A Calvary Hospital Group case study; delivering Digital Transformation using the "Show Value/ Grow Value" methodology

Calvary Health Care learned the lessons from other hospitals implementing electronic records which had suffered from budget overruns, resistant users and project delays. Following a successful pilot using the "Show Value / Grow Value" methodology, they chose to implement Vitro's Digital Medical Record across 11 of their hospitals. Implementation was paced in line with Calvary's resource capacity and the build-to-budget approach allowed the group to drive their Vitro journey in line with their year-on-year budget. The co-design process meant they benefitted from a Digital Medical Record designed by their clinicians based on ease of use principles.

Established in 1885, Calvary is a not-for-profit Catholic health care organisation working across 6 states and territories in Australia. Their 12,000 staff provide quality, compassionate healthcare to the most vulnerable, including those reaching the end of their life in both the public and private sector. They have implemented the Vitro Digital Medical Record (DMR) at 12 of their public and private hospitals, ranging in size from 64 to 180 beds.

CHALLENGE

In 2013 the Calvary Executive team identified the need to transform their medical records and clinical processes from being paper-based and manual to being digital and intelligent. They believed that doing so would:

- Improve patient safety through a reduction in variances from clinical best practice across the hospital group, and the elimination of instances of missing or illegible records

- Support staff through instant access to relevant clinical information at any time from anywhere

- Provide insight which would drive clinical and operational improvements

- Reduce costs associated with the management and storage of paper records.

The challenges they faced were:

- Perceived Risk: Failures of million-dollar EMR projects at either the implementation or adoption stages made the board justifiably reluctant to invest heavily before seeing real value

- While Doctors and Nurses are quick to adopt cutting-edge medical technology, the horror stories from the USA of clunky systems driving doctors from the profession made them wary of EMRs

- Budget: Traditional EMR systems are prohibitively expensive for all but the largest public hospitals

Therefore, they set themselves the challenge to find a solution that:

- Allowed them to progress their digital transformation iteratively in line with

    - The budget available in any given year

    - Their IT team's capacity to support the solution

    - The organisation's change management capacity

    - The value delivered

- Would be familiar to doctors and nurses and intuitive to use

- Would provide operational efficiencies to clinicians so they could spend more time with patients

- Provided open access to data so that they could run analytics to get insights into where and how they could improve their services

> " The ability to digitise paper records and then the ability to search it and analyse it is fascinating "
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> *Mark Doran (National CEO 2013)*

GROWING THE VALUE & THE VITRO SOLUTION

Vitro Software's solution aligned perfectly with Calvary's requirements. Through a combination of a highly scalable platform built on modern web technology and a pricing model which aligns investment with the value received, Calvary was able to alleviate the concerns of the board and secure funding for a pilot project. Vitro calls this the Show Value then Grow Value approach.

The Vitro user interface replicates existing paper forms which makes it instantly familiar to doctors, nurses and other healthcare professionals. Gone is the look and feel of the traditional EMR which clinicians variously describe as 'looking into a big database' or 'looking at an accountancy system'. Vitro's focus on 'fewer clicks' makes data entry relatively easy. Years of evidence-backed work spent designing the clinical paper forms were utilised with data presented in a way that is easy for clinicians to consume, creating clear calls to action.

However, Vitro is about more than replacing paper, it is about digitising processes and Vitro's ability to guide and automate workflows improves quality at source in real-time rather than through quality audits downstream.

Dashboards which collate the pertinent information from the patient chartbook and which can include alerts to patient issues or reminders for periodic care tasks, save clinicians time and improve patient care.

Vitro Software's philosophy of collaborating around the patient, combined with the open platform technology enabled seamless integration of their DMR with Calvary's existing IT infrastructure, and presented open but secure access to the Vitro datastore, for ad hoc reporting and analysis.

Vitro's Show Value/Grow Value journey with Calvary progressed across four stages, with the implementation being challenged to demonstrate value at each step along the way to secure agreement to progress.

