



# Calvary Introduces Electronic Medication Management

Rapid improvements in clinical safety

Client name: Little Company of Mary Health Care, Calvary

Location: Australia

Industry: Healthcare

### Challenge

To replace current paper based medication management processes with electronic medication management for greater safety, reliability and efficiency.

### Solution

Calvary selected the MedChart electronic medication management system to provide electronic prescribing, pharmacy review and administration for in-patient wards.

### Results

Following implementation at Calvary Health Care Bethlehem in 2011, chart illegibility issues were eliminated and the palliative care service recorded an 84% reduction in medication errors. Early results at Clare Holland House, also a palliative care provider, show similar improvements in medication safety and increased efficiency. Calvary now plans to implement MedChart at all acute care facilities.

## Calvary replaced paper based processes with electronic medication management and saw rapid improvements in clinical safety

### The Challenge

There is now well-established evidence for the superiority of electronic medication management over paper based systems.<sup>1,2,3</sup> Professor Johanna Westbrook of the Australian Institute of Health Innovation, a leading researcher in the field has demonstrated what anecdotal evidence had long suggested – that replacing paper with an electronic medication management systems (eMMS) not only reduces costs, but it also helps prevent adverse drug events (ADEs).

Australian hospitals have been slow to adopt eMMS. However, as Westbrook notes in her research, “the momentum for uptake is unstoppable”<sup>4</sup>. Now Calvary, an Australian healthcare provider with more than 11,000 staff and volunteers is forging ahead. “Even in its early days we recognised the potential of MedChart” says Doran. “When technology finally caught up with it, in terms of tablet computers and reliable wireless internet, we knew it was time to leave our paper systems behind and move to an eMMS.”

In 2011, Calvary installed MedChart at Calvary Health Care Bethlehem Hospital (Bethlehem) in Victoria, a 60-bed public hospital that specialises in the care of patients with progressive neurological disorders and those requiring palliative care. MedChart was implemented to provide electronic prescribing, pharmacy review and administration across all inpatient units. The solution includes pre-defined orders and protocols to improve safety and efficiency when prescribing. All phases of medication management are supported by real-time clinical decision support and customisable rules and alerts.

The results – fewer ADEs, improved efficiency and speedier patient discharges – convinced Calvary that eMM systems were no longer an option, but a clinical imperative. In 2014, they introduced MedChart at Clare Holland House, a specialist palliative care inpatient unit in Canberra.

**“WE’RE 15 YEARS BEHIND OTHER INDUSTRIES IN TERMS OF LEVERAGING TECHNOLOGY. WITH ELECTRONIC MEDICATION MANAGEMENT SYSTEMS AVAILABLE, AND THEIR BENEFITS WELL DEMONSTRATED, NOT TO USE THEM IGNORES THE OVERWHELMING EVIDENCE IN MEDICAL RESEARCH LITERATURE. THE ADOPTION OF EMMS ACROSS CALVARY IS A SIGNIFICANT FOUNDATION.”**

Mark Doran  
CEO

**“WE CHOSE CLARE HOLLAND HOUSE BECAUSE IT’S A PUBLIC SUB-ACUTE FACILITY ATTACHED TO A LARGER PUBLIC ACUTE HOSPITAL. THIS PRESENTED US WITH A MANAGEABLE CONTEXT IN WHICH TO FURTHER DEMONSTRATE THE REMARKABLE BENEFITS OF USING CSC’S MEDCHART SOFTWARE.”**

Mark Doran  
CEO

## Implementation

While Bethlehem had been a ‘test run’ for MedChart, Clare Holland House was intended to provide a model for future implementations. As such, the project team lead by Karen Caldwell and Jane Etchells, worked to develop an implementation strategy that emphasised training for all Clare Holland House staff. In September 2014, for example, experienced ‘super users’ from Bethlehem visited Clare Holland House, where they addressed staff concerns and offered clinical perspectives to articulate key end user benefits’. Caldwell and her colleagues used these sessions to develop training manuals that could be used in future courses.

