



Harnessing Smart Data to Provide Smart Healthcare

Clinical Model Design & Digital Infection Control Solutions

(Foreword)

A changing tide for the healthcare industry

In international comparisons of health, Australia tends to perform admirably against other countries.¹ This is, in part, because most Australians have access to quality healthcare and our clinicians are generally highly regarded. Across the board – patients, consumers, and the broader public place their trust in health professionals to provide safe and high-quality care.² So, the onus to not only maintain but *improve* the safety and quality of health services remains incumbent on all within the sector. Of course, few systems are without flaws, and key risks have been identified within the industry.

Despite a system-wide commitment to maintain improvement, problems tend to arise with the implementation of new or updated systems into continuously evolving environments. Contemporary models of care are sophisticated and rapidly changing. In hospitals, for example, there are intricate webs of processes related to the wide range of services offered across tertiary, secondary, and primary sectors. Patients and general consumers move between these sectors at varying degrees and, naturally, risks exist at all points of their journey.³⁻⁴

As a result, the constant challenge for practitioners is determining how best to mitigate these risks without compromising efficiency. The advent of the COVID-19 coronavirus pandemic has only heightened the need for such systems to assist with the growing demands placed on the health sector.

With over 20 years of experience within the eHealth space, Ocean Health Systems has firmly established itself as a leader in clinical data model design and digital infection control solutions. We believe a good health system is one that delivers quality services to all people, when and where they need them.

To this end, our products are delivered with the final users in sight. Our staff, who come from both IT and clinical backgrounds, help us translate our customer's needs into practical, user-oriented technology that complements clinical workflows. This has led to us collaborating with international and national departments of health, health networks, large hospitals, aged care providers, and smaller practices alike.

In this whitepaper, we discuss the specifics of our services and how they address the ever-changing needs of the healthcare sector moving forward.

Our Services and Solutions

Consultation services

Ocean Health Systems is backed by a team of highly specialised and experienced personnel, all of whom are committed to the openEHR methodology. The implementation of new solutions uses this methodology, the international clinical models, and Ocean's EHR platform to leverage the existing principles, clinical knowledge, and infrastructure. This approach to solutions and our collective experience in health informatics allow Ocean to deliver greater business value to partners and customers.

Health software engineering consulting

The experience from implementing health record solutions across different care settings allows Ocean Health Systems to provide consultancy to both experienced healthcare solution providers and to those that are new to the industry enabling a faster, less risky solution delivery. As a result, the practical knowledge of integration with different development technologies and health information standards allows Ocean to evaluate solution architectures and technology options efficiently and recommend best practices.

Key Ocean members have been involved in national and international health information standards working groups and are globally recognised experts in these communities. Ocean Health Systems continues to follow trends in health information standards and technologies, which benefits clients by ensuring solutions are aligned with standardised health information practices.

Clinical modelling

As the first company to develop openEHR solutions, the clinical modelling experience of Ocean Health Systems is second to none. Having developed both the original Archetype Editor and Template Designer to produce clinical models and the Clinical Knowledge Manager to provide clinical model governance, Ocean has the breadth of experience to offer clinical modelling services. Our experience becomes especially relevant in projects where multiple standardised or non-standardised data sources are normalised into a common clinically verified representation. Our informatics team combines clinicians and technicians with years of health experience, which means that our capability to collectively analyse and model clinical concepts for use in real-world implementations is unique in the industry.

Health solutions development

The health solutions development services provided by Ocean Health Systems is based on empowering clinicians in their care settings to define their clinical information and workflow requirements. Combined with our experience in clinical modelling, our solutions development approach and an agile methodology allows the clinicians to be in control of the solutions being implemented. Our experience shows that training clinicians to express and discuss

their requirements via openEHR archetypes creates a health solution ecosystem with many stakeholders. Our methodology has been adopted globally and is now employed in several national and regional eHealth projects.



Clinical Knowledge Manager

Clinical model governance, made simple

Typically, national, or regional digital health initiatives and individual healthcare organisations encounter clinical data from a myriad of systems. Not to mention from various users and for differing use cases. As a result, numerous – often incompatible – data designs exist, requiring endless mapping between systems, departments, and sectors. For example, healthcare organisations must align clinical data to ensure consistency of patient care between services, data analysis, and reporting components. With all this already at the forefront of healthcare organisations' attention, national and local standards require even more commitment from all stakeholders.²

Ultimately, many of these issues can be overcome through the implementation of the right overarching system and methodology or, in this case, a singular system: Ocean Health's Clinical Knowledge Manager.

Redefining clinical data models

Clinical Knowledge Manager (CKM) is a powerful collaboration tool that helps users identify and define models of clinical data. It helps organisations describe, understand, and manage clinical data models and how they can be used across applications.

CKM is designed to support national and regional initiatives as well as individual healthcare organisations to streamline the data design and definition process, thus harmonising the clinical know-how. Users can view details such as version control to view exactly when models were last updated, understand the current state of the review process, and once ready, publish these models for organisational use.

