AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

Electronic National Residential Medication Chart Medication Management Systems

Your guide to safe implementation in residential care facilities

September 2021

Published by the Australian Commission on Safety and Quality in Health Care
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ISBN: 978-1-922563-46-0

Acknowledgements

The Commission would like to acknowledge the many contributors who helped to develop the eNRMC medication management guidance documents. In particular, we would like to thank Closed-Loop and Associates for developing the founding versions, and all residential care staff, managers and software vendors involved in the eNMRC trial. Academics, clinicians and managers from other residential care organisations who contributed both time and insights are also gratefully acknowledged.

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Acronyms and abbreviations

Acronym	Meaning
ADHA	Australian Digital Health Agency
Ahpra	Australian Health Practitioner Regulation Agency
BCP	business continuity planning
EMM	electronic medication management
eNRMC	electronic National Residential Medication Chart
eNRMC system	electronic National Residential Medication Chart medication management system
GP	general practitioner
ICT	information and communication technology
INR	international normalised ratio
IPS	implementation planning study
IT	information technology
MAC	Medicines Advisory Committee
NRMC	National Residential Medication Chart
PBS	Pharmaceutical Benefits Scheme
PRN	pro re nata (Latin for 'as needed/when required')
QUM	quality use of medicines
RFT	request for tender
RPBS	Repatriation Pharmaceutical Benefits Scheme
UAT	user acceptance testing

1 Overview

This guide is for organisations looking to implement the electronic National Residential Medication Chart (eNRMC) medication management system. The guidance can be applied to all types of residential care facility settings, whether you are a single site or part of a larger provider network.

Australian residential care providers currently use different medication management systems. This guide will help you implement an eNRMC medication management system (eNRMC system). The amount of work this will require depends on the way in which your residential care facility currently manages medicines for consumers and the resources you have available to support your implementation.

This guide's focus is on residential care facilities that wish to transition from a paper-based or hybrid (electronic and paper) medication management system to an eNRMC system. The Australian Commission on Safety and Quality in Health Care (the Commission) acknowledges that you may be using a medication management workflow that is not described in this guide.

Although your organisation may already have an electronic medication management (EMM) system, not all EMM systems will have the technical or legislative features needed to support implementation of an eNRMC system. Please review the information provided (see Sections 2.2.2 and 2.2.3) and speak with your software vendor to confirm what options may be available to you.

Notes about this guidance

- This guide is based on information available at the time of writing. It reflects the information available in the Australian Digital Health Agency (ADHA) Electronic Prescribing Conformance Profile (version 3)[1] (April 2021).
- Some of the guidance may not reflect the current capabilities of eNRMC systems operating in Australian residential care facilities at the time of publication.
- You may be using a medication management system not described in this guide. You can still use this guide to transition to an eNRMC system.
- The Commission has based this guide on the experiences of residential care facilities that have already implemented an eNRMC system.

1.1 Structure of this guide

The guide comprises parts A–C, plus appendices, a glossary, a list of resources and a list of references. It also has an accompanying document – *Electronic National Residential Medication Chart Medication Management Systems: Software vendor information resource*.[2]

Part A: Foundations

Part A provides an overview of EMM in Australian residential care facilities, and what you need to consider when planning for an eNRMC system.

Everyone thinking about implementing an eNRMC system should read Part A first. Part A underpins Part B.

Part B: Implementing an eNRMC system in a residential care facility

Part B focuses on implementation at a single residential care facility and considers the experiences of Australian residential care sites that have already implemented these systems. Part B is relevant to residential care facilities that want to:

- Transition from a paper-based or hybrid system to an eNRMC system
- Enhance the medication safety and medication management workflows of their existing EMM system to an ADHA conformant eNRMC system.

Part C: Extra guidance for large or complex eNRMC system implementation

Part C builds upon the residential care facility implementation in Part B, and provides additional material for:

- Residential care providers that wish to use a formal procurement process to engage a software vendor
- Multi-site residential care providers seeking to roll out eNRMC systems across all their facilities
- Residential care facilities seeking to acquire a technology solution that covers a broader scope than electronic recording of the administration of medicines
- Residential care facilities with additional requirements such as systems integration or software development as part of their EMM solution.

If you are considering implementing a large or complex eNRMC system in multiple residential care facilities, you should read Parts A–C.

Appendices

The appendices are split into A–C to match parts A–C in the guide. These contain worksheets, templates and examples for your organisation to work through and update as you plan your eNRMC system implementation. You can also use them when you move to the implementation phase of your project.

Appendix D is a detailed case study of how an eNRMC system could be used to support quality use of medicines reporting.

Glossary

The glossary defines terms used in this document.

Resources

A list of resources and relevant links mentioned in this guide is provided.

References

A list of references used in this document is provided.

1.2 Supporting information

This guide was informed by:

- Experiences of implementing eNRMC systems in Australian residential care facilities as part of the Electronic National Residential Medication Chart Trial
- Consultation with clinicians, managers and academics working in residential care and medication safety, as well as peak bodies
- A literature scan[3]
- *Guiding Principles for Medication Management in Residential Aged Care Facilities*[4]
- Aged Care Quality and Safety Commission guidance and standards[5]
- *Electronic Medication Management Systems: A guide to safe implementation in Australian hospitals*.[6]

1.3 A note on electronic medication management systems versus the electronic National Residential Medication Chart system

EMM has previously been defined as[6]:

> The entire electronic medication management process from the prescriber's medication order, to the pharmacist's review of the medication order and supply of medicine, to the nurse's documentation of administration of the medicine, and all the processes in between.

EMM systems support all of these processes. While EMM system is a general term, eNRMC system is considered a subcategory for a specific purpose and can only be used in residential care facilities. A number of pieces of legislation support eNRMC systems (see Chapter 4). This legislation defines where these systems are implemented and the information requirements that must be incorporated into them for valid Pharmaceutical Benefits Scheme prescribing, dispensing and claiming.

Part A **Foundations**

Part A describes the medication management systems that are currently used in Australia, and what you will need to do to transition to an eNRMC system.

