; provide more clinical functionality; digitise as many forms as possible; provide management with more sophisticated data analysis and the knowledge and wisdom that comes from the data.

The existing system had been successfully implemented across the service: inpatient and outpatient and was liked by most people who used it. Being browser-based meant it was available anywhere, anytime on any device without the need to install software. This made IT maintenance costs almost nil for the system and made upgrading a smoother process than would otherwise have been possible.

I had been asked to manage Health Information for the year whilst the existing HIM was on maternity leave. This allowed me to see the inefficiencies involved with the paper medical files and to identify workflow and workload efficiencies that increased system functions would solve.

Implementation/Experiences

I built an all-HTML Enhanced Electronic Medical Record: we identified all unique document types, associated them with their corresponding medical record folders and built the ability for the organisation to scan directly to the record, with Health Information providing the necessary quality checks. Scanned and ‘live’ records can be added. The uploading process enables the addition of:

1. Workflow approvals (multiple authors to sign-off) on certain document types with automatic notifications back to the originating author;
2. Automatic creation of a Progress Note with a link to the EMR source embedded in it;
3. FoI exemption;
4. Restriction of the document to specified disciplines
Apart from digital records, the system has:
- Over 10 years of clinical and patient information
- Multiple business processes solved, such as an Information Management interface that enables the secure, real-time availability of records to external users
- Freedom of Information heuristic processing
- Patient whiteboards
- ISBAR handover engine
- The EMR integrated with client Progress Notes

Many other features are present.

**Conclusion**

Over the years, IT development has been outsourced and the result is the loss of knowledge of systems development costs and associated efficiencies, leaving external companies to charge for development at costs that can neither be challenged by in-house business units, nor done in any other way due to a lack of IT people with specific health-oriented development skills. Progress is often slow and costly.

Government ICT projects such as CentreLink and the Australian Census show that success is not guaranteed by outsourcing, and costs of large systems and the ongoing maintenance can be out of the reach of many smaller health services.

By developing the solution in-house, maintenance and developments costs were contained. Benefits such as targeted ad-hoc reporting were simplified. Development of new functionality is truly agile - a process of days rather than months: and the organisation owns and builds on the knowledge again. The wealth of the data and that we know how it works builds knowledge and wisdom. The success is that Health Information is now seen as a hub of innovation, meaningful interpretation of information and the go-to source as a single point of truth for clinical information.
Identification and reporting of HealthLinks patients – a new model of care for the chronically ill

Jung Hock (Allen) Foo – Western Health

Introduction

Our Health Service services a large catchment area of metropolitan Melbourne, with a diverse population, high growth rate, and lower socioeconomic status. These areas are also associated with significantly higher rates of chronic diseases, which are the leading cause of death and disability in Australia.

In 2016, Victorian Department of Health and Human Services (DHHS) launched a pilot program - HealthLinks: Chronic Care (HLCC). This pilot was designed as a new funding approach that aimed to remove funding barriers and deliver an alternative model of care for chronically-ill patients, who are often frequent users of hospital inpatient services. An algorithm was developed by DHHS to identify patients with high risk of unplanned readmission to hospital. This algorithm utilizes linked inpatient admission and emergency data, and includes predictors such as age, recent unplanned inpatient admission(s), presentation to Emergency Department (ED), and a number of chronic conditions.

In November 2016, in partnership with a not-for-profit community health service provider, our Health Service undertook a three-year pilot program designed to identify and manage patients at high risk of unplanned readmissions to hospital.

Technology Brief

Early identification of these patients is vital to ensure that intervention can be provided in a timely manner. The Performance Unit (PU) and Digital Medical Record (DMR) team were given the task of identifying Western Health patients who are at high risk of readmission, and create an automated alert to notify the clinical team when these patients are admitted to the hospital via ED.

Initially, an eligibility list was provided to our Health Service by DHHS on a monthly basis. The PU team was tasked with replicating the algorithm internally to generate a weekly eligibility list. The clinical activity and outcomes of these patients will be monitored and reported by the PU team throughout the pilot.

Implementation Processes

Key stakeholders including PU, DMR, and DHHS were involved to ensure the identification and enrolment of HLCC patients complied with business rules defined by DHHS. The internal algorithm was tested and reconciled with DHHS data to measure accuracy and precision. The algorithm was used internally to assign scores to inpatient episodes using clinical data stored in a data warehouse. Running the algorithm in-house allows the eligibility list to be refreshed more regularly and accurately, hence reducing the time required to identify high risk patients. Decreasing the lag time between identification and intervention allows the clinical team to provide a more coordinated and timely approach.

Patients identified as eligible for enrolment by the algorithm were subsequently flagged on our DMR system using the Clinical Alerts Manager. Our DMR system sends Short Message Service to alert clinicians when an eligible patient has an unplanned inpatient admission.
**Clinical care impact**

It is anticipated that patients enrolled into this pilot program will be provided with targeted active management of their chronic conditions, which consequently reduces the need for unplanned inpatient admission. Any additional costs associated with higher utilization of community-based care are expected to be offset by the reduction of unplanned admissions, making this a cost-neutral pilot.

**Conclusion**

Early identification of patients, leading to intervention is important for the success of this program. This allows for targeted engagement of patients with Care Coordinators during their inpatient admission. Utilizing health informatics as a tool to identify chronically-ill patients at risk of unplanned readmissions will ultimately result in improved patient care and clinical outcomes. Adopting this algorithm internally at the Health Service has reduced lag time to identification of eligible patients.

**Keywords**

Chronic disease, HealthLinks, Alternative service delivery models, Community health, Readmissions
Data Governance – An organisational assessment

Sean Downer and Emma Wilson – Western Health

Introduction

As healthcare becomes increasingly analytically driven to ensure best possible care for patients is provided, data has become one of the most valuable assets to a health service (Sanders, 2016). In order to support this analytic driven age it is essential that data governance measures are in place and can provide assurance that data is assessable, accurate and meaningfully, allowing for effective decision making and provision of effective timely patient care.

Data governance refers to the overall management of the availability, usability, integrity and security of the data contained in Information Communication Technology (ICT) systems (Rouse, 2007). Through standardisation efforts of people and processes, data governance can improve accuracy, consistency, and reliability of information, enhancing management and performance reporting, including analytical capability. Enabling effective decision making to drive improvements in clinical practices and administrative processes, ensuring best care can be provided and optimal patient outcomes can be obtained.

It was identified that our Health Service did not have a formalised data governance framework, senior management oversight or understanding of data governance measures, thereby making it hard to provide the assurance required that our data is easily assessable, accurate and secure.

Implementation Processes

To implement effective data governance a health service, in its current state, needs to be assessed to ascertain a benchmark. To determine the current state a complete list of agreed ICT systems within our Health Service was collected and the allocation of responsible business areas for each system was confirmed.

