

## Digital Transformation in Healthcare

Choosing an Electronic Medical Record (EMR)  
System for Your Organisation

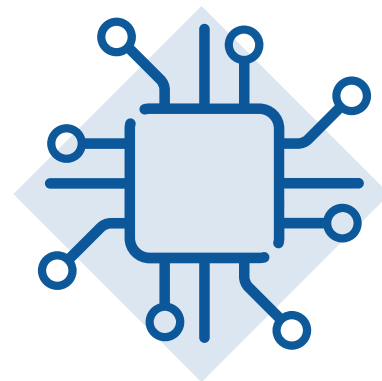


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# 1. Choosing an EMR for your broader Digital Health Transformation program



Around the globe, healthcare is being transformed by digital technology. From predictive analytics that can identify a patient's health condition even before they're aware of it themselves, to home monitoring devices that allow people to be cared for in their own homes, new options for prevention, care and treatment are changing how healthcare is delivered and managed.

These innovations, along with rising public expectations for access to medical professionals and services, are driving the shift to modern digital healthcare systems that bring together services, organisations, processes and data. The benefits for healthcare institutions include streamlining processes and reducing costs, as well as transforming care delivery.

## 1.1 Digital Transformation in Australia

Australian federal and state jurisdictions as well as primary care, aged care, community health services and many private health organisations are at different stages in their digital transformation plans. It has been acknowledged that 'digital health has the potential to enable information sharing between the various parts of the Australian health system and thereby support programs and initiatives that integrate care, wrapping it around the needs of patients'

**Note:** *There are multiple acronyms in use to describe these systems including Electronic Medical Record, Electronic Health Record, and Electronic Patient Record. For consistency, we refer to the Electronic Medical Record, or EMR, throughout this white paper.)*

## 1.2 Digital Transformation in New Zealand

In New Zealand, many healthcare providers still rely on paper-based systems. Through the recent health system reforms and the Te Pae Tata Interim New Zealand health

plan, digital transformation is seen as a key component to enable equitable outcomes. Through Te Pae Tata 'A national approach to digital solutions will be adopted to improve the capacity of services for digitally-enabled service delivery, to increase digital access options and improve digital literacy.' ii

## 2. Choosing an EMR

In selecting an EMR, there are multiple criteria that contribute to identifying the EMR that's the best fit for your organisation. These are some aspects to consider:

### 2.1 Adoption is everything

It's an obvious statement, and yet stakeholder adoption of the EMR has been one of the greatest challenges to moving beyond digitising historic clinical workflows, to truly transforming the workflows through modern digital tools that better engage stakeholders.

There are many reasons adoption has been a challenge from solutions not well aligned with the workflows and Clinician practice in Socialised Care economies, to monolith solutions based on older technologies that essentially mirrored manual practice and are not architected to incorporate technologies proven to encourage adoption.

While a level of benefit has been achieved regarding scale, speed and quality, and adoption remains a challenge and significant transformation has not occurred.

### 2.2 An Open vs. a Monolithic Solution

Beyond healthcare, digital transformation of other industries has evolved from stand-alone large scale backend systems towards solutions incorporating new technologies far more supportive of stakeholder engagement and in turn new digitally enabled workflows, simply not possible under manual or historic monolith IT systems.

Care for an individual is provided across multiple organisations and settings, often at the same time. No care provider is an island and their EMR must enable collaboration with partners in the health ecosystem – not create data silos and barriers.

The next generation of EMRs must intelligently connect systems, data and people to enable the creation of new care ecosystems that are greater than the sum of their parts. These EMRs must support care plans across multiple conditions, organisations and settings, provide intelligent support for clinical decision-making and care execution, and provide real-time analytics at an individual patient and population level to support research, planning and outcomes measurement.

**“ The next generation of EMRs must intelligently connect systems, data and people to enable the creation of new care ecosystems.**

The rigorous adoption of open international standards underpins this new model of digitally enabled care, where digital systems work together to maximise the effectiveness of health systems in improving the health of populations and the quality of care to individuals.

## **2.3 A Holistic Solution vs. Best of Breed**

Much of the frustration experienced by EMR users is the result of broken workflows where clinicians are forced to jump between systems to complete a task. This adds time, complexity and clinical risk to the process.

*A holistic hospital information system* is comprised of fully integrated modules, that cover all core clinical processes within the provider, digitally supporting medical and nursing pathways. Implemented and managed by a single partner, it offers significant benefits in performance, integration and support. A holistic approach to system selection keeps the number of subsystems as low as possible.