Part A describes:

- Consumer-centred medication management
- Which medication management models are currently used in Australia
- The benefits of implementing an eNRMC system in your residential care facility
- Safety and quality features of eNRMC systems
- Other electronic systems you will need to consider
- The roles and responsibilities of eNRMC system users
- Legislation, regulations, policy and compliance

2 Medication management in residential care

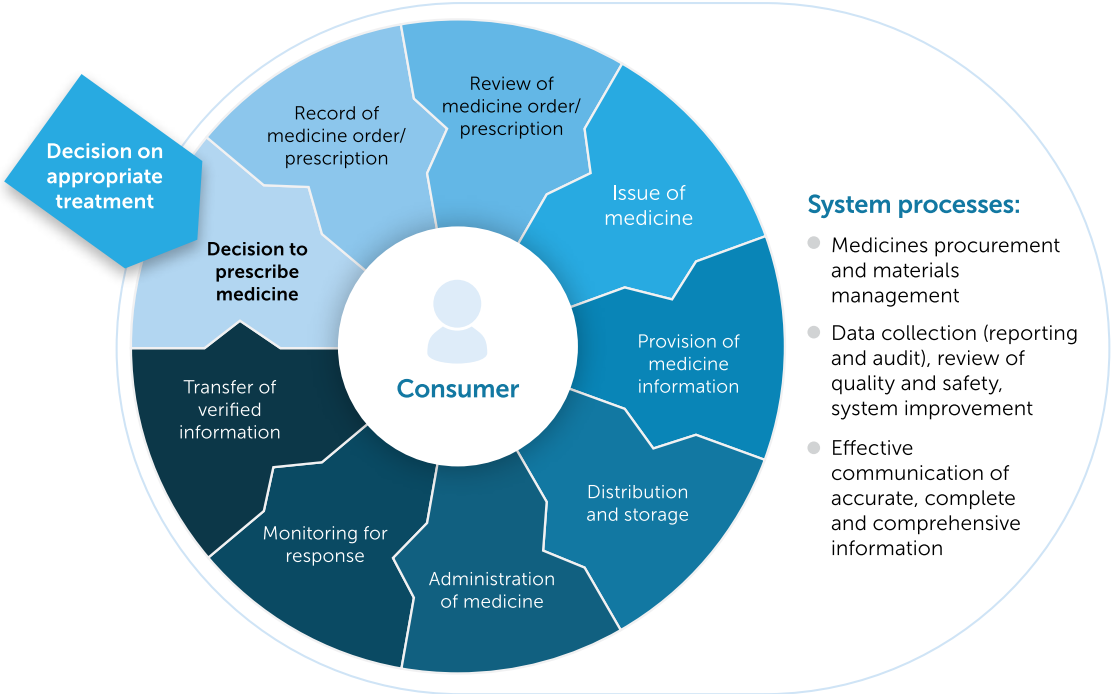
This chapter will help you understand the different medication management systems used in Australian residential care facilities, including the eNRMC system.

This section and the worksheets will help you to identify the medication management system you currently have, to begin planning for your eNRMC system implementation. It will be helpful to have a general understanding of other systems and standards, such as the My Health Record system, real-time prescription monitoring for monitored medicines and the *National Guidelines for On-Screen Display of Medicines Information*[7], before you start.

2.1 Consumer-centred medication management

Figure 1 outlines the key components and processes that make up the medication management pathway. The relationships between the components of the pathway and the consumer are integral. The consumer is the central focus. The medication management pathway starts with the decision to prescribe a medicine and ends at the point where information is transferred to inform the next therapeutic decision.

Figure 1: Medication management pathway



Note: This model describes the medication management pathway, with the consumer as the central focus.
Source: ACSQHC[8]

The medication management system used within facilities may vary, and can depend on a variety of factors, including a consumer's choices. Regardless of the system used, all medication management processes must be legal and should be founded on safety and quality principles to minimise risks and support best possible outcomes for consumers. Although this guide and the accompanying Software Vendor Information Resource[2] do not address consumers specifically, the medication management workflows that support eNRMC system implementation and functionality will.

During eNRMC system implementation and moving forward, your residential care facility should look for opportunities to involve consumers, and their carers and family members, in ongoing quality improvement, system governance and redesign programs. With guidance and input from consumers, opportunities exist for eNRMC system functionality to mature, adding features (such as consumer/family portals*) for improved transparency and meaningful ongoing engagement to support safe and appropriate use of medicines.

2.2 Medication management systems in Australia

Currently, Australian residential care facilities are using one of three different medication management systems – paper based, hybrid or completely electronic.

Figure 2 illustrates the paper and electronic capabilities among the different medication management systems. Sections 2.2.1–2.2.3 outline these systems further.

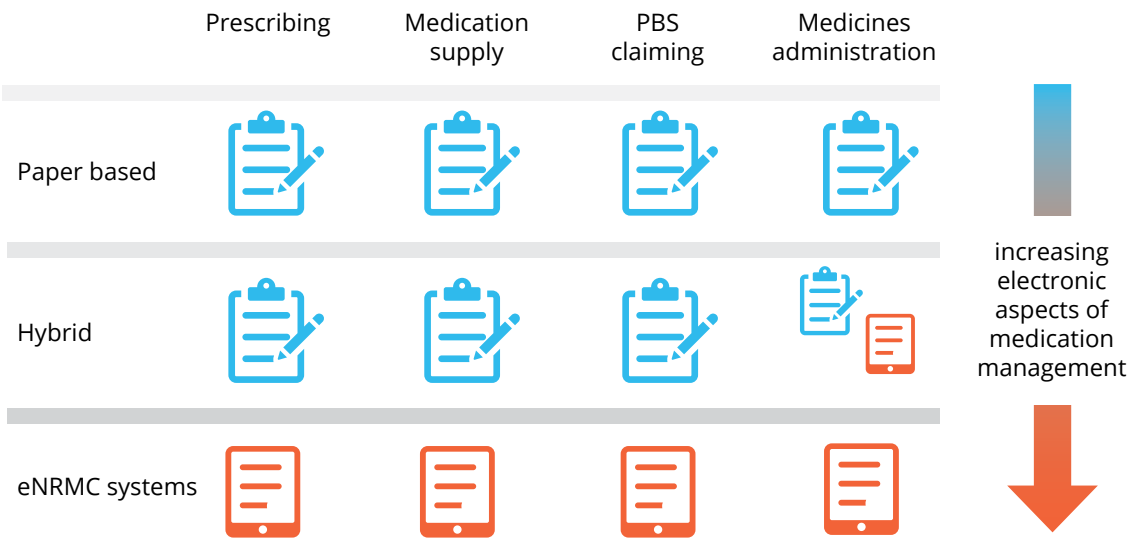
2.2.1 Paper-based systems

A paper-based medication management system is when your prescribing, supply and administration processes are all paper based, using either:

- The paper National Residential Medication Chart (NRMC), or a commercially available medication chart that meets NRMC requirements
- Another paper-based medication chart, which must be supported by separate prescriptions for prescribing, supplying and Pharmaceutical Benefits Scheme (PBS)/Repatriation Pharmaceutical Benefits Scheme (RPBS) claiming purposes.

* For example, see My RCH Portal.