CKM in action

Health jurisdictions and national programmes can use CKM in the development of clinical content standards for national or regional use. CKM replaces time-consuming manual methods and meetings with efficient online collaboration facilities. This is especially useful in engaging clinicians with little time to spare while ensuring that the clinical content models reflect the clinicians' requirements. With convenient built-in engagement functions, CKM

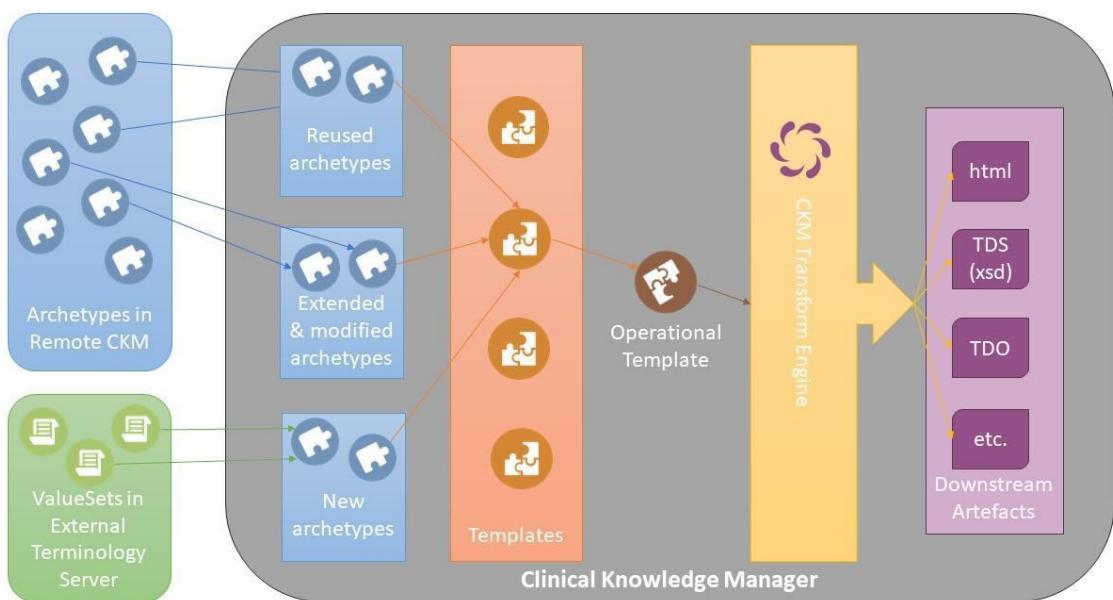
simplifies manual operations, including governance workflows. The result is measurable in terms of quality, time-to-delivery, and reduced human resources requirements.

Ultimately, CKM is a cloud-based Solution that supports:

- Collaborative development
- Community review
- Management, governance and
- Publication of clinical data models

Agreed models can be transformed into tangible content and technical artefacts that can be distributed to a mass audience. CKM is built on a scalable digital asset management platform that allows searchable meta-data to be added to each archetype, template or other asset as required by the user. Related documentation can be stored to support the knowledge authoring. All assets are indexed via a clinical content ontology and can have any amount of meta-data associated with them.

Solution architecture



Why choose CKM?

- Over 20 years of experience in supporting the openEHR approach
- Available online and managed remotely
- Streamlined installation and maintenance
- Supports openEHR templates and archetypes
- Universal interoperability among all forms of electronic data
- Proven global deployments in Norway, United Kingdom, Australia and Slovenia
- Strict artefacts governance and quality control



Multiprac Infection Control & Staff Health

Improving infection surveillance & staff health

Right now, is a challenging time for everyone, particularly within the health sector. Managing the potential threat of an infection is difficult even without the added complication of a global pandemic. In fact, every year an estimated 180,000 Australians are impacted by infections associated with healthcare. Altogether, these patients occupy an additional 2 million hospital bed days.⁶

Organisations strive to reduce Healthcare Acquired Infections (HAIs) to ultimately improve patient outcomes and reduce the related costs. Generally, this requires a coordinated management of infection related activities an evaluation of prevention program outcomes. Ocean Health System's Multiprac product leverages over 20 years of experience in delivering eHealth technology to provide the insights and support practitioners need to manage HAIs.

Infection control for practitioners, by practitioners

Multiprac Infection Control and Staff Health takes the stress out of the practitioner's every day by helping them focus on what they do best – caring for patients. Built on Ocean Health System's openEHR platform, the system is designed by some of the world's leading health informaticians, guided by international standards and best practice, to deliver a feature-packed product.