In the absence of readily available guidelines or tools that could be used to assess the maturity of data governance within our Health Service, an internal data governance assessment process was developed. This provided a basis for compliance and a ranking criteria against Governance, Business Processes, Data Management, Security, Maintenance and Lifecycle Management. Through the ranking of governance measures the health service will be able to improve upon governance measures currently in place, identify potential gaps or improvement opportunities and work towards implementation of standardisation across the health service.
Conclusion

With the review well underway a picture of our current state is developing, including emerging themes regarding areas for improvement. The main areas identified as requiring improvement include increasing understanding of legislative requirements, identification and agreement on allocation of Data Stewards and Custodians, lack of risk assessment and mitigation measures and well communicated system continuity plans.

The next steps are to work towards a formal and standardised approach to data governance within our Health Service. Working with identified business and administrative areas on addressing areas marked with compliance issues or improvement opportunities to implement sustainable consistent data governance measures within our Health Service and ensure the associated organisational polices and procedures are in place.

A further benefit of this work is that it will generate a data governance toolset which will be available to other healthcare services.

References


Taking out the Trash: Clinical Forms Governance Overhaul

Odette Taylor, Nicholas Caruana and Prudence Poon – Northern Health Victoria

Introduction

Established in July 2000, Northern Health (NH) provides quality health care services to the expanding communities in Melbourne’s northern suburbs. In one of Melbourne’s busiest growth corridors, Northern Health offers the community health care services where they are needed - close to where people live.

Northern Health is made up of four campuses: Broadmeadows Health Service, Bundoora Extended Care Centre, Craigieburn Health Service and The Northern Hospital.

The Client Data Management Unit is responsible for the management of clinical forms.

There were in excess of 1550 clinical forms that sat within the Forms Central database on the Northern Health intranet. Limited formal processes for NH staff to manage clinical forms design and development was recognised, with a gap being the governance of Northern Health clinical forms. There was a limited review process in place, lack of transparent oversight and ownership of forms and electronic forms developed in the scanned medical record that sat outside of the normal forms processes.

A centralised and governed framework for clinical forms was required in order to ensure accessibility, consistency, appropriate authorised approval and clinical oversight, a reduction in duplication, promotion of best practice and evaluation process for all Northern Health forms.

Case study description

A Clinical Forms Governance Project Plan was proposed to establish a Governance Framework for clinical forms which encompassed the following factors:

Document Management – Systems and processes to store and access clinical forms and information about the forms including their review date, owner, previous versions and type (paper, externally printed, electronic etc.)

Governance – Management of Clinical Forms in all formats that allows clinical sign off, alignment to the National Standards and organisation wide oversight.

Clinical Forms Requests – Documented processes to support and manage the developed and revision of Clinical Forms in a consistent way that promotes best practice and efficiency of capturing patient information meet internal and external users

Implementation/Experiences

PROMPT is the web-based document management system currently used for Northern Health’s Policies and Procedures, and the plan was to take a complete stocktake of all Northern Health Clinical forms, and migrate them onto a side arm of PROMPT, where they would be stored separately to policies and procedures.

A complete stocktake of all clinical forms on Forms Central was undertaken to identify an “owner” (e.g. clinical area) and whether the form was currently in use. NH was able to eliminate 700 forms immediately via this process, largely due to redundant or duplicate forms that were still in circulation and sometimes still in use.
All forms were transferred into a standardised template that aligned with AS2828 Standards, and barcoded to enable the document to be scan into the scanned medical record – Clinical Patient Folder (CPF).

Once uploaded into PROMPT, every document was assigned an owner (at Executive/Program Director Level) and a review date. The owner will then be notified 3 months prior to and on the day of scheduled review by automated email.

The Forms Approval Sub Committee, made up of multidisciplinary members, was convened 6 months prior to “Go-Live” and worked through the policy and guidelines as well as the approval processes. It was determined that all forms were also to be ratified by the appropriate NSQHS Committee.

Communication Plan was rolled out to all NH staff 2 months leading up to Go-Live and Forms central (current system) was decommissioned.

**Conclusion**

Northern Health successfully implemented the Forms Governance Project and implemented PROMPT in April 2017. The elimination of 700 clinical forms has reduced duplication and clinical risk with rogue and redundant forms no longer accessible. The PROMPT system has enabled tighter governance and document version control. All clinical forms either new or review, are ratified via a National Standards Committee and Forms Approval Sub Committee before implementation. This project was highly commended by Surveyors at our recent Accreditation Survey, March 2017 and has ensured future sustainability of clinical forms management at Northern Health.
Social Media in health care: Dangerous? Or Quality Improvement and Consumer engagement?

Clair Holt – Portland District Health

Four years ago, Portland District Health (PDH) actively refused to engage in using social media. There was a strong fear of the unknown. There were many ‘what ifs’ offered as reasons to not do it. As a Health Information Manager, I knew there were inherent potential risks to privacy. “What if someone shared something inappropriate about a current patient? What if our staff members were saying things about the work place, about our doctors or patients?”

Portland has some very active community group pages on Facebook which are enjoying a greater level of community engagement and information sharing than traditional methods of local media. At times, Portland District Health would become a topic of conversation. The excuses for not using social media seemed trivial. We needed to be part of the platform before we could be part of the conversation.

We needed to establish guidelines, policies and procedures for how we were going to use and engage Social Media. It is critical that Health Information professionals are involved to ensure these policies address the legal requirements to ensure compliance with the Health Records, Privacy and Freedom of Information Acts. Health Information managers have the knowledge and skills around the management of privacy and confidentiality concerns that could potentially arise. We also had to address the education of our employees to ensure they acted responsibly online as representatives of their Health Service.

Practice: This paper will explore the progress of the Facebook and Twitter use of Portland District Health and the positive impact which has far outweighed the perceived risks which did not eventuate. We did receive negative feedback via our Facebook page, however all instances lead to quality improvements. This is feedback we would not have normally received and there would have been ill feeling in the community which we would have not been able to address.

We had proven the improvement in communication with both the community and patients through the use of social media. However, we still had an internal issue. We had poor employee satisfaction scores around communication. Investigating, at the beginning of 2015, we discovered 40% of staff had never activated their email account. We worked on communication structures through our leadership team, held staff education campaigns and streamlined our email communications with small success. We then decided to leverage the accessibility and useability of social media within the confines of the work environment. This separate but related application of social suddenly magnified all fears and concerns around privacy and information sharing and challenged the communication culture of Portland District Health.

Practice: Implementation of an internal Social Media platform (‘Workplace’ created by Facebook) was met with unforeseen and completely unexpected resistance in some areas, most notably by those areas that also reported low usage rates of email. In overcoming the cultural challenges, we have found that ‘Workplace’ has been an excellent medium to communicate and manage system updates for our electronic health record.
Conclusion

As concluded by Moorhead et al, “Social media is a powerful tool”, however, “information exchanged needs to be monitored for quality and reliability and the users confidentiality and privacy need to be maintained” (2013). This is the role of the Health Information Manager and we, as a profession, need to step up and participate in the governance and use of social media in our health facilities.

About Portland District Health

Located in the south west corner of Victoria, Portland is about halfway between Melbourne and Adelaide. The town has a population of about 10,000 people. Per year, Portland District Health has 4500–5000 inpatient separations, 8500 emergency separations and 16000 non admitted episodes of care. The hospital is a 70 bed facility, with an acute, sub-acute, day procedure and dialysis wards and three operating theatres. Our emergency facility is classified as an Urgent Care Centre and is open 24/7. The PAS/clinical system used at PDH and in the SWARH region is Intersystems TrakCare.