Figure 2: Medication management systems in use in Australian residential care facilities



PBS = Pharmaceutical Benefits Scheme

2.2.2 Hybrid systems

A hybrid medication management system uses a combination of paper and electronic prescriptions and administration charts. This often involves the following:

- Handwritten medicine orders are prescribed on the residential care facility's paper chart; if this medication chart is not the paper NRMC, medicines ordered need a separate prescription to be written by the prescriber for dispensing and PBS/RPBS claiming at the pharmacy
- PBS and non-PBS prescriptions may be computer generated from prescribing software systems, printed and hand signed (where this complies with state and territory law), or may be electronically generated by the prescriber through their prescribing software systems and made available for dispensing through the prescription exchange service, as electronic prescribing in the community becomes more widely available
- Records of administration (signing sheets) are compiled by the consumer's pharmacy, to allow nurses to document (electronically or by hand, depending on the system available) the medicines that have been administered to the consumer; the records of administration compiled by the pharmacy will include instructions for medication administration, handling and storage.

Hybrid systems are **not** Australian Digital Health Agency (ADHA) conformant prescribing systems. This means they are not eligible to electronically prescribe or dispense any prescription medicines, nor claim PBS entitlements.

2.2.3 Electronic National Residential Medication Chart medication management systems

An eNRMC system is completely electronic. It supports:

- Electronic prescribing as a form of prescription for supply of PBS/RPBS and non-PBS medicines, and for ordering, for the purpose of administering medicines to consumers living in residential care facilities
- Review of the consumer's eNRMC by the consumer's pharmacy of choice for supply of medicines
- Review of the consumer's eNRMC by the prescriber to ensure the appropriateness and ongoing supply of the medicines; review should be every six months as a minimum to ensure that PBS supply is maintained, or earlier if clinically indicated or required by state and territory law
- Recording administration of medicines.

What are the requirements for an EMM system to be considered specifically an eNRMC system?

In 2019, the PBS regulations changed, to support the use of electronic prescriptions for supply of PBS medicines for consumers living in residential care facilities.[9] All eNRMC systems used in residential care facilities to support electronic prescribing, dispensing and claiming of eligible PBS medicines should conform with the technical specifications defined in the Electronic Prescribing Conformance Profile.[1] These were developed by the ADHA, and align with the 2019 PBS regulations.[9] (See the Software Vendor Information Resource[2] for more information on the specific legislation underpinning eNRMC systems.)

Your software vendor should be able to tell you when they expect to have ADHA conformant eNRMC systems available.

Interoperability with prescriber clinical information systems

The eNRMC systems developed to date include the ability to electronically prescribe and record the administration of medicines. At the moment, these systems are not interoperable, and do not 'talk to' or support the secure, bi-directional 'backward and forward' transfer of information with prescribers' clinical information systems.

Prescribers (particularly those who do not have many consumers in any one residential care facility) have highlighted this as a limitation of the current systems. This is because of the additional work required for double data entry to ensure that their clinical information system is contemporaneous with the eNRMC system used by the residential care facility. Although the disconnection between the two systems limits the benefits of the eNRMC system for these prescribers, the medication safety risks around siloed and potentially inconsistent information should also be considered.

Work through worksheet A.WS1 to identify the current state of your medication management system and any questions you wish to ask your software vendor about their timeline for development of an eNRMC system for your residential care facility.

2.3 Potential benefits of eNRMC systems in residential care facilities

An eNRMC system could offer many benefits compared with paper-based systems and hybrid systems, such as:

- Improvements to medication safety
- Better communication about a consumer's medicines and known allergies between clinicians caring for the consumer while in the residential care facility and during transitions of care (for example, at admission into hospital)
- More efficient workflows, meaning that staff can refocus their time on other duties
- Staff not having to regularly print paper charts for prescribing, administration and supply of medicines.

More specific benefits for members of the workforce are outlined in Box 1.

Box 1: Potential advantages of eNRMC systems for different groups

For residential care facility providers:

- There is greater visibility, standardisation, adherence to prescribing and administration of medicines in line with best practice, regulation and policies.
- There is transparency and accountability for the prescribing and administration processes, with no intermediate manual steps or workarounds.
- Governance is improved, because automated medicines data can facilitate monitoring, reporting, auditing and medicines optimisation.
- It is easier to access and compile medicines-related information for National Aged Care Mandatory Quality Indicator Program or accreditation purposes.

continues

- Medicine orders are clearer and can be easily read by staff because they are computer generated, not handwritten.
- Staff do not need to scan and send consumers' medication charts to the pharmacy each time a medicine is to be dispensed or a medicine order is changed.

For prescribers

- Prescribers no longer need to routinely produce paper-based prescriptions and write on paper-based charts, saving time.
- Prescribers can review the appropriateness of medicines on the eNRMC remotely and reissue them for a period of six months (the eNRMC validity period is six months) or earlier, if clinically indicated.
- Prescribers can receive real-time alerts from the residential care facility and/or the servicing pharmacy regarding a consumer's medicines or any outstanding actions.
- Prescribers can take stronger ownership and have greater visibility of the eNRMC, and can remotely observe how their patient is responding to treatment.
- Medication safety and quality use of medicines are improved where clinical decision support capabilities are available.
- Prescribers can more easily prescribe medicines and review medication management remotely, supported by telehealth consultations (as shown by the response to the COVID-19 pandemic).
- Prescribers are supported to complete all of the information requirements to issue a legal prescription.
- Because of remote access, prescribers have a reduced need for placing telephone orders.

For pharmacies

- Pharmacies do not need to print medicines lists (signing sheets) for administration, and no longer need to produce a new paper-based chart every four months to support administration documentation.
- Pharmacies can dispense medicines faster because the prescription comes from the eNRMC system to the prescription exchange service, before being retrieved for use by their dispensing system.
- The need to follow up with prescribers for amendments to a paper-based chart or prescription due to transcription errors is reduced.
- The need to issue an emergency supply of a medicine is removed as the prescriber has access to the eNRMC system and can issue a prescription remotely.

continues

For nurses

- Nurses no longer document the administration of a medicine on a paper chart or signing sheet. Any missed doses are highlighted in the eNRMC system, and reasons for missed doses are electronically recorded, to support handover.
- They eliminate confusion related to two paper-based charts operating in parallel at the end of the charting period.
- They support the six 'rights' of medication administration: right consumer, right medicine, right time, right dose, right route, right documentation.
- They are timesaving because there is no need to scan or fax paper charts to a consumer's pharmacy (for example) or find missing charts.
- Removal of paper charts may remove a potential infection source and support socially distanced workflows and protocols.
- There is less time spent on administrative tasks and more time spent focusing on consumers' physical and emotional needs.

For consumers

- There is the potential for improved medication safety, because medicine orders are transferred electronically.
- Any changes to prescriptions are sent to the consumer's servicing pharmacy instantly once prescribed, which may enable the pharmacy to dispense and deliver the medicine to the residential care facility sooner, reducing the chance of the consumer missing any of their scheduled doses.
- A consumer's medication history is all kept together within one system; therefore, recall and review of medicines are streamlined.
- They may facilitate discussion about medicines and support shared decision making (for example, consumer consent for an off-label indication or use of a medicine).

