

Director of Hospital Data Integrity Status Report July 2009

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Report summary

Since April 2009 there has been significant attention directed to strengthening the integrity of hospital emergency department and elective surgery access indicators including the Minister for Health directives to hospital board chairs, system wide data reviews, spot audits, inclusion of the Minister's delegate on two hospital boards and the creation of a position of Director of Hospital Data Integrity reporting to the Secretary of the Department of Human Services (DHS).

The spot audits are currently in process with field work and preliminary report drafts completed. Hospital level audit observations now need to be considered by the respective hospitals for accuracy of findings and management response to recommendations. Following those responses and any ensuing corrections (if any) by the auditors, DHS will need to respond to system wide recommendations. Although the spot audits are not fully complete, I believe it is worthwhile referring to initial overall findings and recommendations in the context of the publication of 'Your Hospitals' for July to December 2008 as this is the period the spot audits covered.

Key points:

The following key points provide a quick summary of the ensuing report.

- All actions directed by the Minister for Health have been initiated.
- The spot audits found no evidence of manipulation or changes to the data reported to DHS that would mislead or improve reported performance KPIs.
- Improvements in data control relating to legacy IT systems or in data definitions have been identified and processes to address these have been initiated.

In addition to implementing the Minister for Health directives a number of additional initiatives are in process.

- DHS is clarifying definitions of 'time to treatment' with the Victorian Emergency Minimum Dataset (VEMD) technical reference group. Victoria is seeking to have these issues addressed nationally through the National Health Information Statistics and Standards Committee. Following endorsement by the VEMD technical reference group, a new clearer concept of 'initiation of patient management' will be introduced to the VEMD from July 2009.
- Regular additional training for key Health Services staff on data definitions and data entry requirements is to be initiated.
- DHS will work with Health Services to identify appropriate IT systems to assist in timely data capture for emergency department presentations.
- DHS will develop and distribute to Health Services a set of guidelines and controls addressing improved data security. Departmental staff will then visit health services to assess current security practices
- Development of data controls guidelines for Health Services.
- Health Services to be requested to include additional terms of reference for audit committees to oversight the integrity of operational data as recommended by the Minister's board delegate Mr Julian Gardner.

Recommendations:

This report contains a number of proposed actions that are planned or are in process (please see section 7). These all relate to improved data collection and reporting but need to be actioned in the context of supporting, not detracting from hospitals' primary responsibility of providing patient care.

In that context I would recommend two actions for more immediate consideration that relate to data security:

- All users of these systems should have a unique user identity and password (or other form of authentication). In the case of passwords, they should expire once per month, requiring renewal with a different password and are not to be shared between users. This means the use of generic logins should be avoided.
- Audit logs/trails are to be maintained in each of these systems and are to be readily available for scrutiny by both internal and external auditors. They are to record all access events and changes to data with the date and time of each change, together with the user identity of the person making the change and the reason for the change. Audit logs are to be stored complete for two years.

1. Background

In March 2009, the Royal Women's Hospital advised the Department of Human Services (DHS) that inappropriate data recording and reporting practices had been identified. An independent audit confirmed that manipulation of elective surgery waiting list data had taken place at the hospital. The Victorian Auditor General also released an audit report on 1 April 2009 which raised a number of issues relating to the quality and accuracy of public hospital data collected by the department.

In response, the Minister for Health introduced a number of initiatives to enhance the quality of public hospital data through cultural, governance, process and system improvements.

These initiatives support existing data quality processes undertaken by DHS and can be summarised as:

- Appointment of Mr Julian Gardner as a delegate to the Latrobe Regional Hospital and Royal Women's Hospital boards. Mr Gardner's role is to oversee the implementation of data quality reforms at these health services.
- Creation of a DHS position of Director of Hospital Data Integrity reporting to the Secretary to coordinate various data audits and investigate complaints about public hospital data.
- Ministerial directive of 9 April 2009 to Health Services board chairs about their accountability for data accuracy, making audit committees also responsible for data accuracy and subject to appropriate controls including regular internal audit, provision of a data attestation statement in annual reports, notification to patients informing them in writing of any changes to their elective surgery status or surgery date and removal of bonus funding linked to achievement of access indicators.
- On 18 June 2009 I followed up the Minister's letter and sought advice of Health Service CEOs progress (for response by 31 July 2009) on the key control aspects of including data accuracy as part of internal audit programs and issuing notification to patients for change of elective surgery status.
- DHS commissioned chartered accountants RSM Bird Cameron (RSM) to undertake the first three spot audits of data supporting hospital access indicators for two hospitals VEMD data and one hospital's Elective Surgery Information System (ESIS) data. Please refer to section 5 for details.
- The bonus payment framework associated with achievement of hospital access indicators has been abolished.
- A Statewide VEMD system and process audit is currently in process.
- Following a public tender process, a Statewide ESIS system and process audit will commence shortly.