A solution composed of a variety of third-party software solutions and a mix of systems, on the other hand, can eat up resources and may not be able to scale to support the services you require. A mix of solutions can also create data silos, with each representing a varying degree of difficulty to merge the data into the primary system.

## 2.4 Cloud Ready vs. Hosted Solutions

The shift to the cloud is a key enabler of digital transformation as recognised by both the Australian and New Zealand health care systems through their cloud-first policy's. The public cloud offers a host of economic and performance advantages, as well as providing centralised data security, improving solution resilience and cyber security.

**Compared to a third-party hosted data centre environment, for example, the public cloud offers these benefits:**

- users don't have to buy or configure the physical infrastructure for applications
- there are no limits to scaling services, applications or resources
- a large infrastructure can be managed with a smaller IT team, reducing staffing requirements
- offers choice of operating systems

Similarly, a private cloud, or an on-premise cloud option, requires significant time and resources to set up, manage and upgrade hardware and software.

Additional benefits of a public cloud-based EMR include secure access to services, offering truly mobile support to clinicians inside, and outside, the walls of the hospital, accelerated deployment times and enabling the EMR to consume other value-adding cloud services, for example AI/ML services, analytics, etc. Finally, cloud services are greener than on-premise services.

## 2.5 EMRs That Are Designed for Clinicians vs. EMRs Built for Billing

A lot of hospital information systems are administratively and billing-focused, rather than care-centred. When the design of the EMR is based on supporting the delivery of care, with clinical and supporting administrative workflows as the starting point, relevant data is captured at the point of care and made available in real-time to support the planning, monitoring, reporting and billing processes. This significantly increases the value of the EMR to the organisation by making it a tool that supports the real-time management of the hospital and significantly improves the user experience of the EMR.

**“ EMRs that require a lot of training to use, that cannot be easily customised, or that add to the administrative burden of busy professionals can lead to staff burnout and reduce the value that the EMR is expected to deliver.**

## 2.5.1 The User Experience

The EMR needs to support the daily work of users across all departments and specialties within the healthcare facility. EMRs that require a lot of training to use, that cannot be easily customised, or that add to the administrative burden of busy professionals can lead to staff burnout and reduce the value that the EMR is expected to deliver. Good design is important here too. An EMR that's simple and intuitive to use can significantly streamline the initial implementation and simplify care processes.

## 2.6 Key Question Checklist

**These are some EMR attributes to consider:**

**Interoperability:** Does the EMR utilise international eHealth standards to support collaboration across organisational boundaries?

**Usability:** Is it easy and intuitive to use, or do users need a lot of training to adopt and use it?

**Compliant:** Is it compliant with national regulation and local practice?

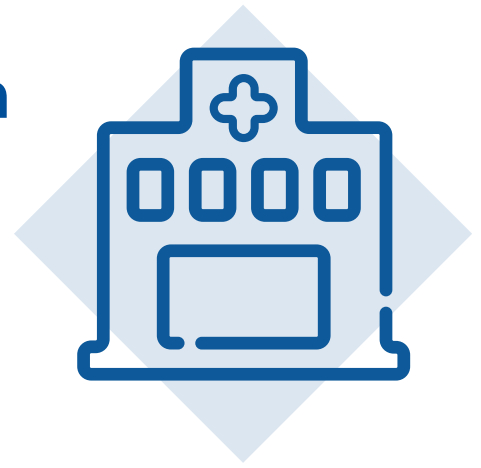
**Processes:** Is the EMR readily available to use at the point of care, with relevant data, insights and workflow?

**Device independence:** Does it work seamlessly across desktops, tablets and smartphones?

**Integrated solution:** Does it provide comprehensive support across care pathways?



## 3. ORBIS: The Foundation of a Modern Digital Healthcare Provider



ORBIS is Europe's leading EMR solution, installed in over 1,000 hospitals across Europe and is the number one EMR in Germany and France, measured by installed base. Our latest version, is based on more than 25 years of user experience, incorporating a wealth of insights and innovation. In addition, Dedalus is the largest EMR vendor globally outside the US<sup>iv</sup>.

ORBIS is a comprehensive and holistic hospital information system. It consists of more than 40 fully integrated clinical modules, that cover all processes within and around the daily business of healthcare providers. It digitally supports medical and nursing workflows and is fully integrated with PAS solutions to support seamless managerial and administrative workflows.

