Recognition of exemplar practice Royal Flying Doctor Service SA/NT

Royal Flying Doctor Service (RFDS) Central Operations SA/NT were awarded exemplar practice for the development and implementation of a bespoke prehospital electronic health record.

Background

The Royal Flying Doctor Service (RFDS) SA/NT exists to support healthier and happier Australians, no matter where they live, work or play. It provides emergency, aeromedical and comprehensive community health care – in the air, on the ground or virtually – to someone every 10 minutes in rural and remote South Australia and the Northern Territory.

RFDS SA/NT provides emergency care in complex environments and across state and territory borders. This requires clinicians to align clinical protocols, procedures, clinical decision tools, and documentation with the multiple region, state or territory requirements in a single patient journey.

Protocols for the delivery of clinical care and documentation need to serve the needs of specific patient cohorts (including neonates and paediatrics) to enable the identification of alerts and risks in a timely way and support effective communication at transitions of care. Additional challenges can be caused due to the inability to connect to the internet, software interoperability and the requirement of hardware to function in harsh and unpredictable environmental conditions.

States and territories have been working to meet the need of interoperability between state-based digital health systems for hospitals and ambulance services, as well as the national goal of contributing to My Health Record.

What was the issue?

Prior to the development and implementation of the pre-hospital electronic health record (EHR), RFDS SA/NT faced challenges in effectively communicating patient status between transferring teams (in-air team, referring location, medical retrieval coordinator on ground, receiving service), and documenting in real time, clinical entries from multiple sources in the patients' paper-based healthcare record.

What was the solution?

The implementation of the EHR represents an innovative solution that overcomes many barriers to meeting the requirements of the NSQHS Standards for health services working in highly unique and challenging contexts.

A co-design process was used throughout the project life cycle, which exemplifies the critical success factor of aligning an EHR with current state clinical workflows and enhancing these workflows' functionality using digital tools

Summary of submission

The RFDS SA/NT developed and launched a bespoke pre-hospital EHR.

The EHR streamlines clinical information collection and analysis to support clinical decision-making. It features a live operational and clinical dashboard with inbuilt patient safety warnings, risk assessment tools, medication dosage calculators and treatment guidelines.

This means RFDS retrieval and road ambulance crews can use a mobile device to record a patient's vital health information during flight and securely share the data live with health care providers on the ground in multiple states and territories. This has improved central clinical oversight of remote crews, eliminated the need for verbal orders and text message communication, and has vastly improved communication.

The EHR allows multiple users to interact with the patient record in real time if they have network connection, regardless of geographical location. It also includes the ability to enter and retain data when there is no internet connection (which can occur in remote areas of Australia and in-flight), to automatically sync information to the record once internet connection has been re-established, and has created the ability to sync a prehospital digital patient care record to My Health Record at the end of the journey

The EHR has eliminated paper-based record keeping, reduces risks associated with manual handover and supports a single source of truth relating to the patient's episode of care. The EHR supports:

- timely access to reliable data on all patients transported by RFDS
- real-time alerts to reduce the risk of preventable harm
- greater capacity to audit and report on in-flight clinical data
- safer prescription and management of medication
- more time to focus on the needs of patients.

NSQHS Standards and exemplar practice

RFDS SA/NT has demonstrated practice that meets multiple actions within the NSQHS Standards post implementation of the EHR. Moving from a predominantly paper-based environment to a cloud-based digital solution, complete with enhancing existing clinical workflows, is commendable. See **Table 1**.

Table 1 NSQHS Standards actions that relate to implementation of a nationwide electronic -health record (EHR)

Standard	Action (s)	Strategy
Clinical Governance	1.02 1.08	The dashboard supports identification of patients at higher risk of harm, enables priorities to be set and workflow managed and monitored.

	1.11 1.16 1.17 1.27	Supports the availability of policies and the use of integrated evidence-based clinical guidelines and decision support tools. Can be used on or offline and stores data when the internet is not available. Supports allocation of safety and quality roles and responsibilities. Can be adapted to allow controlled access to sections for credentialed members of the workforce with additional scope of practice. Supports secure and integrated healthcare record management in a range of settings and time zones. Is conformant with multiple state and territory health records systems and enables access to My Health Record. Supports monitoring and evaluation of safety and quality systems, including risk, incident management and complaints management.
Partnering with Consumers	2.04 2.10	Designed in collaboration with consumers throughout the project life cycle and ongoing. Provides information on health care rights and supports process for seeking informed consent. Supports communication between clinicians, patients their families and substitute decision makers. Supports health literacy, includes a range of pictogram and decision support aids. Tailored to meet communications needs of patients.
Medication Management	4.04 4.05 4.07 4.13	Includes many features to enhance medication safety and reduce medicine errors including: • Conforming with national pharmacological best practice, including mandatory weight, Tall Man lettering, trailing zeroes and more • Integrated dose and rate calculators for estimated patient weight • Alerts, ADRs and known allergies • Supporting comprehensive medicine review • Supports solo remote clinicians with digital prescribing from an alternate location rather than verbal orders • Supports streamlined, coordinated prescribing, administration and documentation of medicines.
Comprehensive Care Planning	5.01 5.07 to 5.10 5.20 to 5.14	Supports collaboration and teamwork. Supports the identification of Aboriginal and Torres Strait Islander Peoples. Includes risk assessment tools for a comprehensive approach to emergency care (falls, infection control, mental health, delirium) Enables health information to be collected, updated and readily available supporting clinical assessment, goal setting and the delivery and evaluation of planned care.

Communicating for Safety	6.01 6.04 6.05 6.07 6.09 6.11	Includes approved adapted patient identifiers for the prehospital environment. Supports communication of critical information from the ground to clinicians in-flight en route to a patient with an evolving condition, and digital clinical handover at transitions of care.
Blood Management	7.5.1	Both written and photographic evidence of blood product identifiers Emergency and signature consent tools
Recognising and responding to deterioration	8.04 8.06	Includes early warning tools, graphical monitoring and colour coded identification of patients who are deteriorating. Connection between air and ground allows on-ground Medical Retrieval Coordinators to assist in early identification of deterioration and reach-in clinical advice and team support

For more information

Resources

- Organisational overview of EHR.
- EHR Clinical Workflow - Zero Point Survey.pdf - workflow outlining how clinicians integrate the elements of the EHR into the multiple phases of an aeromedical retrieval.
- Technical overview – Oracle OCI and Autonomous Database - article outlining the IT architecture supporting the online/offline operability.
- Video Link: https://youtu.be/iRKPG8RNiW4

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