In support to the above initiatives a number of data integrity actions have been achieved or are in process as described in the following sections.

2. Data Audits

2.1 Latrobe Regional Hospital audit

Paxton Partners conducted an audit at Latrobe Regional Hospital following the findings of the VAGO audit of emergency department records from the period January to June 2007. The Paxton audit related to a subset of the VAGO audit records and a separate sample of records from early 2009. Please see section 3 for full details.

2.2 Spot audits

Spot audits are nearing finalisation at three hospitals. The auditors found that the Department's sample data agreed with the hospitals' electronic records with very few exceptions, and that there was no evidence found of manipulation or changes to the data reported to the Department at these Health Services.

Major findings and detailed recommendations of the spot audits are contained in section 5 of this report.

2.3 Victorian Emergency Minimum Dataset (VEMD) system wide audit

The first ten site visits of the comprehensive VEMD audit have been completed. Initial findings from these first audits are to form the basis of early advice to health services from the department of changes to emergency department practices and required controls associated with data recording and reporting.

Common themes emerging are the need for improved data security such as unique system logins and audit trails, inconsistency in interpretation of data definitions, and hospitals commissioning their own internal data audits and changed process in response to the VAGO findings.

2.4 Elective surgery waiting list system wide audit

The elective surgery waiting list audit will commence shortly. A tender to select a suitable contractor to audit all health services reporting to the elective surgery waiting list data collection (ESIS), has been advertised. Interviews with a short list of tenderers have been conducted and an appointment is expected to be made as soon as referee checks have been completed and a contract is finalised.

3. Latrobe Regional Hospital (LRH)

3.1 Paxton audit

Paxton Partners conducted an audit at LRH following the findings of the Victorian Auditor-General's Office (VAGO) audit of emergency department records from the period January to June 2007. The Paxton audit related to a sub-set of the VAGO audit records and a separate sample of records from early 2009.

The key findings of the audit were:

- The analysis of the 2009 sample revealed a material improvement in key data fields, compared to the VAGO audit.
- Recording of patient departure time from the emergency department (ED) requires improvement; a common issue in EDs.
- The 2009 record audit provided a material improvement in the evidence available in the medical records to support Time Spent in ED.
- An area for improvement is the recording of triage times for Category 2 patients.

3.2 DHS audit

The VAGO audit reviewed data for the period January to June 2007 and the Paxton audit reviewed the period January to March 2009. I therefore initiated a further audit for the period of the 'Your Hospitals' report ie. July to December 2008. This audit was undertaken by DHS alongside with LRH and was based on a targeted but random selection of emergency department records. The audit focused on the ED departure time target of eight hours (similar to that of the VAGO audit) and the records selected had reported times in emergency of six to eight hours. The audit found that 97.5 per cent of records were able to be verified based on criteria used previously by VAGO. Consequently, I support the inclusion of LRH emergency department data in 'Your Hospitals'.

3.3 Delegate's findings

I have met with Mr Julian Gardner who is acting as the Minister for Health's delegate on the board of the Latrobe Regional Hospital. Mr Gardner noted that satisfactory progress is being made on all actions to be taken by the Hospital. He is of the opinion that the Hospital is taking these matters seriously and taking appropriate actions to address data issues.

Mr Gardner also recommended that hospital boards review terms of reference of Audit Committees with a view to including a function of overseeing the integrity of operational data. I concur with this recommendation. I note that the LRH board has already added the following responsibility "Oversee the disclosure and communications process of data and information regarding performance of the Health Service and the role of the Board" and the following has been added to its Audit Committee responsibilities "The committee is responsible for reviewing the accuracy of data reported by the Health Service. Data accuracy must be subject to appropriate controls including regular internal audit and external oversight of both internal and external auditors. The Annual Report must contain a statement which attests that the Health Service has all appropriate systems and processes in place to assure the quality of reported data and to identify those measures".