ORBIS covers all clinical and administrative use cases such as High-acuity care (including Emergency, OR and ICU), regular care (including Nursing), Medication, eHealth, scheduling and care coordination and Patient Administration through our PAS solutions. The solution is delivered with pre-configured clinical content, workflow and forms based on recognised standards. Utilising multiple customisation tools, ORBIS can be further tailored to meet each customer's individual needs. Reducing clinical risk and improving outcomes and efficiency are the drivers of our application design be it on a desktop or a mobile application.

### 3.1 Building the Optimum User Experience

Digital products need to be intuitive and usable without deep IT knowledge and tailored to the needs of users. From the very beginning of the design phase for ORBIS, the requirements and needs of end users are put into the focus of product development and to this day continue to evolve to incorporate modern digital technologies. Our devel-



opment and deployment teams comprise healthcare experts including clinicians from a range of clinical disciplines along with IT and UX experts, who start with an extensive analysis of the end user's daily activities and the key outcomes to be delivered.

The use by clinicians is at the centre of design considerations for ORBIS. Beyond general user experience principles, we have set a strategic focus on continuously guiding software design by clinicians working full time with the development teams.

## **3.2 Public Cloud Maximises Performance & Cost-Efficiency**

The Dedalus Healthcare Platform is hosted on Amazon Public Cloud and leverages Amazon Web Services (AWS) Cloud Computing Services and AWS Managed Services (AMS), and provides a set of common shared platform services such as remote access, deployment automation, network security and monitoring.

Healthcare organisations using the Dedalus EMR can flex their data processing power at a local level. Through the cloud service the analysis of transactions and processes enables compute power to be tailored for an individual organisations business needs. Greater flexibility from being on the cloud means that you can benefit from making local choices relating to upgrades, configuration, and training. For example, additional training environments can be stood up quickly to reflect peak training periods and you can choose when to do required upgrades.

Delivering the service on the cloud means that outages are no longer required to support disaster recovery testing and the adoption of security patches. This ability to continuously adopt platform releases and patches provides an evergreen service delivering improved performance, new capabilities, features and an enhanced level of resilience and security through global surveillance centre services, and with an additional layer of security at the organisation and data centre level.

Dedalus is experienced in delivering solutions on Public Cloud with 9 Trusts in the NHS having been transitioned to public cloud (EMR and PAS) and projects underway in New Zealand to move solutions (MedChart, WebPAS) to the public cloud.

### 3.3 A Comprehensive Clinical EMR Solution

With ORBIS, you can design the processes in your clinic efficiently and comprehensively. This reduces expenses for administrative tasks, documentation, and coordination, increasing time for care and enabling a focus on delivering improvements in care delivery and outcomes.

The medical workflows in ORBIS optimise the interaction of medical areas with the general processes in the hospital. The coordination of the needs of doctors and nursing staff results in a qualitative improvement in patient care through the comprehensive availability of information.

**“ The coordination of the needs of doctors and nursing staff results in a qualitative improvement in patient care through the comprehensive availability of information. ”**

In particular, the integration of care into the processes with ORBIS creates new possibilities for care, for example in care planning. This means that you are supported, both in the tasks in the very special procedures of care and in the general processes.

For certain hospital areas or clinics, ORBIS will also offer specialist departmental solutions in which subject-specific processes and documentation are integrated.

ORBIS also offers the ideal basic solution for all overarching processes in your clinic. As standard, ORBIS provides all the functions that are required to safely complete overarching tasks. But even beyond the base, there are many specialised programs and extensions. In addition to providing comprehensive, end to end, clinical support, ORBIS has a range of 'Add-Ons', that automate small tasks, evaluate data, or simply accelerate certain processes.

Typically, these are forms or reports that are created with the ORBIS Composer or the medical query generator. In addition, the Composer tool provides a 'low-code' approach to rapidly create new clinical workflow and customisations that enable organisations to rapidly develop support for new clinical practice and process in their organisation.

# For More Information

If you'd like to learn more, about EMRs and ORBIS,

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## References

- i Australian Digital Health Agency, Australia's National Digital Health Strategy 2018
- ii Te Pae Tata, Interim New Zealand Health Plan October 2022
- iii Based on 2021 annual figures for DACH.
- iv KLAS Research Performance Report, April 2021.