2.4 Safety and quality features of a goal-state eNRMC system

'Goal-state' identifies the main safety and quality elements that should make up your eNRMC system, irrespective of the setting in which it is used. The goal-state for your facility's eNRMC system will incorporate the workflow models your facility already uses. By definition, eNRMC systems are ADHA conformant and are compliant with relevant Commonwealth legislation for electronic prescribing and supply of medicines. State and territory legislation must be applied, as relevant to the location of your residential care facility.

A goal-state eNRMC system in a residential care facility should aim to include:

- The safety features inherent within the paper NRMC – for example, photo identification of the consumer
- Clinical decision support for all clinicians
- Review of medicine orders on the eNRMC to support ongoing supply and support appropriate use
- Support for the pharmacist to apply electronic instructions for the safe administration, handling and storage of medicines
- Electronic records of administration, including access to clinical monitoring information – for example, blood glucose levels before administering insulin
- A reporting capability, supporting medication safety audits and quality use of medicines activities
- Ability to audit all information recorded or changed within the system.

Some elements of your facility's goal-state eNRMC system may not reflect the capabilities of software solutions currently available in the Australian market. However, this provides opportunities for residential care facilities and software vendors to collaborate in delivering enhanced medication safety and improved workflows within these systems.

2.4.1 My Health Record system

The My Health Record system is a consumer-controlled e-health record developed by the Australian Government. Residential care facilities may find value in accessing a consumer's My Health Record, particularly at transitions of care, as information about a consumer's medicines can be viewed and reviewed in a timely way to support ongoing care. It may also be of value for consumers entering your facility for respite care, because access to paper-based discharge letters can often be delayed between care settings.

In future transitions of care, an eNRMC system user may be able to access medicines-related information provided by the My Health Record system through your eNRMC system directly, offering streamlined medication review and reconciliation. You may wish to consider this as you plan the features of your goal-state system.

The My Health Record system presents clinical documents created by general practices, public and private hospitals, private specialists, allied health providers and consumers, which can be used to support continuity of care.

It also provides information about Australian Government–funded programs that a consumer has accessed in the past, such as PBS medicines claimed or immunisations received and held on the Australian Immunisation Register and the Australian Organ Donor Register.

Clinical documents held in the My Health Record system include structured and coded medicines-related information, including:

- Shared health summaries
- Event summaries
- Discharge summaries
- Specialist letters
- Referrals
- Prescription records
- Dispensing records
- Allergies and adverse drug reactions, and other medicines-related information directly entered by the consumer or their authorised representative.

It should be noted that, although a My Health Record is available to all Australians, not all consumers consent to and use this platform.

2.4.2 On-screen display of medicines information

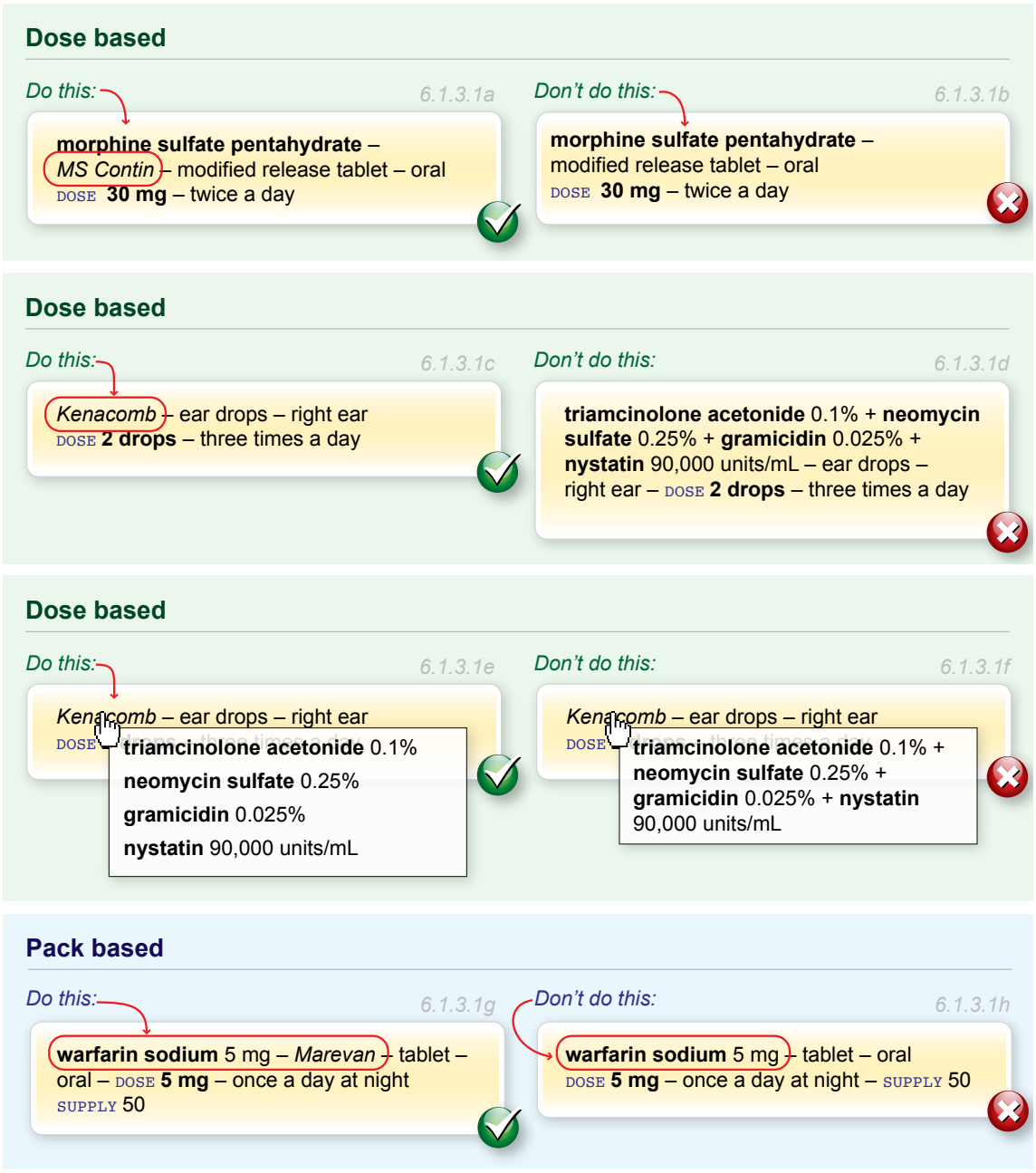
The Australian Commission on Safety and Quality of Health Care (the Commission) has published *National Guidelines for On-Screen Display of Medicines Information*[7], which includes design recommendations on how to display:

- Names of medicines
- Text (including truncating text and wrapping lines of text), abbreviations and symbols
- Numbers and units of measure
- Medicines-related information, including where items are placed, and their visual weighting, font, separators and labels.