LRH has also implemented a number of data security measures including individual logins, audit trails and, separate systems administrator role, as well as an extensive data management training regime.

4. Royal Women's Hospital (RWH)

4.1 Delegate's findings

Similar to Latrobe Regional Hospital, I have met with Mr Julian Gardner who is acting as the Minister for Health's delegate on the board of the RWH. Mr Gardner noted that satisfactory progress is being made on all actions to be taken by the Hospital. He is of the opinion that the Hospital is taking these matters seriously and taking appropriate actions to address these issues.

I note that RWH has already established an Integrity of Data Committee for a term of six meetings specifically to oversee all necessary actions to improve the integrity of data. This committee includes the Chair of the board and chairs of the Audit and Corporate Risk Committee (ACRC), Quality and Finance committees. This highlights the importance being placed on data integrity by RWH. The Integrity of Data Committee terms of reference confirm that when appropriate controls are in place, including internal audit, responsibility will be transferred to the ACRC.

The RWH has undertaken a number of cultural reinforcing activities including appointment of new clinical directors in the relevant area, training on the public sector code of conduct, awareness and promotion of internal data audits and data training and documentation.

RWH also initiated a process of clinical reviews of patients classified as 'not ready for care' (NRF) and a new process where a NRF administrative action requires validation and sign off on a weekly basis at a clinical director level. The clinical reviews indicated no patterns of adverse outcomes or clinical concerns from delays in scheduling surgery.

In addition to the above the RWH has engaged external experts to advise on further improving data controls and reporting to DHS, including data recording and classifications processes, and IT data integrity and system access protocols and practices. This includes detailed assessments of processes and controls of waiting lists and bookings management in Perioperative Services as well as waiting time data capture and reporting for the emergency department.

A number of guidance manuals are being developed to support the Elective Surgery Access Policy. These will provide clear instruction for data entry practice. An Elective Surgery Data Steering Committee has been established to oversee this and related initiatives.

Finally, RWH has since the first week in June, instituted a process of sending letters to all patients who have a change of their elective surgery status in accordance with the Minister for Health directives.

4.2 Data reconstruction

I have looked carefully at the possibility of inclusion of elective surgery access data in the 'Your Hospitals' report for July to December 2008. This included interviewing senior staff and analysing data entry records.

I have concluded that, logistically, it would not be possible to identify and fully reconstruct the affected patient records to satisfy accurate representation in 'Your Hospitals'.

My endorsement of the data integrity for 'Your Hospitals' is therefore exclusive of Royal Women's Hospital being included in detailed tables.

I note that RWH has conducted a number of reviews and implemented remedial actions to ensure appropriate accuracy going forward.

Mr Gardner also considered the matter of RWH reconstructing elective surgery access data for inclusion in the 'Your Hospitals' report for July to December 2008 and agreed with my conclusion about the difficulty relating to logistics of completing a fully reconstructed list of records.

Nevertheless I note the March 2009 Paxton Partners audit of RWH concluded that the RWH understatement associated with NRFC "will not translate to a material misstatement of the state-wide elective surgery information and indicators published in the DHS 'Your Hospitals' report".

5. Spot audits

5.1 Audit Methodology

DHS commissioned chartered accountants RSM Bird Cameron (RSM) to undertake the first three spot audits of data supporting hospital access indicators for two hospitals VEMD data and one hospital's ESIS data.

Review data selected was that reported by the hospitals to DHS within the period from 1 July 2008 to 31 December 2008 to coincide with the period being reported in 'Your Hospitals'. RSM independently chose statistical random samples of over 300 medical records per site.

5.2 Major findings

The spot audits are currently in process with field work and preliminary report drafts completed. Hospital level audit observations now need to be considered by the respective hospitals for accuracy of findings and management response to recommendations. Following those responses and any ensuing corrections (if any) by the auditors, DHS will need to respond to system wide recommendations. Although the spot audits are not fully complete, I believe it is worthwhile referring to the initial overall findings and recommendations below in the context of the publication of 'Your Hospitals' for July to December 2008 as this is the period the spot audits covered.