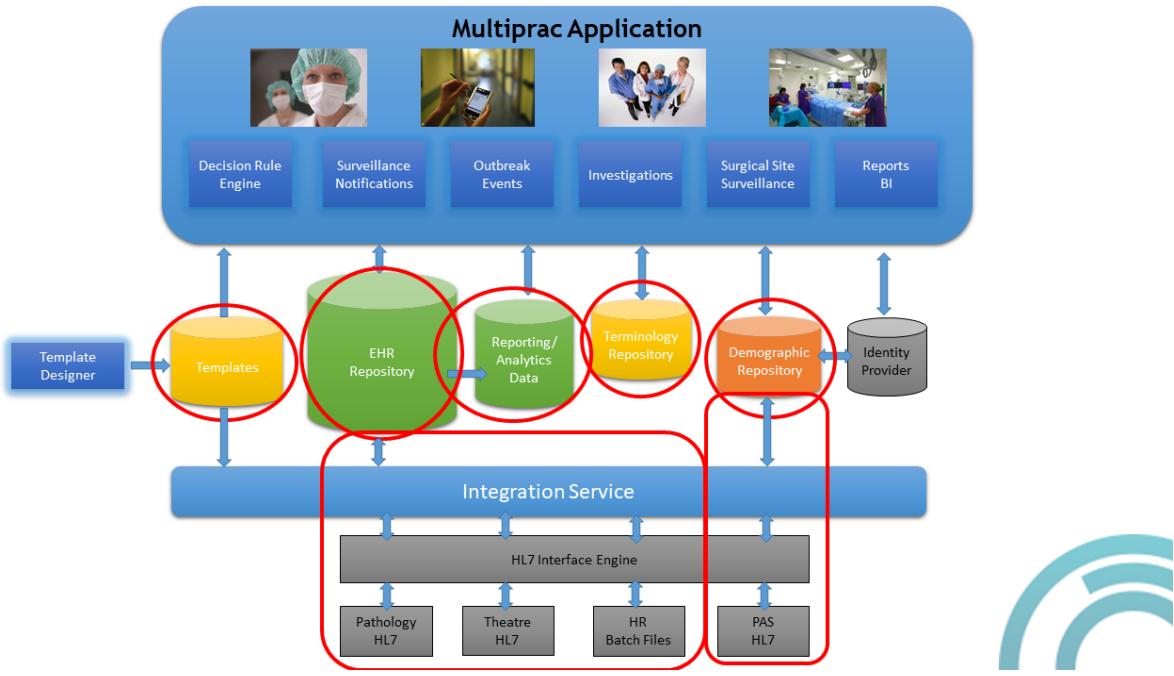
Multiprac can be used to:

- Provide automated monitoring of HAIs.
- Identify adverse trends.
- Help implement process improvement measures, and.
- Assess effectiveness of all interventions.

Built with the clinician in mind

Multiprac combines best of breed technologies and industry best practice to deliver a premium management system. Drawing data from multiple sources, Multiprac combines this information with analytical capability and reporting to help manage infection outbreaks, avoid hospital readmissions, and improve overall staff health.

Solution architecture



The benefits of Multiprac

Multiprac will provide you with instant results by:

- Aggregating data to provide surveillance and meaningful information to help control infections and improve staff health
- Using predictive models to help significantly improve health outcomes
- Providing real time data views that make interactive analytical reporting a breeze
- Supporting complex algorithms to increase accuracy and significantly reduce time required to monitor information in multiple systems
- Providing highest level of governance and security to ensure clinical protocols are followed, and sensitive information doesn't end up in the wrong hands
- Scaling to any size enterprise, care setting and budget

Partner with us

With a proud track record of innovation, Ocean Health Systems encourages collaborations and partnerships with a multitude of clients, including the following:

- Vendors & Subcontractors – software or services providers
- Resellers – Selling solutions to end customers
- Alliance Partners – Selling solution packages we co-develop and co-market by leveraging global salesforce worldwide

Our team of experts works closely with external partners to identify and capitalise on shared goals, values, and outcomes. We work collectively; drawing on the global resources and expertise of other organisations to harness our leading-edge Australian innovation and technological expertise that can provide our clients with unique capability advantages.

Ultimately, it is our partners that are fundamental to improving Ocean Health Systems' outcomes. We believe in harnessing the strengths and abilities of others from different corners of industries to solve complex challenges. In today's fast-paced environment, a "do-it-alone" approach is no longer the most ideal strategy for growth. Which is why we are constantly looking for new ways to drive collaborative innovation that delivers on what our clients need today – and in the future.

Interested in partnering with Ocean Health Systems? Align your business with us today. [Contact](#) us to find out how you can be involved.

About the author

Ocean Health Systems

Ocean Health Systems is an Australian company providing health information solutions to support health and social care. We are passionate about meaningful data and future proofing our health information. Aside from our many market firsts, we are driven by the same core values as you – helping clinicians improve health outcomes for patients.

With a team of medical gurus and health informaticians, Australia-wide and beyond, you will never be short on finding someone to talk to. So, get in touch with our team today to discover how we could help your organisation streamline medical processes and maximise efficiency.

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Appendix / References

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