References

Portland District Health: http://www.pdh.net.au

Privacy concerns in a rural healthcare setting: Practical considerations for the Health Information Manager in dealing with the “Bush Telegraph”

Sharon Campbell – Curtin University

Introduction

Rural hospitals serve as the backbone of rural communities (Debajyoti, Kristi, and Shabboo 2016) and health care professionals can have a big impact on the community. However, in a rural or remote community patient confidentiality and privacy can be a more significant issue than metropolitan areas due to a number of reasons (McDonald 2017).

One reason for example is literally that “everyone knows everyone”. Patient’s conditions can also be unintentionally betrayed through casual conversations by health professionals in such areas as the local store, potentially resulting in overheard ‘privileged’ conversations (Leung, Smith, Atherton and McLaughlin 2015).

Privacy for patients in any health care setting is a given right and includes discretion in conversations, security of health records and other health information, and physical privacy. Research surrounding the topic of privacy particularly in a rural/remote setting is very scant, however is a topic that deserves a higher level of review and discussion especially in light of potentially harmful effects on patients and the wider community (Leung et al. 2015).

Professional Practice

This professional practice discussion will highlight several anecdotal scenarios that the Health Information Manager in a rural/remote setting can use to drive attitudinal change to privacy considerations in both the healthcare setting and the wider community. Examples of scenarios and potential solutions will include privacy issues related to social media, e-health and intentional privacy breaches by staff.

Scenario

A staff member of a small rural hospital is out walking when she is bitten by a ‘drop bear’. Although the bite is not overly serious she decides to attend the Emergency Department at the hospital where she is employed. Following discharge from the Emergency Department she walks back down the hospital corridor to meet her husband. On the way she is stopped by no less than five staff members who seem to know a lot of information about her condition, this was concerning given that the walk down the corridor only normally takes less than two minutes. None of the staff members were involved in her direct care. The staff member was then reluctant to seek further treatment at the hospital.

The above scenario highlights that the issue of privacy is a significant issue for rural and remote health workers, particularly as they may meet each other socially and professionally (Allan, Ball and Alston 2008).

Further to that another concern raised by patients in rural communities is the lack of physical privacy, such as visibility in out-patient waiting rooms and names on hospital ward room doors (Leung et al. 2015).
Implementation/Experiences

It is clear from the above scenario that the ‘Bush Telegraph’ took hold, as the Health Information Manager what steps would you take to prevent this scenario from occurring in the future?

Initial steps to prevent similar scenarios in the future may involve:

- Clarify confidentiality and privacy policy with staff and patients.
- Conduct educational sessions with both staff at the healthcare facility and in the general community.
- Identify private areas for staff members to receive treatment or to exit securely.
- Review recording of staff names on whiteboards or doors when they are also patients.
- Gain support from senior clinicians and executive staff to support changes.

There should also be an arrangement made with providers regarding how a patient’s private, protected health care information should be or not be communicated (Townsend 2009).

Conclusion

Privacy breaches, whether real or imagined can greatly affect an individual living and working in a rural or remote health care setting who can consequently choose not to proceed with or delay treatment or take the matter further. Serious consideration also needs to be given to the use of social media and eHealth systems.

Given the nature of rural settings where health care professionals (including the HIM) are likely to know or have contact with patients, it is even more imperative that privacy is maintained, and ensure that the ‘Bush Telegraph’ does not take hold!

References


Developing a national census for the health information professions in Australia

Kerryn Butler-Henderson – University of Tasmania;
Kathleen Gray – University of Melbourne;
David Greenfield & Sarah Low – University of Tasmania,
Christopher Pearce – Australasian College of Health Informatics;
Vicki Bennett – Australian Institute of Health & Welfare;
Julie Brophy – Victorian Department of Health & Human Services;
Monica Trujillo – Australian Digital Health Agency;
Ann Ritchie – Australian Library & Information Association Health Libraries Australia;
Louise Schaper – Health Informatics Society of Australia

Introduction

The need to improve data collection to delineate the health information workforce (HIW) was recognised by Health Workforce Australia (2013), and supported by a 2015 study that reported the need for a minimum dataset as the first stage in delivering a national census (Butler-Henderson et al. 2016).

There is expert consensus in Australia that the health information professions include clinical coders, costing analysts, data analysts, informaticians, information managers, librarians, and other professionals who are emerging as specialists in digital health information systems. The broader scope of this research is to quantify and qualify the workforce in order to build a capabilities-driven workforce development framework to meet the changing needs of the health sector, and inform policy and capacity development.

This presentation will address three goals:

1. a detailed account on the development of a minimum dataset for the national census will be provided;
2. the practicalities in the delivery of a national census will be explored;
3. how participants can partake in the first national HIW census in 2018 will be explicated.

HIW census development

In August 2016 researchers met with key health information profession stakeholders to plan the development of Australia’s first HIW census and agreed to collaborate to develop the minimum dataset that would form the basis of a census. The national HIW census project is a world first initiative to develop a research method to develop and test a minimum dataset for a census across the spectrum of this workforce. The project is a collaboration between the University of Tasmania and the University of Melbourne, governed by a management group with representatives from the Australasian College of Health Informatics, Australian Digital Health Agency, Australian Library and Information Association/Health Libraries Australia, Health Informatics Society of Australia, Health Information Management Association of Australia, and the Victorian Health and Human Services Workforce Branch. The purpose of the management group is to provide expert advice regarding: the development of a minimum dataset and an online portal to deploy a national census, the resources required to develop and maintain a dataset, future directions and governance structure for the deployment and ongoing maintenance of a national census and advise on the development of a conceptual framework for research that builds on data from the census.
Practicalities in the developing a minimum dataset

Whilst there are numerous workforce census across a number of fields, very little is published on the method used for the development of a minimum data set. A Delphi approach as described by a number of other studies (World Health Organization 2015; Goossen et al. 2000; Ranegger, Hackl & Ammenwerth, 2015) was selected as the overall study design. In short, a Delphi approach is a structured, anonymous method that repeatedly builds on information from a group of experts. This study used both an Expert Panel and a Consultation Group. Members of these groups were nominated by invited organisations and must have at least ten years’ experience in a health information profession. The Expert Panel developed the first draft of the minimum dataset through focus groups held in Sydney and Melbourne. The data elements in this dataset were reviewed and refined by both the Expert Panel and the Consultation Group, using a series of questionnaires. This dataset was then converted into census question items, and again reviewed and refined by the Expert Panel and the Consultation Group. Following a series of rounds, the first national census based on the minimum dataset was developed.

Conclusion

The National HIW Census project will quantify and qualify the workforce. The project process will strengthen and enhance HIW networks nationally, enable the building of a capabilities-driven development framework, and provide a template for similar projects in other countries. Additionally, the information derived will provide a unique and longitudinal dataset for workforce planning, research and evaluation projects in the HIW field.