RSM concluded that the DHS sample data agreed with the hospitals' electronic records with very few exceptions. Importantly, RSM found no evidence of manipulation or changes to the data reported to DHS that would mislead or improve reported performance KPIs.

The RSM review acknowledged that in some instances hospitals are using legacy systems/technologies to record and collate data which lack contemporary security and audit log capabilities.

RSM found a number of variations in practice and a number of aspects that require improvement. The audit reports are still being finalised and the management of the three hospitals have not yet had an opportunity to comment on the findings.

RSM has provided the following recommendations for improvement of data control and integrity:

5.3 Victorian Emergency Minimum Dataset (VEMD) recommendations

(a) Patient arrival time

DHS review the VEMD definition for arrival date/time and make clear to hospitals which time should be taken as the arrival time and clarify the recognition point for commencement of treatment of a patient.

(b) Date/Time fields within VEMD can be changed

Hospitals ensure changes to initial entry of 'Triage', 'Departure Time and Date', and 'Doctor seen' date and time of patient treatment details are captured in an audit log when input into the VEMD, so that reasons for these alterations are documented, evidenced and explained.

(c) Doctor treatment time

Investigate 'real time' systems where the doctor can record the actual time of seeing a patient and not the time when the doctor enters the data/update the record. RSM noted this technology would require a large capital investment and may not be a practical solution in the short to medium term.

(d) VEMD documented procedure

Hospitals develop and maintain effective data capture procedure manuals that all employees can access to assist employees to use the ED system correctly.

5.4 Elective Surgery Information System (ESIS)

(a) Not Ready for Care (NRFC) Supporting Documentation

DHS amend the ESIS policy to clarify the specific records a hospital should maintain to support the use of NRFC for patients on waiting lists.

If the back screen in the Homer system is not available and the system does not provide capacity to allow booking office staff to write additional notes detailing reasons for NRFC, then RSM recommend that hospitals implement an alternate process for recording inpatient notes and ESIS records with supporting reasons for clinical or patient NRFC days.

RSM further noted the Minister for Health wrote to the chairs of all Health Service boards instructing hospitals that they must write to patients informing them of any changes to their status or surgery date.

(b) Variance in Waiting List Days reporting in DHS compared to Homer System

Hospitals review files with variances and reconcile the ESIS extraction data with data on their system to understand the differences and the causes for these differences to ensure future data is accurately reported to DHS.

(c) NRFC Preadmission Clinic

DHS advise hospital management and elective surgery bookings staff to cease using NRFC for patients booked to attend preadmission clinics.

RSM noted that DHS is expected to release a new Elective Surgery Access Policy this financial year.

(d) Input of Surgical Referral into Homer System

Hospitals ensure processes for surgical referrals collections and processing to enable timely receipt and processing of the referral and that hospital staff be reminded of DHS requirements for all completed surgical referral forms to be collected and sent to the booking office as soon as practicable.

5.5 Next three spot audits

As indicated in the Minister letter of 9 April 2009, a further three spot audits are scheduled for the second half of 2009.

6. Complaints

6.1 Complaints framework and process

The data integrity complaints framework has been modelled on the mature DHS system. A data integrity webpage is currently being designed and will include provision for lodging complaints.

6.2 Complaints received

Although the above website is not yet developed there has been industry awareness of the Minister's 9 April 2009 letter which "encouraged people to bring forward evidence of deliberate data falsification, and ensure that all claims are investigated".

Since acting in the position of Director Hospital Data Integrity from early April 2009 I have received and thoroughly investigated one complaint. The complaint was exclusively based on hearsay and the complainant was satisfied with the regime of audits that DHS has in place together with those proposed.

7. Actions implemented or in progress

7.1 Letters to elective surgery waiting list patients

The Minister for Health wrote to Health Service board chairs on 9 April directing that patients whose waiting list status or surgery data changes are to be advised in writing.

Of the 27 reporting entities contributing to the Elective Surgery Information System (ESIS), 12 advised they have implemented these letters and 15 advised they have systems work or processes in hand.

I will be following up progress on this with Health Services shortly.

7.2 Bonus payments

The bonus payment framework associated with achievement of hospital access indicators has been abolished. Funding has been redistributed to Health Services on the basis of activity during the second half of the 2008-09 financial year.