In addition to training staff, the implementation team also had to ensure that Clare Holland House was equipped with the infrastructure necessary to support MedChart. “As it turns out, we had various WiFi dropout zones in the facility,” says Tamara Prostran, Calvary’s National ICT Operations Manager. “So we spent two months installing an improved network.”



On the whole, there were few technical adjustments. “Fortunately, technology has really caught up with electronic medication management,” says Prostran. “We now can offer clinicians a variety of devices to meet their needs and the needs of patients”.

In preparation for the go-live at Clare Holland House, the implementation team focused on training for doctors, nurses and pharmacists. “The project manager, Karen Caldwell, took a very proactive approach,” says Prostran. “She even joined nurses during night shifts to ensure that the MedChart solution would fit their particular demands, such as the need for quick troubleshooting if there was a technical problem.”



## Case Study: Little Company of Mary Health Care, Calvary

**“CULTURAL RESISTANCE WASN’T SO MUCH OF AN ISSUE AT CLARE HOLLAND. THE BIGGEST CHALLENGE WAS DEVELOPING AN INTEGRATION STRATEGY THAT WOULD CAUSE MINIMAL DISRUPTION TO THE RUNNING OF THE FACILITY.”**

Tamara Prostran  
National ICT Operations Manager

As a component of local customisation, the project team was able to build commonly used protocols and create rules to display local guidelines, both initiatives assisting clinical staff with safer and more efficient medication management. For nurses, the ward overview monitor function in MedChart greatly enhanced, in real-time, the visibility of medication administration status for every patient – thus avoiding late or missed doses.

October 2014, MedChart went live at Clare Holland House. For the next two weeks, the project team provided dedicated support to quickly deal with any immediate difficulties – but staff training meant challenges were few and far between. “The first couple of days were a little hard,” says one nurse. “But I really like it now. It’s great that I no longer have to decipher the doctor’s handwriting on a medication chart.”

Implementation took just three months – an impressively brief time, given the revolutionary impact eMMS can have in a clinical setting.



**“THE INTEGRATION OF AN EMM SYSTEM AT CLARE HOLLAND HOUSE CAMPUS COMPLEMENTS THE EXISTING ELECTRONIC PATIENT RECORD (PALCARE), TO PROVIDE CHH INPATIENTS WITH A NEAR-FULLY INTEGRATED ELECTRONIC HEALTH RECORD THROUGH THE USE OF A CONTEMPORARY ELECTRONIC APPLICATION. THE INITIATIVE SUPPORTS IMPROVED SAFE PATIENT OUTCOMES AND PROGRESSES ALIGNMENT WITH THE NATIONAL STANDARDS FOR MEDICATION MANAGEMENT.**

Brenda Ainsworth  
National Director of Public  
Hospitals

### Problems Faced

Prostran, says one of the main obstacles to introducing eMM is cultural resistance. “As inconvenient as paper systems are, it’s often a case of ‘better the devil you know’,” she says. “Clinicians can be reluctant to switch to electronic solutions.” Whilst this wasn’t the case at Bethlehem, where staff were enthusiastic to switch to a new medication management system, there were concerns the system might slow them down, taking valuable time out of an already demanding schedule.

According to Prostran, staff at Bethlehem were reassured when they realised that MedChart was not only developed in consultation with practicing doctors, but that it has also met the national standards for eMMS accreditation. With thorough training, staff were able to adapt smoothly to the new system and quickly start taking advantage of it.

As a result, staff at Clare Holland House – having learned of MedChart’s successful use at Bethlehem – were eager to experience it for themselves.

Staff members reported difficulties among casual workers who are inexperienced with MedChart but must use it almost immediately on their first shift. This often requires a period of MedChart induction time. Thankfully, detailed Clare Holland House training manuals provide a ready-to-go learning resource which complements the intuitive nature of MedChart itself.