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Understanding the perceived barriers/enablers to Health Information Management professionals undertaking research

Cassandra Rupnik – Northern New South Wales Local Health District; Jaclyn Chan – Independent Hospital Pricing Authority; Trixie Kemp – Tasmanian Health Service; Gavin Lackey – Royal Prince Alfred Hospital; Heather White – Monash Medical Centre; Dwayne Richards – Mount Hospital; Kerryn Butler-Henderson & Sarah Low – University of Tasmania

Introduction

Research is essential for societal development and economics. For a profession, it builds the theoretical underpinnings of the discipline, enables practitioners to staying current with developments and technology, and allows the profession to evolve and adapt to meet future needs. Yet, the level of research undertaken by health professionals varies considerably by discipline (Marshall et al. 2016).

There is a perception that research is important but often not a priority or accommodated within the work day, or there is a lack of interest, knowledge, experience, resources, or supervision and support (Marshall et al. 2016; Akerjordet, Lode & Severinsson, 2012; Johnson et al. 2014; Rahman et al. 2011). There is a lack of literature examining research practice by Health Information Management professionals, and a perception that practitioners do not undertake research.

At the 2016 HIMAA NCCH, the HIMAA Research Advisory Committee (RAC) ran a workshop to dispel the misconceptions about undertaking research and show practitioners the value of incorporating research into their roles. Using three research scenarios, participants explored research proposal development. At the conclusion of the workshop, participants and HIMAA members were invited to be part of a mentored project to further encourage practitioners to undertake research. As a team, participants would continue the development and implementation of the workshop research project to gain the full research experience under the supervision of an experienced researcher. Paradoxically, the mentored project reported here aimed to explore the perceived barriers and enablers to Health Information Management (HIM) professionals in undertaking research.

Methods

A review of the literature identified a number of studies examining the perceived barriers and enablers to undertaking research across various health professions. The majority of studies used a survey approach, so that was adopted for this project. Following the development of a research proposal and obtaining ethical approval from the University of Tasmania Social Science Human Research Ethics Committee, an invitation to participate in the study was distributed to the memberships of HIMAA and the Clinical Coders’ Society of Australia. Recipients of the invitation were also asked to forward the invitation to their networks, using a snowball sampling recruitment method. Participants were HIM professionals who self-identified as a HIM or coder, as per the HIMAA definition, who were working in the Australian health system. A suitable survey tool used in a study identified through the literature review was selected and adapted for this study as it enabled the research team to address the research objectives. In

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addition to the perceived barriers and enablers of undertaking research, the survey tool also aimed to identify the extent to which participants believe they are undertaking research in their role.

**Presentation**

This presentation will report on the findings from the survey and the experience of the RAC mentored project. The perceived barriers and enablers identified by HIM professionals will be compared against those reported in the literature by other health professions, and recommendations made as to how practitioners can be encouraged and supported to incorporate research into their roles. This will be the first known study to quantitatively report the current level of research engagement in a HIM professionals role in the Australian health system.

**References**


Johnson, C, Lizama, C, Harrison, M, Bayly, E & Bowyer, J 2014, ‘Cancer health professionals need funding, time, research knowledge and skills to be involved in health services research’, *Journal of Cancer Education*, vol. 29, pp. 389–94.


How can we engage in health information management research? The establishment of HIMAA's Research Advisory Committee

Dr Stella Rowlands – Chair HIMAA Research Advisory Committee/Sunshine Coast Hospital and Health Service Associate Professor Joanne Callen – Macquarie University
Dr Kerryn Butler-Henderson – University of Tasmania
Dr Anupama Ginige – Western Sydney University
Dr Joan Henderson – University of Sydney
Sue Walker – Queensland University of Technology

Background

Research in the management of health information is critical for our profession. All professions engage in advancing the knowledge and evidence base of their specialties – the health information management profession is no exception.

For our practices to improve, with better outcomes for patients, better service delivery and high quality health information, there needs to be systematic investigation of problems, exploration of how things are done, whether those processes work, and how we can improve practice. There are enormous opportunities for all of us given the rapid developments in ehealth and communication and access to health information. Health Information Managers and Clinical Coders are in key positions to be actively engaged in research as part of a team or in leading projects related to investigating the management of health information. HIMAA has recognised the need to facilitate, support and encourage members of the profession in this endeavour and as such has established a Research Advisory Committee.

HIMAAs Research Advisory Committee (RAC)

The HIMAA Research Advisory Committee (RAC) was formed to address the identified priority (1.5 Health Information Management Research) in HIMAA’s latest Strategic Plan (2014-2016). The desired outcome of this strategy was an increase in the volume and type of research conducted that related to health information management. In including this strategy, the Board recognised the need to encourage and assist members of HIMAA to actively engage in research, and to publish findings.

The RAC was formed in 2016.

The RAC is currently addressing the following initiatives that were articulated in the form of a workplan.

- Developing a position statement on the value of health information management-related research to the identification of best practice, the development of the profession’s knowledge domain and the advancement of the profession
- Promoting health information management research and publication
- Coordinating with researchers and research institutions to develop a health information management research agenda, including a research register
• Developing a funding strategy to support health information management related research, including scholarships and systematic reviews

• Continuing to support initiatives to increase the impact factor of HIMAA’s peer-reviewed research journal, HIMJ.

Professional practice

An overview will be provided of three key activities, which will be of particular interest to the audience of the conference:

1. The creation of a research topic priority list for health information management research

2. The development of a HIMAA research grants scheme and proposed governance framework

3. HIMAA research website

Conclusion

The initiatives to support research within the profession will be underutilised unless more health information management professionals consider taking the opportunity to advance their research skills and get involved. Anyone who is interested can speak informally to any member of the RAC who will be able to provide initial advice on how to engage in research. Some suggestions would include: undertake further education in research methods; read journal articles on research undertaken in our areas, and identify, connect and engage with more experienced researchers on their projects. Research is a very collaborative, team-based activity. It requires motivation and hard work, but it is very rewarding to be able to publish your findings and therefore add to the knowledgebase of the profession and help others. Enquiry and exploration of ideas are essential for the evolution and growth of the health information management profession.

As an expert in health information management, you are challenged to not just assume the role of information custodian but to ask how your data are being used in research and whether there is a role for you on the research team! Swap your skill for the opportunity to learn! Make yourself indispensable!

Research is the key to the professions existence!
Benchmarking: Destination... Improvement

Christine Fan – Sydney Children’s Hospitals Network
Elijah Zhang – Women’s & Children’s Healthcare Australasia

Benchmarking is regarded as a continuous improvement process whereby services can measure and compare performance against peers.

Appreciating the value that benchmarking affords, in reality many health services continue to struggle with key components of the benchmark cycle. These include data availability, governance, assembly, visualisation, interpretation, application and engagement.

Children’s Healthcare Australasia (CHA) is the peak body for hospitals healthcare for children & young people in Australia and New Zealand.

The CHA benchmarking program, which has spanned almost a decade from inception, has recently seen a metamorphic evolution and is now better placed than ever to lead positive health service transformation.

