Personal reflections on a journey from contaminated medical records to an electronic solution

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The start
This journey commenced in August 2013 when a single medical record, one of over one million medical and community health records held by the NSW Central Coast Local Health District (CCLHD) was identified as being damp and mouldy. Far from being a complete account of the process and decisions undertaken since that date, this article provides a background of events and reflects on how a HIM who is well versed in the traditional aspects of our profession broadened her scope and with the support of CCLHD Executive, responded to a major crisis that had no short-term solution.

The record that started this journey was required for a clinic attendance at Wyong Hospital. The record was retrieved from a tertiary storage facility at West Gosford, tracked on the EMR and transported to Wyong Hospital Health Information Services (HIS). However, on arrival it was identified that the record felt damp and upon opening, was found to be mildly contaminated with mould.

Some historical background
Due to the unique nature of a shared medical record used across multiple facilities within CCLHD and space restrictions on the main hospital campuses, both active and inactive, medical and community health records were stored at West Gosford. Consequently, staff from HIS Gosford travelled to the facility daily and used a ‘cherry picker’ to retrieve and file into the 12-shelf high storage. The facility housed 420,000 patient records plus approximately 3.5 million loose sheets (and you thought you had a problem!).

Previously used as a stores distribution centre, the large barn-like tin shed, cold in winter and hot in summer, also housed the Equipment Loan Service Pool, new and used bed storage and was the last resting place for all that was odd and unusual or superseded.

As occurs with many tertiary storage areas, more and more records were added over the years with multiple runs of terminal digit filing and several sections each for medical, community health and deceased records on both compactus and static shelving. There were also the endless loose sheets, some boxed, palletised and plastic-wrapped while others were simply boxed and stacked on enormous open rack industrial shelving.

Review of the loose sheets identified a variety of documents including external clinical reports, referrals and of course innumerable pathology reports, which could not be destroyed without a mind-numbing, labour-intensive culling process.

What happened next?
Once that single record was recognised as being mouldy an external remediation company was engaged to identify and measure the extent of the contamination. The record that initially sparked the alert had been housed in shelving on the western wall of the facility, apparently exposed to previous unknown water incursions. Testing soon found that the majority of records and shelving within the facility were contaminated at varying degrees with a range of mould and high level colony-forming bacteria.

It was the receipt of a microbiology report advising that the ‘genera of mould detected constitute a health hazard’ and ‘continued occupancy … and exposure … is ill advised’ that initiated a chain of events with enormous process and financial impact. Immediately this report was received the use of protective personal equipment (PPE) was initiated for all HIS staff (including coders) and handling and circulation of records reduced from over 600 records per day across the District to being almost non-existent.

Clinicians who were accustomed to reviewing historical records to make decisions and undertake patient care on wards or in clinics were advised they could only view records within HIS wearing full PPE.

Furthermore, as records previously retrieved from West Gosford had been subsequently filed into the primary and secondary storage areas within HIS, it was considered prudent to have all HIS storage and offices tested for contamination. Unfortunately, investigation revealed various mould and bacterial contamination in both HIS offices holding approximately 167,000 records and more so in two secondary storage areas housing 247,000 records.

The initial response required HIS to maintain continuity of the provision of information for patient care while also protecting HIS, administrative and clinical staff and patients, alleviating concerns and preventing adverse health consequences from the contamination.

1 Eric Rollet discusses this issue from the perspective of the company contracted to remediate this situation on page 37. Ed.
Once all of those areas that could be remediated were dealt with, including replacement of a roof, repeated gassing of rooms and meticulous cleaning with a microbial agent, the question arose as to what would be the next step? How were we to deal with those remaining 420,000 records and 3.5M of loose sheets that could not be easily remediated? Would we spend a considerable unallocated and non-existent budget on remediation or would we look at a scanning solution?

**Positive outcome**

Options for consideration were: trucking the records in semi-trailers to undertake a dry freeze, gassing process in Queensland (over 1,000 km away) and having them returned to an expensively remediated warehouse or alternate new storage area; or, we could take the more costly option of scanning and then destroying our multitude of contaminated archival records and loose sheets.

To best evaluate the options available we launched a Request for Quote via the NSW eTendering procurement site. This required the development of a tender document and involved major input and advice from the Contracts and Leasing team, Finance and Corporate Services and ICT in identifying and developing specifications. When tenders were received and evaluated against other options for cost, timeliness and the optimal response to patient care, the decision to scan was made. The review and selection of tenders process was both methodical and arduous before the successful tenderer was contracted to uplift, prepare and scan the records for short-term access via a portal and eventual interface into our EMR.