**“CALVARY IS COMMITTED TO SEEKING OUT OPPORTUNITIES TO USE TECHNOLOGY TO ENABLE HIGH RELIABILITY, SAFE CARE AND THE IMPLEMENTATION OF MEDCHART IS A KEY ORGANISATION WIDE STRATEGY TO ACHIEVE THIS.”**

Sue Hanson  
National Director Clinical Services

**“WE CHOSE CLARE HOLLAND HOUSE BECAUSE IT’S A PUBLIC SUB-ACUTE FACILITY ATTACHED TO A LARGER PUBLIC ACUTE HOSPITAL. THIS PRESENTED US WITH A MANAGEABLE CONTEXT IN WHICH TO FURTHER DEMONSTRATE THE REMARKABLE BENEFITS OF USING CSC’S MEDCHART SOFTWARE.”**

Mark Doran  
CEO

## Clinical Value

Following introduction of MedChart at Bethlehem in 2011, an immediate benefit was the elimination of illegible orders. Staff no longer needed to decipher poor hand writing or search for medication charts. Not only has this saved time, but it has also contributed to an 84% reduction in medication errors.<sup>5</sup>

Early evidence from Clare Holland House shows a similar pattern of error reduction and improved clinical workflows.

These results are aligned with peer reviewed published research on the effectiveness of MedChart in Australian hospitals. In February 2015, Prof Johanna Westbrook published a study on the cost-effectiveness of eMMS in hospitals.<sup>6</sup> Comparing the cost and benefits of paper-based prescribing against MedChart, the researchers found a reduction in potential adverse drug events (ADEs) of 71% and estimated savings of A\$63–66 per admission (with annual savings of more than A\$97,000 for the ward studied).

Staff members at Clare Holland House have already been impressed with the potential for improved patient safety. “MedChart provides a complete solution, and once you know how to use it, various problems caused by paper systems are completely eliminated,” says one nurse. “There are no problems with reading prescriptions and no confusion as to the patient’s medical history. By saving time previously spent finding this information, we can devote more of it to what really matters – sitting with our patients, discussing their concerns, and ensuring that they receive a warm, supportive and informative bedside visit.”

### Supporting data

\* Based on 2013/14 admission figures supplied by Calvary, there were 143,177 private hospital admissions and 59,521 public hospital admissions for the year. Estimated savings from implementing MedChart across all acute care beds in the Calvary group is therefore:  
 $(143,177 + 59,521) \times \text{A\$63}$   
 (Westbrook et al estimated savings resulting from eMMS implementation) = A\$12,769,974

## Business Value

Calvary is in the process of conducting a post-implementation study of Clare Holland House. Six months after MedChart went live at the facility, anecdotal evidence suggests similar outcomes to those documented by Westbrook et al.

Westbrook's 2015 paper on the cost effectiveness of eMMS, specifically MedChart, is one of the first studies to estimate the monetary savings from avoided ADEs – the researchers estimated a resultant saving of \$63-66 per admission. In 2013/14 Calvary admitted 143,177 private patients and 59,521 public patients across their 13 acute care hospitals. Therefore once MedChart is implemented across all acute care beds in the group, the estimated cost saving is around A\$12,700,000 dollars annually, not to mention the avoidable harm to patients.\*

According to the pharmacist at Clare Holland House, MedChart has already improved efficiency. "We can now streamline the supply process, ensuring that the right medications are ready when patients require them,". An additional benefit is the eMMS's ability to integrate medication ordering processes with information from the government's pharmaceutical benefits scheme (PBS). This ensures that whenever possible generic medications are used instead of more expensive brand-named alternatives.



**References**

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**Continued roll-out across the Calvary Group**

MedChart has already transformed patient care at Bethlehem and at Clare Holland House – medical personnel now spend less time chasing paper and more time caring for patients.

When asked if his experience with MedChart has encouraged him to consider it for other facilities, Doran didn't hesitate. "MedChart is a step change in observable improvement in safety, outcomes and productivity," he says. "Now that we've seen what it can do, we're looking forward to implementing across Calvary's private acute hospitals".

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