In our session we will outline the benchmarking journey of the CHA and lessons learnt. Topics will include:

1. Governance Framework
   We will discuss the establishment of the CHA Children’s Hospitals Performance & Efficiency Special Interest Group which is supported by Chief Executive sponsorship from member hospitals.

2. Data Considerations
   The development of data templates, data submission cycles, data content and transformation are important considerations to facilitate hospital comparisons.

3. Business Intelligence
   The CHA Benchmark Portal will be demonstrated. It contains leading edge, aesthetically pleasing, user friendly data visualisations in dashboards developed using Tableau. The dashboards have many features which contribute to ease of data interpretability such as embedded statistical analysis. Predictive modelling & analysis is planned for the future.

4. Developing an Information (data driven) Culture
   Setting the expectation for management decisions to be well informed and underpinned by data evidence.

5. Impact
   Using examples from the Sydney Children’s Hospitals Network, we will showcase the impact that benchmarking, done well, can have on health service delivery.

By sharing from personal experience, it is hoped that others may gain valuable insight which can be applied to their own benchmarking journey.
Describing the “Clinical Truth” in coding
Andrea Groom – Clinical Coding Services Pty Ltd

Introduction

I’m concerned about our coded data – why?

For many years, the focus of coding has been on revenue – hospitals don’t have time to review all episodes so have concentrated on episodes with potential to increase revenue.

Also, the focus of coding has been on a small number of conditions that drive the DRG; the v8 grouper has now broadened that focus – but it still doesn’t include all conditions and is still skewed towards certain conditions.

Our focus should be on all conditions that meet criteria for coding – describing the patient stay fully and truthfully – the “clinical truth” as per Dr Cesar M. Limjoco’s writings and presentations.

Professional practice description/implementation/experiences

Coding can be impacted by a number of factors, for example, clinical documentation, coding knowledge and application, construction of documentation queries and pressures from management. This presentation will touch on our experience and findings of factors that impact on capturing the “clinical truth”.

How can we improve our coding and increase the focus on quality of data?

Clinical documentation improvement (CDI) has been used in USA for many years and I believe CDI is the way to improving our coded data quality by having complete clinical documentation in the health record prior to coding.

We need to take the best ideas from the current USA programs to implement here and to be careful that we take what is applicable to the Australian scene, not just take everything that is done in USA.

CDI in USA started out being about improving documentation for revenue but has now matured to also be about the quality of documentation and describing the “clinical truth”. I believe this should be our aim when implementing CDI programs.

This presentation will discuss our experience and findings in CDI including insights from attending a CDI conference in USA in May 2017, discussing processes and programs with conference attendees, and implementation of CDI programs.

Finally, this presentation will discuss who should be involved in a CDI program. I believe our HIM/coding profession should be at the forefront of CDI programs in Australia; that is not the case in the USA and we need to be involved before the opportunity is lost to our profession.

Conclusion/lessons learnt

Where to from here?

A summary of take home messages will be shared.
Clinical Documentation Improvement amidst the ‘Sea of Change’

Carlee Huntchings and KerryAnne Adair – Bendigo Health

Bendigo Health is a 664 bed service which caters to the Loddon Mallee region (population approximately 307,000). It provides a range of services across the entire lifespan. Bendigo Health processed 42,000 separations for the 2015/16 FY (Bendigo Healthcare Group, 2017, p2).

Bendigo Health is currently undergoing multiple multidimensional, large scale projects:

- $630,000,000 New Bendigo Hospital (NBH) – stage 1 completed December 2016
- Implementation of a Digital Medical Record (DMR) - completed 2016
- Configuration of the Electronic Medical Record (EMR), - implementation scheduled for the end of 2017

In 2012, a business case was put forward and approved for 2 Full Time Equivalent positions as Clinical Documentation Improvement (CDI) Specialists (originally held by Health Information Managers) reporting through Information Services.

What initially commenced as a Clinical Documentation Improvement Project has since become a long term, sustainable programme. At the beginning of 2016, two Registered Nurses were employed to embark on a new Clinical Documentation Improvement journey. The overarching CDI goal? ‘Improve the clinical documentation standard at Bendigo Health to ensure it reflects the delivery of World Class Healthcare’.

This presentation will discuss the evolution of a Clinical Documentation Improvement Initiative; from the utilisation of a traditional ‘HIM approach’ to one which applies business development strategies to impact clinician behaviour. Whilst this somewhat unorthodox CDI approach acknowledges the value of retrospective / real time auditing, it will primarily expand upon methodology which addresses the underlying cause of poor quality documentation:

- Engagement of internal stakeholders across all levels to generate meaningful change
- The importance of closing the feedback loop
- Benchmarking audits and corresponding analysis as an intelligence and ongoing improvement source
- How to achieve quality Discharge Summaries
- We treat our queries like gold! How we monitor and process queries
- Addressing the challenges surrounding online resources in an electronic world
- Embracing an EMR from a Clinical Documentation Improvement standpoint

From a revenue standpoint, the above strategies yielded an Average Multiday Victorian Cost Weighted Separation (WIES) increase of 0.16 within a twelve month timeframe. More importantly, external WIES optimisation audit results indicate the overall quality of Bendigo Health’s documentation has significantly improved. The coding change rate of 38.6% (December 2015) due to documentation issues has been reduced to 12.2% (March 2017). From a holistic perspective, this approach has fostered a fresh, meaningful organisational culture surrounding the value of clinical documentation.

References

Bendigo Healthcare Group, 2016, Bendigo Health Annual Report 2015-16, Bendigo, VIC.
More Than Words: A rural perspective on a multi-layered approach to Clinical Documentation Improvement

Kelly Lupish – Western New South Wales Local Health District

Introduction

Set within a vast geographical landscape Western New South Wales Local Health District (WNSWLHD) faces unique and complex challenges in delivering high quality health care efficiently across 38 locations.

The implementation of a quality improvement project that would provide the scaffolding for performance optimisation within an Activity Based Funding (ABF) model became a strategic priority in our commitment to delivering world class rural health care for our communities. We sought to address the problem of disconnect between our business processes and our core business of delivering health care. This continues to be achieved through the immersion of clinical staff with robust business knowledge at the point of care with patient experience as centre to their practice.

Implementation

Pivotal to the project, and critical to our success, was the recruitment of the Clinical Business Partner (CBP) role at each in scope site, a role which evolved through the recognition that our scope of practice needed to reach beyond Clinical Documentation Improvement (CDI) strategies. With the challenge of lower volumes and complexity in comparison to metropolitan centres we undertook a co-design process for each in scope site to ensure the project wrapped around and aligned with the operational priorities of the facility. Our key drivers were reflecting the care we deliver, a highly skilled and capable clinical coding workforce and highly informed clinicians.

With an uncompromising focus on quality, safety and continuous education we optimised performance outcomes that were driven by embedded processes which reflect accountable patient centred care through a CDI strategy. We reviewed documentation at point of care based on specific Diagnosis Related Groups, length of stay outliers, Hospital Acquired Complications and long stay patients. The CBP participated in patient handover and ward rounds to ensure that clinical documentation was a comprehensive and accurate representation of the patient journey.