Once approved, the contractor was given 24 calendar days to clear West Gosford of all records and loose sheets, an amazing logistical feat that was successfully undertaken, utilising 17,000 archive boxes and 12 semi-trailer loads.

**But wait, there’s more!**

In August 2014, the Gosford secondary storage, a large area located adjacent to the Conference and Education Centre and a repository to 197,000 records, was identified as the best option to house the Clinical Simulation Centre (SIM). After considerable consultation, analysis and writing of briefs, it was decided to add these records to those currently being scanned. Since the timely relocation of the existing SIM was vital to the staging of a major redevelopment of the Gosford Hospital, the records required decanting sooner rather than later. The external contractor again responded to the short timeframe in both the removal and scanning of these documents.

During this period there was also a review of escalating costs associated with the off-site storage of a further 214,000 records. With the focus on providing clinicians with immediate access to historic patient information it was determined that patient care would benefit if these records were also scanned. At the time of writing this reflection, arrangements are underway to progressively transfer records from one of two offsite storage facilities to the external contractor for scanning.

While all of this was occurring, HIS rolled out Cerner ProVision Document Imaging (CPDI) going live in April 2015 and are currently achieving a 4-hour KPI for ED and 48 hours for inpatient episodes, scanned and available to clinicians on the EMR.

**Challenges faced, lessons learnt and recommendations**

The 13 months that elapsed between retrieval of the initial contaminated record and the eventual decanting of the West Gosford facility were a kaleidoscope of activity including:

- maintaining full and open disclosure and communication with HIS staff providing daily updates in the initial stages
- discovering the varying types and effectiveness of PPE including goggles, masks, full and half-face respirators, HEPA and charcoal filters and downdraught tables
- revisiting long-past microbiology lectures and forever being able to spell Stachybotrys
- maintaining a comprehensive action/decision diary to keep on track in relation to the constant barrage of issues and which then provided the basis of an external communications log required as part of the procurement process
- having had no exposure to CPDI, learning the variances relating to back scanning old notes versus forward scanning using barcodes and an Event Set Hierarchy
- working with Contracts and Leasing staff to develop a comprehensive tender document and contract and becoming familiar with the eProcurement site
- undertaking an evaluation of tenders using weighted score sheets, scoring matrix and pricing evaluation
investigating Cloud management

deciding whether the final scanned product should be separated by existing dividers versus a single record PDF; after much discussion we went with the divided record, but this continues to generate debate on the various pros and cons

liaising with insurance assessors in relation to building structure and claims

providing as much unrestricted ‘business as usual’ as possible and never actually returning to previous business practices since one third of our records were unavailable in their original format

ensuring the tender document response sheet was formatted to support the evaluation process and also include detailed pricing response with options

being the ‘source of truth’ by being available and prepared to work very long hours

engaging the assistance of Work Health and Safety Coordinators and Infection Control experts to assist and respond to immuno-compromised and frightened staff

reporting up the important and need-to-know issues, not the minutiae

keeping exact financial records to ensure all costs (e.g. invoices, overtime, contractors, stationery, supplies) were appropriately apportioned

accepting and acknowledging assistance when available and being extremely thankful the CPDI Project Manager was able to assist

accepting also that if a decision or action was later found not to have been optimal, rectify if possible and then, as the Princess says, ‘Let it go’

errroring on the side of more precautions than less, which given the conflicting information about mould, reassured staff that their safety and wellbeing was paramount

determining what percentage of auditing is required to validate high level accuracy when vast numbers of records are involved. Even 5% of the West Gosford records equates to 21,000 records, a totally unrealistic task

remembering that ‘what doesn’t kill you makes you strong’!

Last words

It is strongly acknowledged at the end of this reflection that the success of these major changes could not have been achieved without the support, commitment and plain hard work of HIS staff. It also required input and ongoing support from CCLHD Executive, Finance and Corporate Services, ICT and a diligent Evaluation Committee. Further, this narrative remains incomplete until all of the contaminated records and now both manually and electronically culled loose sheets, plus the other historic records are available directly on the EMR, currently scheduled to commence in February 2016.

During the many months since the initial contamination, this HIM has undertaken work and been challenged with issues on a scale well outside a traditional HIM role and I believe this demonstrates the very broad capacity that our Applied Science Degree underpins.

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