> Residential care facilities should encourage software vendors to ensure that their medication management system displays medicine orders in line with national on-screen display guidelines.

Examples of how a medicine order should be displayed on-screen are shown in Figure 3.

Figure 3: On-screen display format for medicine orders



Source: ACSQHC[7]

2.4.3 Support for eNRMC system users

For safety and quality in medication management, your eNRMC system will need to support all clinicians (prescribers and non-prescribers) who use it. Some of the ways in which the system could be expected to support eNRMC system users are outlined below.

Electronic support for clinicians: prescribers

Prescribers authorised to access your eNRMC system may include:

- Medical practitioners
- Nurse practitioners
- Optometrists
- Dentists.

Goal-state electronic support for such prescribers will include:

- Access to the residential care facility's eNRMC system – either while at the residential care facility or remotely through a secure virtual private network (VPN) connection
- Viewing and recording of clinical monitoring information for relevant medicines
- Clinical decision support tools when prescribing any medicines – in particular, for minimising risks of adverse drug reactions, and supporting safe and appropriate prescribing of psychotropics, antimicrobials and other high-risk medicines
- Regular review and issue of medicine orders, alerts and prompts when a medicine order is set to expire
- A way to review the eNRMC, for the consumer's complete medication history, including medicines ordered and/or administered previously
- A way to document over-the-counter and complementary medicines on the eNRMC to support a comprehensive medicines list
- Documented communication between the residential care facility nursing staff, general practitioner and pharmacist about a consumer's medicines
- Any other documentation needed by your residential care facility medicines-related policies
- Support for transitions of care through the My Health Record system or other standalone system.

> Implementation of clinical decision support tools must be balanced against risks of alert fatigue for all eNRMC system users.[3]

Case study 1 shows how a fictional residential care facility supported all of its prescribers to implement an eNRMC medication management system.

Case study 1: Supporting all of your prescribers

Green Acres residential care facility has several types of prescribers, including regular authorised prescribers, and temporary or visiting prescribers such as locums and after-hours general practitioners. Green Acres wanted to ensure that all of these prescribers could use the eNRMC system, so that some prescribers were not using separate and temporary paper medication charts. Although this was challenging, Green Acres explored how to ensure that its future eNRMC system makes it as easy as possible for infrequent or visiting prescribers.

Green Acres decided that the best solution for them was to have an authorised eNRMC system user, such as the nurse in charge, to allow temporary prescribers on-demand access to the system. This process includes the full credentials of the prescriber, and the prescriber has full – but time-limited – access to the eNRMC system. This solution works well for Green Acres, because all medication management is still electronic and fully auditable. It is also easier for Green Acres to ensure that all prescribing is fully compliant with state and territory legislation, PBS regulations and electronic prescribing technical conformance.

Support for clinicians: non-prescribers

Your eNRMC system will also need to support members of your residential care workforce who do not prescribe.

Box 2 outlines the electronic support you could offer specific non-prescriber groups, which could promote better adoption and acceptance of your system by other system users.

Box 2: Support for non-prescribers

For servicing pharmacies, a way to:

- Access the residential care facility eNRMC system directly
- Support maintenance of 'stock' (imprest) medicines within the residential care facility
- Review new or changed medicine orders
- Add administration, handling or storage instructions to medicine orders
- Document communication with prescribers or nurses about a consumer's medicines.

continues

For pharmacists undertaking quality use of medicines activities or residential medication management reviews, a way to:

- Review an individual consumer's eNRMC
- Access reporting functionality for medication management in the system
- Document communication with the servicing pharmacy, prescribers or nurses about a consumer's medicines.

For nurses, a way to:

- Curate and maintain a consumer's eNRMC, including consent for medicines use as documented by the prescriber, based on best practice and local policy
- Easily see all the consumer's prescribed medicines (for administration) on a screen
- Document nurse-initiated medicines
- View each medicine to be administered, with all the information required to support safe administration clearly displayed
- Record the administration of each medicine, including the reason for administration for 'when required' (PRN) and nurse-initiated medicines
- Record when a medicine is not administered and the reason why it was not given
- View and record clinical monitoring information to support safe administration of medicines
- Countersign for controlled medicines or complex, variable-dose medicines
- Document telephone orders in line with state or territory legislation
- Document communication with prescribers or the servicing pharmacy about a consumer's medicines
- Review the completion of medication administration rounds, including any doses that have been omitted
- Support medication safety audits, quality use of medicines and continuous quality improvement activities.

If you are looking to transition from a paper-based system, or upgrade your existing EMM system to include electronic prescribing using an eNRMC system, worksheet A.WS2 can help you decide what your goal-state design may look like.

2.5 Other considerations for safety and quality in your eNRMC system

2.5.1 Medication reconciliation

To support medication safety and safe transitions of care, medication reconciliation offers a systematic approach to identifying medicine discrepancies at transitions of care, when it can be more common for information about the medicines a consumer is taking to be unintentionally omitted or miscommunicated.

Medication reconciliation ensures that there is clarity about all of the medicines that a consumer is taking, and provides an opportunity to identify any medication management issues and outline a plan to address these. The foundation of the medication reconciliation process is to document a Best Possible Medication History.

Discuss with your software vendor whether there are design opportunities to allow documentation of a Best Possible Medication History and medication reconciliation within your eNRMC system. When used routinely on admission, medication reconciliation can support more timely detection of medicines discrepancies and prompt earlier medicine review, which may reduce avoidable consumer harm or hospital admission.

2.5.2 Transitions of care

Transitions of care are periods of high risk, when medicines-related problems can be potentiated as a result of poor communication (clinical handover). This can lead to unfavourable or unintended outcomes for consumers.

Residential care facilities sending consumers to hospital have the opportunity to use their eNRMC systems to improve the quality and consistency of documented medicines information being provided to the next care provider at these transitions. Similarly, hospitals discharging patients back to residential care facilities need to consider that the patient is going 'home', not to another health facility, and provide clear, complete and accurate information for their ongoing care. Paper-based interim medication charts have been used routinely in some states and territories to mitigate risks associated with transitions of care from the hospital to residential care facilities. However, at the time of writing, an electronic approach (for example, electronic interim medication chart) is unavailable in eNRMC systems. Recent details[10] have been released to assist residential care facilities connect with their consumer's My Health Record, this approach may improve the timeliness and accuracy of information shared across healthcare settings and reduce preventable medication harm.

Residential care facilities will need to consider their processes and policies that support transitions of care in the interim, as well as engage software vendors in discussions about potential eNRMC system functionality to support improved communication of medicines-related information at transitions of care in the future.