We engaged our clinical coding workforce to design a strategy that would deliver specialist internal capability and expertise with inbuilt capacity that is responsive to business needs. Our future direction includes a traineeship program, formalised capacity planning, flexible work practices, standardised query processes, internal and external audit frameworks, standardised performance indicators, highly developed competency frameworks, fully funded ongoing professional development and shared learning through established networks.

A rigorous education focus supported our objective of continuous improvement in clinical practice through timely access to reliable data and information by highly informed clinicians. To achieve this we recruited clinical staff that had highly developed networks with clinical staff to assist in early clinician engagement. Processes were embedded for the regular review of coded episodes of care across specialties with consultants and Clinical Coders and development of Junior Medical Officer and Clinical Coder partnerships and linking. Furthermore we continue to work with the Clinical Costing team and Clinical Governance Unit to establish meaningful clinical variation reporting mechanisms.
Improvements to date over the December 2016 to February 2017 period include completion of 634 clarifying documentation queries, 2,327 point of care reviews, clinician response rate of 100%, National Weighted Activity Unit improvement totalling 106, 11 coders enrolled in fully funded coding courses, commencement of the first external audit across the District in over 5 years and $30,000 in funding to support the reduction in non-coding related duties at two sites.

**Conclusion**

Site visits to facilities whom had embarked on their own similar journeys and their willingness to share, was invaluable in helping set our direction. There is not a one size fits all model which is evidenced in that the journey we planned to undertake became so much more, constant evaluation and refinement of our processes continues to be a factor in our success. The road to success has been paved with numerous learnings, of greatest significance has been the value of Executive support, without which the pieces of the puzzle would not have come together.
Field Trialling ICD-11 in Australia the next phase of testing
Brooke Macpherson and James Katte – Australian Institute of Health and Welfare

Introduction
The Australian Institute of Health and Welfare (AIHW) is the Australian Collaborating Centre (ACC) for the World Health Organization (WHO) Family of International Classifications (FIC). In this role, the AIHW participates in the WHO’s work to develop the International Classification of Diseases, 11th Revision (ICD-11) and a number of other international health classifications.

In its capacity as the ACC, the AIHW is acting as the WHO Field Trial Centre for Australia, and is coordinating field trial activities in Australia on behalf of the WHO, to ensure the trials and outcomes best suit Australia’s needs. This work is being undertaken by AIHW in collaboration with the Australian Health Classifications Advisory Committee, which includes representatives of relevant Commonwealth government agencies and nominees of the Australian Health Ministers Advisory Council.

Case Study Description
During 2016, the AIHW was invited to participate in a WHO-led, pilot testing exercise for morbidity for the ICD-11 MMS – the results of which were presented at the 2016 HIMAA/NCCH conference in Melbourne. Upon completion of the pilot testing, the AIHW as the ACC was then invited to participate in the second phase of testing, focusing on priority areas of ICD-11 MMS, including post-coordination and testing morbidity coding rules for selecting ‘main condition’ (principal diagnosis).

Expressions of interest were sent to a number of stakeholder groups for participation in the field trial exercises. Over 90 applications were received from clinical coders, health information managers and other interested stakeholders of the ICD from both Australia and New Zealand. These participants represent national and jurisdictional levels of government, public and private hospitals, private health funds and other health information professionals.

Education modules were to provide participants with an understanding of the pertinent areas of the field trial including: the features of ICD-11, an overview of the ICD tooling environments and information on the post-coordination/clustering mechanism. A mandatory education webinar consolidated the information of education modules, demonstrated the field trial data collection tool and offered the ability for questions to be raised.

For the test, participants selected the appropriate ICD-10 and ICD-11 MMS codes for a diagnostic term and evaluated the difficulty with which the codes were found. Participants also specified whether the codes were the best fit for the diagnostic term. A number of the cases required the participants to employ a new feature of ICD-11 called clustering. Clustering allows coders to post-coordinate, or combine, codes together to achieve the appropriate level of detail that reflects the diagnostic term.

The second part of Phase 2 required participants to consider short vignettes with the ‘main condition’ (principal diagnosis) and ‘other condition(s)’ (additional diagnoses) already derived. Participants applied the ICD-11 morbidity rules to confirm or reselect the ‘main condition’ and then code all conditions in ICD-11 MMS.
Conclusion

Data collection for Phase 2 will occur from April 2017 to June 2017. Analysis of the experience and results will then be undertaken and reported to stakeholders. Both the outcome and experience of Phase 2 testing is likely to inform further field testing in Australia.
Developing a national short list for principal diagnosis reporting in the Emergency Department

Anne Elsworthy – Independent Hospital Pricing Authority

Introduction

In 2013 the Independent Hospital Pricing Authority (IHPA) initiated a review to assess long term options for classification of emergency care services for activity based funding in Australia.

A major objective of the approach to classifying emergency care services in Australia was to drive efficiency and effectiveness of these services through pricing and funding in conjunction with the collection of underlying data that supports clinical care and other uses such as quality improvement, epidemiological monitoring and health services research.

The review recommended development of a new Emergency Care Classification to replace the Urgency Related Groups (URGs) and Urgency Disposition Groups (UDGs) given the lack of support for the ongoing use of triage and the strong interest in moving to a more diagnosis based classification. There was also strong support for a more nationally consistent approach to principal diagnosis reporting in the ED to underpin the new Emergency Care Classification.

Consequently IHPA undertook to develop a national ED short list. This presentation describes the process to develop and implement the short list.

Development and Implementation

A major goal in developing the national short list was to replace current inconsistencies whereby states and territories have developed localised short lists and variously report principal diagnosis using Systematized Nomenclature of Medicine – Clinical Terms (SNOMED CT) and various editions of International Statistical Classification of Diseases and Related Health Problems – Tenth Revision – Australian Modification (ICD-10-AM) or the International Classification of Diseases – Ninth Revision – Clinical Modification (ICD-9-CM).

Another goal was to ensure the short list was clinically comprehensive and meaningful to clinicians and reflective of the high volume conditions managed by EDs. This would reduce variation in diagnosis codes used to report the same condition and therefore improve data quality; as well as being more manageable for clinicians to use. This was an important consideration given principal diagnosis code selection in the ED is generally undertaken by clinicians, unlike the acute admitted setting where diagnosis reporting is undertaken by clinical coders.

The draft short list was developed in 2015 using classification principles endorsed by IHPA’s Emergency Care Advisory Working Group (ECAWG) and in consultation with key health sector stakeholders. It was subject to a public consultation in August 2015.

The final short list was endorsed by IHPA’s governance committees in February 2017 and approved by the Pricing Authority in March 2017.
Next Steps

The final short list and supporting components, including structural hierarchies and user guides will be published on the IHPA website in May 2017. This will provide an opportunity for jurisdictions to test the short list ahead of its proposed inclusion in the Non Admitted Patient Emergency Department Care National Minimum Data Set (NAPEDC NMDS) for 2018-19.