Stage 1 Palliative Care	Piloting Vitro for a contained specialised service to determine if a Digital Medical Record could deliver on its promise.
Stage 2 End of Bed Charting	Following the success of Stage 1, Vitro was deployed to a more general clinical setting. Vitro replaced the End of Bed paper charts in 1 ward of 1 hospital and following its successful launch, was rolled out across all wards of 10 private hospitals – all within 12 months. The end of bed chart contains all aspects of clinical workflows for General Medical and Surgical functions.
Stage 3 Adding additional Intelligence and Specialities	The next step was to layer on additional intelligence including clinical workflow support. In addition, speciality services such as Oncology, Paediatrics, Maternity and Orthopaedics were added. Digital Discharge Letters were also added in preparation for the National MyHealth Record.
Stage 4 Giving Time Back to Clinicians	Stages 1 to 3 were about improving patient safety and adherence to best practice, stage 4 was focussed on giving back to the Doctors and Nurses, by delivering features such as dashboards that will save them time in their day to day activities.

> " The added extras that we put into Vitro for our application were our safety features that we were able to put into our clinical charts that allow us to ensure things are correctly filled in, that we don't miss important information or even just that numbers aren't added up correctly... so for us they were incredibly important features to enhance safety in our clinical notes. The thing we liked about Vitro technology was that is was intuitive so what we were doing there was looking at the charts as they were in paper and digitalising them so to a nurse or the unit they just look at the piece of paper and it will look the same. "
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> *Brenda Ainsworth - National Director of Public Hospitals (2015)*

SHOWING THE VALUE

"Nursing staff have been surprised at how easy it has been to use. Since the implementation of Vitro, patients have commented on the presence of staff closer to the bedside. They're not having to be at the central nurses' station because they have got access to information around the ward." Belinda McRae – Nurse Unit Manager Calvary Bethlehem

The value delivered to Calvary by Vitro was immediate and continues to grow.

Key highlights of Phase 2 included:

- **An implementation timeline (woe to go) across 10 hospitals of just 12 months with 4 Calvary staff working on the project**
- **Doctors and Nurses reporting that they found the system familiar and easy to use**
- **Little to no formal classroom training required with staff learning on the job (just-in-time training)**

However, the real value came as Vitro was used in the live clinical environment delivering value across many key dimensions. The following summarises the feedback from various Calvary end-users

PHASE 1 HIGHLIGHTS

THAT HELPED INFORM THE DECISION TO IMPLEMENT VITRO GROUP WIDE

›90% decrease in the time taken to audit medical records

95% improvement in the completion of clinical documentation

80% reduction in the time take to collate information for freedom of information requests

5%* Weight Gain of Chief pharmacist as she no longer has to run up and down stairs chasing records (*the weight gain was a real and unexpected consequence – the 5% is an estimate)

Patient Safety

- **The most immediate and obvious benefit was the guaranteed legibility of the patient notes, removing a critical risk to patient safety**
- **An unexpected benefit was that the volume of Clinical Notes increased - Doctors and Nurses write more in the digital format**
- **The intelligent decision support and workflow guidance provided by the system improved clinical practice e.g. Falls Risk: It was identified that action plans were not always being completed for Falls Risk Assessments on paper, but Vitro can ensure that where a Falls Risk is present an action plan is documented**
- **There is now one source of truth for clinical information for each patient – removing the opportunity for conflict and confusion**

Efficiencies in Clinical Practice

- **Simultaneous access to clinical notes creates huge time savings, especially for multi-disciplinary teams who need access to the same patient file**
- **Nurse managers can respond more quickly to incident reports, reviewing patient notes from their office or during a meeting, eliminating time lost in transit**
- **Automated arithmetic saves nurses time and reduces errors. E.g. The automated totalling of the Fluid Balance chart was received so well by the night staff that they kissed the project sponsor!**
- **Staff are no longer plagued by having to enter the same data repeatedly on multiple forms**
- **Reduction of manual data transfer between systems as Vitro shares data via open interfaces**
- **In the next phase, Doctor Dashboards and Nurse Handover dashboards will save clinicians time by collating the key relevant information from the patient chartbook and presenting it in an easy to consume dashboard**

Data Analytics

When data is captured digitally first, it creates a wealth of powerful information which can be used to drive operational and clinical improvements.