7.3 Attestation of data accuracy

The 2008-09 Annual Reporting Guidelines have been updated to reflect the requirement that all Health Services are to provide a statement in their annual reports that they have appropriate systems and processes in place to assure the quality of reported data, and to identify those measures. The Guidelines provide a standard template for the 'Attestation on Data Accuracy' for the annual reports.

7.4 Statement of Priorities (SOP)

The SOP represents the key accountability vehicle between Health Services and the Minister. The SOP for 2009-10 and onwards will contain specific responsibilities for ensuring data accuracy and integrity.

7.5 Enhanced audit committee role

As previously mentioned, Mr Gardner recommended that hospital boards review terms of reference of Audit Committees with a view to including a function of overseeing the integrity of operational data. I concur with this recommendation.

7.6 Internal audit

Following the Minister's April 2009 letter, a number of Health Services have included data accuracy as part of their annual internal audit program. Such internal audits should inform any future Statewide or spot audits. I am currently following up progress on this with Health Services.

7.7. Improved data definitions

DHS is clarifying definitions relating to time to treatment measures such as “initiation of patient management”, “arrival time” and “triage time”, in conjunction with the department’s VEMD technical reference group (TRG). This group includes the Victorian Chair of Australian College of Emergency Medicine, a number of emergency department directors and information managers. In addition, Victoria is seeking to have these issues addressed nationally through the National Health Information Statistics and Standards Committee.

Following endorsement by the VEMD TRG, a new concept of ‘initiation of patient management’ will be introduced to the VEMD from July 2009 with the intent of providing more clarity for Health Services about when treatment of emergency department patients commences.

The next meeting of the VEMD TRG will consider a proposal designed to provide more clarity around recording of registration and triage times and when the ‘clock starts’ in measuring time to treatment for emergency department patients.

7.8 Intensive training

Through the audit processes, it has become apparent that Health Services staff understanding of key definitions, concept, business rules, etc. around data recording and reporting is inconsistent. To address this issue, the Department will conduct regular training for key Health Services staff, focused on clarifying rules, application of definitions and obligations associated with data and definitions for both emergency departments and elective surgery. An initial workshop will occur in August 2009 which will need to be reinforced by regular follow-up training. Additionally, the Department will visit major sites before the end of 2009 to assist in clarifying any issues, and to ensure that information provided during training has been accurately conveyed to other staff within the Health Service.

7.9 Systems development

So far, the audits have noted a number of different emergency department and elective surgery data systems of varying age and capability. In addition, audits have recommended investigating ‘real time’ systems for emergency departments.

These are expensive recommendations but well worth exploring for viable alternatives to provide for improved data security and data accuracy.

An Information Communication Technology (ICT) subcommittee has been established to provide advice and recommendations to the Emergency Access Reference Committee on longer term priorities relating to ICT within Victorian public hospital emergency departments. This includes providing a Statewide approach to relevant emergency department ICT projects and initiatives. The subcommittee comprises senior clinical and executive representatives from Health Services, Ambulance Victoria and DHS.

7.10 Data security review

Information technology security issues were also identified through the audit processes as a key area requiring improvement.

There are a number of data security improvement opportunities with the most important being the use of unique user logins and the activation of system audit trails.

To address this, the Department will develop and distribute to Health Services a set of guidelines and controls addressing improved data security. Departmental staff will then visit Health Services to assess current security practices, and make recommendations on critical steps towards improved security. Health Services will then develop and commit to a formal action plan on steps to improve information technology security within each hospital.

7.11 Data control guidelines

In addition to data security issues the various audits have identified a number of improvement opportunities.

The most important of these are accurate recording the date and time of patient departure from emergency departments and procedural documentation for new staff.

These are currently being formulated as interim data control guidelines for implementation by health services.

7.12 Data management compliance framework

In 2004, the Government introduced a financial management compliance framework (FMCF) which was based on the Australian Standard AS3806 Compliance Programs. The FMCF is now mature and bedded in. It is based on an internal controls self assessment of more than 150 check points. The FMCF is then annually externally assured and it supports the basis of CEO attestation to the relevant portfolio Minister.

The FMCF concept may be capable of adaptation to hospitals access data and could be developed after all the system wide and spot audits have delivered findings and recommendations. This will be investigated further.

Rob Barr
Acting Director Hospital Data Integrity
15 July 2009