The short list will also be updated for compatibility with ICD-10-AM Tenth Edition, in the latter half of 2017. An update on implementation will be provided at the conference.
What having a Training Program Taught Us
Kerry Bates – Central Coast Local Health District

Where it all started
CC recognized the need to standardize our training program as the traditional method was:
• Time consuming- The time required to educate using the traditional method of coding live records is extremely intense
• Lacked consistency- It all depend on who was in the coding room on the day as to what advice the trainee was given
• Both of the above reduces capacity to maintain KPIs and impacts data extraction due to changing DRGs.
• Took too long for trainees to get feedback and often the trainee needed to re-read the record to remember why they had made the decision
• Disruptive to the whole of coding department
• We could never benchmark any training because there was no data

What next
• We decided to do our own training program by updating introduction sheets from a previous training program and sourcing our own training and review records
• The program is a twelve month contract
• The intent is to encourage trainees to progress to independent coding, while learning accuracy and efficiency
• The program is structured with a specific order of specialties and reviews
• The required level to achieve competency in a review is 80%
• All training and review records are scanned and given to the trainee on a USB

How it Works

• Review the Specialty Introduction Sheet
• Code allocated training records
• Fill out training records spreadsheet and complete any coder query forms

Reviews

• The review records are set up the same as the training records and are given to the trainees on a USB
• The educator marks the reviews
• The required level to achieve competency in a review is 80%. A level of 70-80% is referred to the coding manager for review and discussion before subject progression. Less than 70% is deemed not competent and the trainee will not be able to free code in that specialty and will have to come back to it at the end of their training.

### How it Works

<table>
<thead>
<tr>
<th>Training Records Spreadsheet</th>
<th>Vascular</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Principle (Receipency)</strong></td>
<td><strong>Trainee Comments</strong></td>
</tr>
<tr>
<td>800</td>
<td>I called the HCP from the notes in pp. E59-60, from the prior year's medical assessment. I also called Dr. Long term of analgesia as there was a lengthy discussion about it. Should I have kept the patient on morphine instead of co-admin. I couldn't find the anesthetic chart in this record on powerpoint.</td>
</tr>
<tr>
<td>800H5</td>
<td>How do I determine the level of analgesia to use after surgery? I think we should code post op wound infection. I have seen it in the past and it was relevant and saved a code which was unnecessary.</td>
</tr>
<tr>
<td>800E3</td>
<td>I thought about coding the notes in 3384000.0 instead of 338400.0. When I called the HCP, they did not agree. I thought about coding non-compliance with meds but it wasn't specific. Also, documented in history.</td>
</tr>
<tr>
<td>800D4</td>
<td>All course taken. Better explanation of the medication chart and pharmacology.</td>
</tr>
<tr>
<td>800C3</td>
<td>Good feedback. I will take this into consideration.</td>
</tr>
<tr>
<td>800B3</td>
<td>Good feedback. I will take this into consideration.</td>
</tr>
</tbody>
</table>
What We Learnt

- The scanned records and answer sheets were working very well
- The trainees that had just completed their course were better equipped and faster at picking up the coding then those who were a version behind
- Trainee only meetings were working and were to be kept in the department in a free office
- The training records spreadsheet after some changes was very successful second time around
- The program is too labour intensive for one person
- The educator needs to be able to comfortable maintain the program within the confines of their role and this isn’t possible with the current format
- Not enough live coding
- Once the records and answer sheets were organised the trainees went through them quite rapidly.
- Results from survey is 12 months is too long

New Look Program for Cohort Three

- Six month program and two trainees
- We will only take trainees that have completed the latest version
- 20–30 training records per speciality
- Self-marked by trainee using the answer sheet
- First five specialities using TurboCoder or books with no free coding
- Attend educator feedback
- Commence live coding and work though specialities
- There will be no more review records- we will combine the best of the training and review records to make a new set of training records
- This will take the records the educator needs to maintain from approx. 1200 to 570 which is a manageable number
- The trainees will do a lot more live coding then the previous two cohorts
- Trainees will be audited 50 records at 2 months 50 records at 4 months and 75 records at 6 months
Eliminating spreadsheets from our coding service to improve coding and audit processes

Melisa Robinson and Cathy Norish – University Hospital, Barwon Health Geelong

Introduction

At Barwon Health, we were no different to most health services. Our Coding Service was built on the rocky foundation of Excel spreadsheets.

To capture our coding audits, missing discharge summaries/episode notes, coding training and documentation queries, we manually recorded each episode and patient details on many Excel spreadsheets.

This approach came with risks in relation to data integrity, data corruption, multi user access, limited security and reporting capabilities.

Demands on coding time were high, with the complex manual processes for these ‘other coding related tasks’, ultimately impacting on our productivity, quality and funding. The coding team also saw no reward for their efforts.

Auditors were frustrated with using spreadsheets and feedback via emails, as it was time better spent on auditing. Training of new coders was also complex and inefficient.

As the Manager, I had limited insight into my coding and audit service. The coding and auditing workload was not easy to identify or report on. Having to analyze and manipulate spreadsheets was a tedious task, and I had low confidence in the accuracy of data.

We looked at and tried other products; however, they didn’t meet the whole department needs.

Then we found iQ Professional by Capture Consulting.

Professional practice

We had looked at the Capture Consulting products a few years ago, but at the time they didn’t suit our needs.

Fast forward three years or so, and they contacted us to show us how it had improved. After the demonstration I could see there could be some benefits, but was not confident to what extent or whether we’d get the funding to purchase another product.

We use and like iQ Coding Adviser, so a free trial offer was an opportunity we jumped at.

Implementation experience

After convincing us it was a great system, we obtained management approval. We then went live after some basic user training. Given it’s a very intuitive system, it was easy to use and train staff to use.

The only requirement from us, was to choose a date for the training and have our IT department create a data extract. We asked for a few changes to suit our needs, which were implemented immediately.

After the first month, the feedback from the coders was very positive. They actually enjoyed writing documentation queries and receiving feedback on audits.

“iQ Pro has streamlined the query process. I love that demographic and admission details are auto-populated on the query template.”

“I like how we receive notifications in iQ Pro about when our coding has been audited and what changes were made”.

The auditors found it enhanced their processes from data capture, reporting, staff feedback and training. It was easy to use and fitted their needs.
“My favourite part is the ease of giving immediate feedback. I now give far more feedback and this includes cases on coding quality issues, not just DRG changes”.

“I like when we enter the new DRG the new WIES automatically calculates. I love not having to open up the case in the encoder to do this!”

As the manager, I was very impressed with the service and support received. My staff love the system and use it every day. Having an experienced HIM being behind the development and maintenance of the product is also helpful. Our change requests are not lost in translation and are seamlessly implemented.

“It's the one stop shop we were looking for.”

**Conclusion (lessons learnt)**

We reflect now on the potential time and revenue lost due to inadequate processes.

We’re grateful for the opportunity to trial iQ Professional and look forward to continually using the product into the future.