2.5.3 Supporting consumers' choices and respite care

All consumers, regardless of the residential care facility in which a consumer lives, must maintain the right to choose their general practitioner (GP) and servicing pharmacy for supply of their medicines. This right is required by law. Although residential care facilities provide equitable access to medicines in line with the National Medicines Policy, consumer choice or preference is not always facilitated. Residential care facilities should be aware that consumer-preferred pharmacies may not be using the same dose administration aid system as that routinely used in the facility, and have procedures in place to ensure the safety and quality of different aids or systems for administering medicines in these instances.

Your eNRMC system can accommodate the rights of consumers to choose their pharmacy and GP. For medication safety purposes, respite consumers should also have an eNRMC within your eNRMC system.

Case study 2 shows how a fictional residential care facility considered consumers' right to choose.

Case study 2: Supporting your consumers' right to choose

Green Acres Aged Care has some consumers who wished to use their own pharmacy, in preference to the pharmacy that services the facility under contract. Green Acres eNRMC software vendor has offered to train these pharmacies so they can access these consumers' eNRMC. Green Acres did this to streamline medication management for their staff, as well as to use the safety and quality features that are available in the eNRMC system for the benefit of both consumers and staff.

Green Acres used this approach so all consumers are treated the same.

You can identify how your residential care facility will support consumer choice and respite care by completing worksheet A.WS3. All residential care facilities will need to consider the items in this worksheet.

When considering your goal-state, remember that making too many components 'mandatory' could limit your choice of system, because some components may not yet be available in Australia.

3 Roles and responsibilities of eNRMC system users

This chapter will help you understand and highlight the roles and responsibilities of all eNRMC system users, including the residential care facility provider.

Regulation places responsibilities on all eNRMC system users, including obligations of privacy and record keeping, that will need to be considered when choosing your eNRMC system.

All residential care facilities implementing an eNRMC system will need to create eNRMC system user policies that align with regulatory responsibilities and outline the training required.

> An eNRMC system user is a workforce member who will need to know how to use the new eNRMC system and the workflows that support its safe use.

3.1 Residential care facility provider responsibilities

The executive of the residential care facility with oversight of operations and procurement must ensure that:

- The eNRMC system implemented meets the Pharmaceutical Benefits Scheme (PBS)/Repatriation Pharmaceutical Benefits Scheme (RPBS) regulations; state and territory legislative requirements for electronic prescribing, supply and administration; and the technical conformance requirements for electronic prescribing (see Chapter 4)
- Your eNRMC system is managed and used in line with the Australian Privacy Principles[11]
- Only authorised personnel have access to your eNRMC system, which is aligned to the user's legal permissions under state and territory medicines and poisons legislation (for example, only a registered medical practitioner, nurse practitioner or other prescriber may be issued with access permissions to generate medicine orders)
- Training is available and personnel are trained before using the system, and that the need for refresher training is continually reviewed
- There is appropriate governance in place to ensure that your eNRMC system is managed effectively to support medication safety and quality use of medicines on an ongoing basis; this is often the role of the Medicines Advisory Committee at the residential care facility (see Section 7.4)
- Policies are in place, and are maintained in line with any changes to jurisdictional regulations or established best practice (see Section 4.2).

3.2 Prescriber responsibilities

Prescribers must:

- Be legally authorised to prescribe medicines in line with the poisons legislation of the state or territory in which they practise (see Resources)
- Be registered with the Australian Health Practitioner Regulation Agency (Ahpra)
- Practise in line with relevant professional practice standards and scope of practice
- Be authorised to prescribe PBS/RPBS medicines and non-PBS medicines
- Provide electronic prescriptions as required by the eNRMC system use policy operating in each residential care facility
- Undertake a medication review for ongoing supply of medicines and when clinically indicated
- Have been trained in using the eNRMC system in line with the use policies of the residential care facility
- Maintain security over their user access credentials.

3.3 Servicing pharmacy responsibilities

Pharmacists must:

- Be legally authorised to dispense medicines in line with the poisons legislation of the state or territory in which they practise
- Be registered with Ahpra
- Practise in line with the relevant professional practice standards
- Have been trained in using the eNRMC system in line with the use policies of the residential care facility
- Maintain security over their user access credentials.

3.4 Quality use of medicines and accredited pharmacist responsibilities

Quality use of medicines and accredited pharmacists must:

- Be registered with Ahpra
- Practise in line with the relevant professional practice standards
- Have been trained in using and accessing the eNRMC system in line with the use policies of the residential care facility
- Maintain security over their user access credentials.

3.5 Nurse responsibilities

Nurses must:

- Be legally authorised to administer medicines in line with the poisons legislation of the state or territory in which they practise
- Practise in line with the relevant professional practice standards
- Oversee care workers who support consumers to self-administer their own medicines and document administration within the eNRMC system (see also the eNRMC Software Vendor Information Resource, Section 5.2.1)
- Have been trained in using the eNRMC system in line with the use policies of the residential care facility
- Maintain security over their user access credentials.

Residential care facilities will need to consider how to provide information to other health professionals who may require specific pieces of information from the system, but do not require access to it. For example, physiotherapists undertaking a post-fall review will not require access to the system but are likely to require the consumer's medicines list to undertake their review tasks. These considerations should be outlined in the residential care facility's use policy for your eNRMC system.

3.6 Responsibilities of software vendors

Software vendors must:

- Ensure that their eNRMC systems are safe, are fit for purpose, and adequately support best-practice guidance around medication safety and quality use of medicines
- Ensure that their systems are maintained and work in line with Commonwealth, state and territory legislation; the Australian Register of Therapeutic Goods; and PBS releases
- Ensure that their eNRMC system functions in line with Australian requirements – for example
  - the Aged Care Quality Standards
  - the national medicines priorities, and the safety and quality agenda of the residential care sector
  - changes to technical data standards or de facto standards
- Optimise the medication safety capabilities of the eNRMC system
- Respond to any requests from the residential care facility for system improvements
- Be involved in system investigations conducted by the residential care facility where there is suspicion that the eNRMC system architecture or configuration may have contributed to consumer harm.

> Identify your eNRMC system user roles and responsibilities by working through worksheet A.WS4. You should consider these after you have determined your goal-state.

4 Legislation, regulation, policy and compliance

This chapter explains the legislation, regulation and policies surrounding eNRMC systems in residential care facilities. It also addresses compliance issues.

4.1 Legislative and regulatory requirements

> All eNRMC systems in residential care facilities must comply with the legislative requirements of the state or territory in which the residential care facility operates, including medicines and poisons legislation and privacy legislation.
>
> Similarly, for pharmacies to claim Pharmaceutical Benefits Scheme (PBS)/Repatriation Pharmaceutical Benefits Scheme (RPBS) entitlements, your eNRMC system must comply with national PBS regulations, and state or territory electronic prescribing legislation.