Calvary has a huge ambition to mine this data source to find insights that will deliver a better service to their patients.
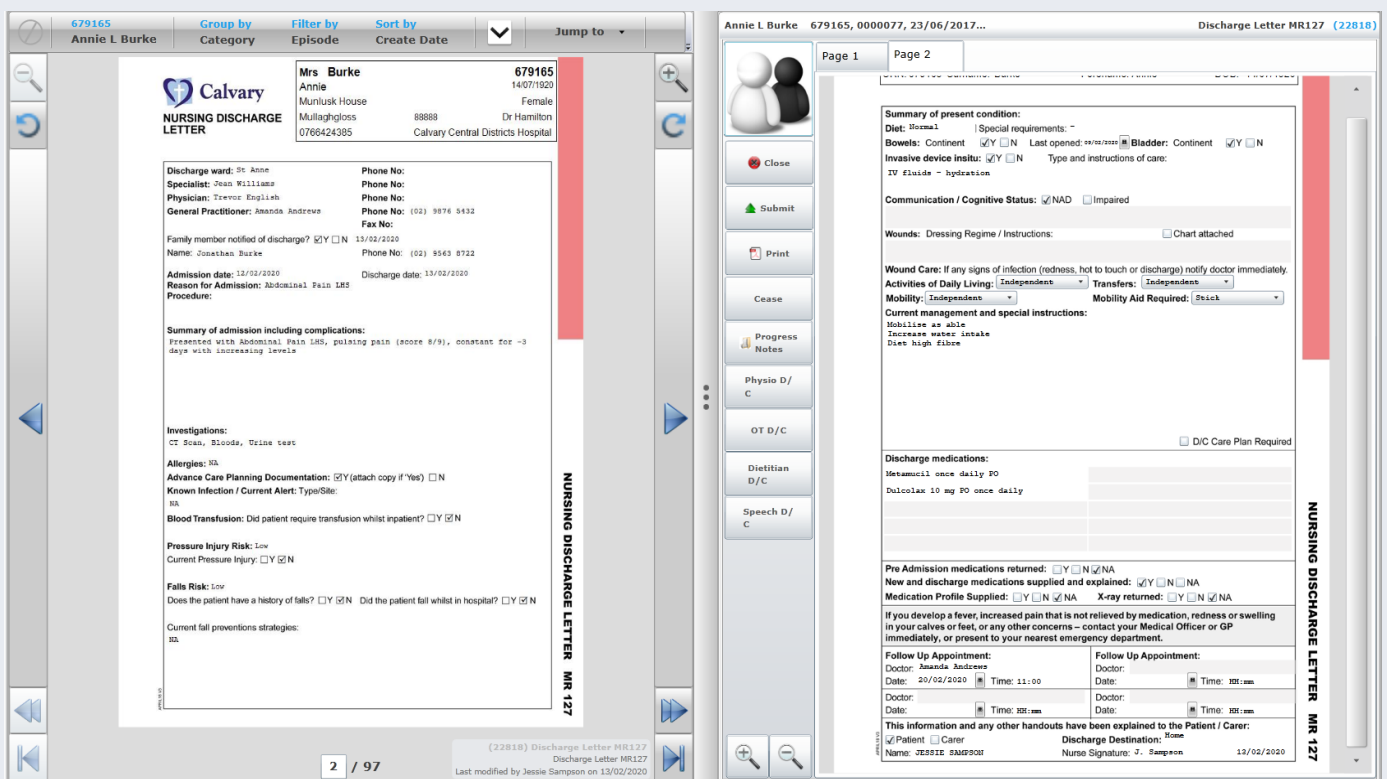
- **An example of how data is already being used relates to patients with polypharmacy. If on Admission Screening in Vitro, a patient indicates polypharmacy, this information is automatically sent to the pharmacy who use it to identify high-risk patients. This allowed Calvary to allocate their clinical pharmacy resources to the highest risk cases, leading to an effective use of resources and removing human error**

Direct Cost Saving

- **A more mundane but important benefit was the cost savings on the management and storage of paper records. Calvary estimate that Vitro has reduced these costs by 75% and they continue to decrease.**

FUTURE PHASES

Together Calvary & Vitro Software are working on Phase 5, which focuses on further integration, dashboards, increased mobility through HTML5 and the use of data (analytics).

As Vitro Software continues to deliver value to the Calvary Hospital Group the relationship grows.

I'm not spending time looking for records in places where they could be – I always know where the record is – it's on my (computer) desktop. Jane Hassing - Health Information Services, Calvary Bethlehem

Contact **Ruth Barnes** for more information rbarnes@vitrosoftware.com
+353 86 777 4843

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