We hope that other health services can benefit from our trial and error journey to eliminate Excel spreadsheets from their coding service, and take back that quality coding and auditing time.
Experience working at the World Health Organization (WHO)

Suzette Dela Cruz Regalo – Department of Health and Human Services, Victoria

Introduction

In April 2016, whilst undertaking the Masters of International and Community Development (dual specialisation), I had the opportunity to be chosen for a work internship at the World Health Organisation (WHO) Western Pacific Regional Office (WPRO) and Country Office in the Philippines under the Division of Health Systems (DHS), where my core responsibility was to provide technical support towards the strengthening of the organisation’s health information systems.

For thirteen weeks, I was provided numerous learning opportunities in which I developed knowledge about health systems, particularly systems thinking; its importance to systems management and governance, and the practicalities that realise health information systems thinking in development programs.

Professional practice description/Experiences

Working under the guidance of Dr. Jun Gao, Regional Team Leader of Health Intelligence and Innovation Unit, and Dr. Benjamin Lane, Country Office Team Leader of Health Systems Strengthening and Recovery Unit, I had the opportunity to learn and work on the Health Information and Intelligence Platform (HIIP): a platform utilised by the WHO WPRO to provide health information in a user-friendly format. The platform enables access to the WHO’s interactive databases, which contain the collective regional and global health indicators. Acting as a bridge between the Global Health Observatory and national health information systems, the HIIP is a collaborative public health platform that policymakers, health industry experts, academic researchers and the public, can use to compare regional and national health data, as well as view comprehensive information on country health statuses or specific health topics. As it also helps promote information compatibility and standardisation throughout the 37 divisions in the region, it proves beneficial to all member countries.

I provided technical support in updating the Country Health Information Profiles (CHIPS) for the Philippines and was given access to databases and information from both the Department of Health (DOH) Philippines and some public registries. This experience provided me with a deeper understanding of different national registries, an awareness of multiple factors that affect a mature and reliable data collection system, and the complexities of standardising indicators, both at the local and international level.

AcCESS for MNH is the sub-national initiative in the WHO Country Office Philippines that provided me with the opportunity to understand and translate health systems thinking theory into international and community development practice. AcCESS for MNH stands for Accelerating Convergence Efforts through Systems Strengthening for Maternal and Newborn Health, a three-year collaborative undertaking between the WHO and DOH Philippines, with funding support from the Korean International Cooperation Agency (KOICA). This initiative was a response to support the Philippines in achieving their Millennium Development Goal (MDG) target, specifically MDGs 4 and 5 – to reduce maternal and newborn deaths by improving the access and utilisation of quality maternal and newborn health services among the most disadvantaged and impoverished rural families in 10 villages in the Davao Region. It was launched in Malita, Davao Occidental on July 2015 and was in the process of being rolled out to nine other sites across the country when I joined. I assisted in
the monitoring and presentation of data and trends, particularly on the causes of maternity and infant mortality and morbidity. I also assisted in the post-production and editing of a short film about successes and lessons learnt from the Malita experience. The film-making experience gave me the opportunity to think and work creatively, and to explore contemporary or non-traditional ways of presenting health information effectively, in a format that is engaging and user-friendly.

## Conclusion

In its entirety, I found learning and working at WHO to be personally, intellectually, and professionally enriching and fulfilling. As a health information manager, I developed a greater appreciation for the role we play at local, national and international levels, and of the various opportunities for contribution that are available to our profession, as it is an integral part of the health system building block.

## References


World Health Organization Western Pacific Region. (2016). Health Information & Intelligence Platform. Retrieved from [http://hiip.wpro.who.int/portal/AboutHIIP.aspx](http://hiip.wpro.who.int/portal/AboutHIIP.aspx)


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Posters
Driving Coding Quality: 
Trending and Analysing Paediatric PICQ Errors

Aisha Kattar and Sally Chung – Health Information Unit, Sydney Children’s Hospital Network

The Sydney Children’s Hospitals Network (SCHN) is the largest paediatric facility in Australia, encompassing The Children’s Hospital at Westmead CHW, Sydney Children’s Hospital SCH, Randwick, Bear Cottage, Newborn and paediatric Emergency Transport Service (NETS), Pregnancy and newborn Services Network (PSN) and the Children’s Court Clinic, with a combined inpatient separations of 48,000 per year.

In 2015, the District Network Return process (DNR) for NSW was established which includes the requirement for coding audits. The coding management team was required to analyse and examine the rate of PICQ errors and quality Improvement process by grouping and analysing the Ministry of Health (MoH) PICQ errors, evaluating justified or un-justified errors and developing proactive solutions to reduce the overall PICQ Error Rate.

SCHN will showcase our methodology, demonstrating:

- Reduction in critical error rate 3.8% 2014/2015 to 2.0% in 2015/2016.
- Evaluation of non-critical errors
- Common themes: Top 10 PICQ Errors by category
- Proactive Resolution of Errors
- Identifying justified/unjustified errors
- Collaboration with Costing and Reporting Teams, MOH, lead Paediatric facilities and clinical teams.
- Closing the Loop coder education
- Sharing our learning’s
- ACCD Public Submission to prevent errors
- Dashboard Development, transparency of error rate /ease of analysis.

In collaboration with the MOH, Clinicians, Coding Education and interstate paediatric facilities we have achieved a decrease in critical error rate across the Network, and continue to drive the coding quality improvement process, addressing the ongoing shift in Paediatric PICQ Errors.
Working The Web - A ‘One Stop Shop’ Online

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Time Lost = Credibility Lost. Historically two separate Forms intranet pages existed at both The Children’s Hospital at Westmead (CHW) and Sydney Children’s Hospital at Randwick (SCH) prior to the two hospitals joining forces and becoming one entity.

The pages were a different look and feel and controlled by different content management systems and services. Both contained a confusing mix of ‘Clinical’ and ‘Non Clinical Forms’ forms. There were time lags to e-market, as forms were reliant on CHW and SCH Web Masters to upload onto the separate sites. Navigation issues led to forms being lost to our health customers and potentially impacting on patient care.

Integrity = Real Time. As the Sydney Children’s Network (SCHN) Forms Manager, an opportunity presented for me to ‘work the web’ to develop an integrated online solution. Foundations were laid to support and enable excellence in online clinical care including:

• Creation of one eMR/Forms page on one SCHN intranet site – consistent in look and feel
• Be a self-content managed system by the Forms Manager to upload forms in real time
• Allow health customers to find clinical forms fast and separate from non-clinical forms
• Forms link to display top right corner of SCHN intranet homepage – prime e-real estate
• A SCHN eMR Development/Change Request link to allow staff to send requests to optimise clinical care
• Central itemised Forms Library
• Contain useful tools and guides on robust clinical form development

In September 2016, an awareness campaign kicked off to launch the new eMR/Forms intranet page. The marketing collateral included: PC Screensaver, homepage tile and e-News articles.

The creation of one cohesive network eMR Development and Clinical Forms page is an exciting step forward and the change is timely with the establishment of the Network Health Care Records Committee and Forms Sub-committee. The group’s core objective is on supporting clinical forms and a single eMR applications process, necessary to ensure accurate, relevant and consistent health records for safe and effective health care.

The next phase will be transitioning existing clinical paper forms to the eMR. A truly ‘One Stop Shop’ online and a single source of truth for the safety of our patients.