All users of your eNRMC system need to understand their obligation to keep their access credentials confidential and secure. In addition, residential care facilities need to make sure that each user's access is limited to functions that align with their role, as defined by legislation in the state or territory in which the residential care facility operates. Only roles designated in legislation can prescribe, supply and administer medicines. Any changes made to medicine orders must be visible, auditable and attributable to the prescriber who made them.

You will need to ensure that your eNRMC system presents medicine orders in a way that ensures that all users are confident that the order is current and valid. For example, the system should support telephone orders and co-signatures, as defined by the legislation in the state or territory in which your residential care facility operates.

When medicines information is being exchanged, your eNRMC system must ensure that each data element that makes a valid electronic prescription is exchanged with other systems in a way that prevents accidental or intentional changes to that electronic prescription. To achieve this, systems need to exchange information entirely electronically, with no transcription of information.

All eNRMC systems must meet the mandatory prescribing data elements defined by the legislation in the state or territory in which the residential care facility operates.

Your eNRMC system must ensure that prescriptions for controlled medicines are valid for supply by the servicing pharmacy only during the validity period defined by the legislation in the state or territory in which the residential care facility operates. If these medicines are to be continued, and further supply is required, the medicine order should be reissued, and the date and time of the reissue recorded.

Records of current and recently ceased medicines should be available during system downtime, to uphold medication safety. To support periods of planned and unplanned system downtime, business continuity plans should be documented, rehearsed, reviewed and updated regularly (see Chapter 9).

All electronic prescribing, supply and administration records must be retained for a period defined by the legislation in the state or territory in which the residential care facility operates, and be available in a timely manner to an inspector appointed under the legislation.

The system must display sufficient consumer identification details to ensure that clinicians can verify the identity of the consumer for each prescribing, supply and administration activity, including:

- Consumer demographic details – surname, forename(s), age, date of birth and gender – displayed prominently and consistently on **all** screens associated with prescribing, supply and administration of medicines
- A high-quality photographic image of the consumer on **all** screens associated with prescribing, supply and administration of medicines; the system user should be able to enlarge the image to ensure that the user can determine the visual differences between consumers when medicines are being prescribed or administered.

Your eNRMC system should display an alert when the user is prescribing and administering medicines for consumers who have similar-sounding names.

Printed paper-based medication charts generated by your eNRMC system should only be used in certain circumstances (see Section 9.2).

4.2 Facility provider policies and procedures

Your facility will need to have policies and procedures in place, supported by quick reference guides, to ensure safe use of your eNRMC system. These documents should accurately reflect the context in which the system is used, how it is used, how it is managed, and how any risks identified in the system are reported and addressed. It should consider:

- The legislation of the state or territory in which the residential care facility operates
- Australian Government legislation in relation to the PBS and regulations specific to aged care
- The existence and use of other systems in place at the residential care facility, such as clinical documentation systems

- The arrangements and obligations of eNRMC system governance through the Medicines Advisory Committee (MAC) or equivalent (see Box 3)
- How the system should be used in the medication management workflow
- The roles and responsibilities of those prescribing, supplying and administering medicines who use the system, including the responsibilities of visiting prescribers and agency personnel (see Section 3.1)
- How to deal with printed, paper-based charts generated by your eNRMC system during events affecting business continuity
- How to document over-the-counter and complementary medicines on your eNRMC to ensure that there is a comprehensive medicines list
- How data from the system should be reported, prioritised and used to improve medication safety and system optimisation
- Cleaning protocols for hardware used to deliver your eNRMC system
- System training and competency assessment registers for active users
- How requests for changes to your eNRMC system should be managed.

It is especially important that policies are in place for visiting prescribers, because they may have to use different systems, including different electronic prescribing systems, at other residential care facilities. It is imperative that system policies and quick reference guides are in place to support clinicians to use your eNRMC system as intended.

Maintaining accurate records of a consumer's medicines on your eNRMC

To ensure that a consumer's eNRMC is comprehensive and accurate, it should include any over-the-counter medicines and complementary medicines that the consumer is taking in addition to PBS and non-PBS items supplied by the pharmacy on prescription. Local policy should support how this information is obtained from the consumer, family or carer, and then how these medicines are included on the consumer's eNRMC for administration within the residential care facility. This will help to support the safe use of all consumers' medicines.

The benefits of developing eNRMC policies (with the support of your MAC) include that they:

- Clarify the roles and responsibilities of all users of the system
- Encourage a consistent approach to using the system
- Establish a clear baseline for assessing compliance
- Promote confidence in users of the system
- Reinforce best practice and the importance of training
- Remind infrequent users about the intended use of the eNRMC system
- Improve medication safety and quality.

Box 3: Examples of eNRMC system agenda items for MAC, or equivalent, meetings

- Post-implementation review of eNRMC systems
- Continuous quality improvement reports and actions
- Medicines use reports
- User policy for your eNRMC system
- Downtime and uptime procedures
- Optimisations and testing of your eNRMC system
- Upgrades, and associated training and user resources for your eNRMC system
- Maintenance and use of IT devices

Residential care facilities should regularly audit their eNRMC systems to ensure that the system is being used in line with policies, as part of a program of continuous quality improvement (see Chapter 8).

Ensure that your residential care facility complies with regulations and policies by working through worksheets A.WS5, A.WS6, A.WS7 and A.WS8.

You have reached the end of the 'Foundations' (Part A) section of this guide. Through this process, there may still be knowledge gaps that you have not yet uncovered. Work through worksheet A.WS9 to understand where these knowledge gaps might be.

Part B Implementing an eNRMC system in a residential care facility

Part B of this guide consists of the core implementation activities for a single site. Part B is also the core building block to use when implementing eNRMC systems in multiple sites.

If you have not yet read Part A, do so before continuing to Part B.

Part B describes:

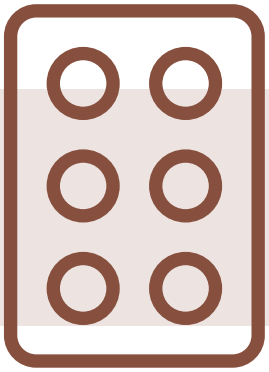
- How to get started with your implementation
- The implementation approaches available
- How to learn from others and implement solutions based on these learnings
- The implementation activities – from planning to go-live
- How to manage the everyday functions of your system
- How to optimise your system through continuous quality improvement
- How to manage system downtime

If you wish to do something different, or additional, with your system ...

For example:

- Use a structured approach to your system acquisition and implementation
- Include additional requirements such as systems integration or software development as part of the solution
- Establish greater ownership of the resulting eNRMC medication management solution

... you should also review Part C of this guide.



5 Getting started with your eNRMC system implementation

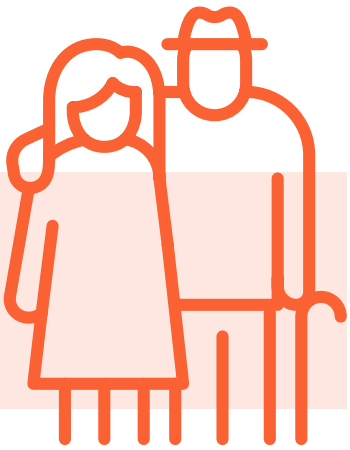
This chapter is for all single residential care facilities and larger multi-site providers that want to get started on their eNRMC system journey.

This chapter will increase your knowledge of eNRMC systems so that you will be better prepared to make the implementation decisions that will need to be made. It explains the different eNRMC system implementation approaches, to help you decide which may be best for your facility.

Some residential care facility providers may also wish to consider:

- Making a business case for a system
- Procuring a system
- Managing a contract.

These elements may be relevant to large, multi-site providers and single residential care facilities, particularly if you are looking to take stronger ownership of your system.



5.1 Justifying an eNRMC system for your residential care facility

The first thing you should do is take time to clearly outline the reasons you are considering using this type of medication management system, to help shape your implementation process. Potential advantages of an eNRMC system are explained in Section 2.3.

You should not consider implementing an eNRMC system because 'everyone is doing it'. Implementing an eNRMC system needs a great deal of attention and resources from management. Your residential care facility needs to be fully committed to an eNRMC system to reap the benefits it can bring.

If you are thinking about implementing an eNRMC system, you will need to find someone with the skills and interest to undertake the groundwork that will inform implementation planning.

> Worksheets B.WS1, B.WS2 and B.WS3 identify activities that will help you with this groundwork to better understand your eNRMC system medication management options.

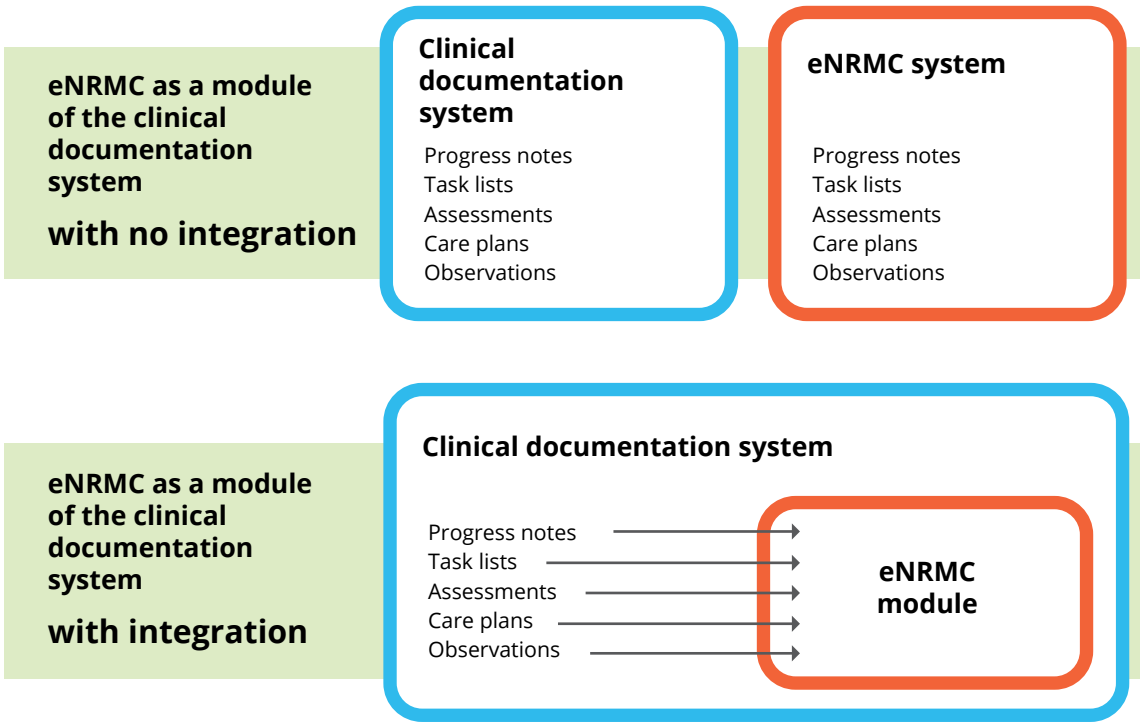
5.2 Choosing an eNRMC system implementation approach

Deciding which implementation approach to adopt is a critical decision for your organisation. This is due to the potential significance and effect on the organisation's current operation and future business strategy.

As a minimum, the board, chief executive and executive team should be involved in determining which implementation approach to adopt.

Figure 4 shows some different technological options for integrating an eNRMC system into the rest of your clinical documentation system, or for having them work alongside each other.

Figure 4: Implementation options for an eNRMC system



Worksheet B.WS4 highlights the strategic options you should think about before choosing an implementation approach. Some of these are complex questions for residential care facilities to consider, which are beyond the scope of this guide. However, once you have determined the preferred implementation approach, you can begin planning your eNRMC system implementation.

5.3 Learning from Australian residential care facilities

To avoid the pitfalls of implementation, you should review lessons learned by other facilities.

5.3.1 Getting started activities

Implementation of the eNRMC system in most residential care facilities is led by either the software vendor or the servicing pharmacy. Often, residential care facilities are passive recipients.

It is better if you take an active role in managing your own investment in an eNRMC system. You should lead your system implementation, and work collaboratively with your software vendor, prescribers and servicing pharmacies to:

- Maximise medication safety
- Ensure an efficient and streamlined workflow
- Minimise – and preferably eliminate – workarounds.

Sites that have already implemented eNRMC systems have advised that you should ensure that:

- Prescribers, pharmacists and the residential care facility staff are engaged well in advance of the implementation and understand how it may benefit them or require them to change their practices
- Consumers and their families and carers are made aware of the changes, and know about the consumer's right to choose and how an eNRMC system may improve medication safety
- You understand your workforce's comfort levels and competency with IT and new technologies, and consider factoring these into communication, education and training plans
- The implementation activities are well coordinated, including with the software vendor, the servicing pharmacies, prescribers and the local technology providers using a well-described implementation plan and communication strategy
- Prescribers (such as general practitioners [GPs]) are issued with user access credentials before go-live (and any new prescribers are added after go-live)
- System users are well supported and know who they can contact if they have a problem during go-live.

5.3.2 General practitioner engagement and participation

You might find engaging with GPs to be the biggest challenge when you implement your eNRMC system in your residential care facility.

Residential care facilities that have implemented electronic prescribing have used the following strategies to encourage GPs to participate:

- An initial introductory letter to practices outlining the residential care facility's eNRMC system intentions, followed by lunchtime and evening presentations and system demonstrations at GP practices, or remotely via teleconferencing platforms or view-on-demand video
- Go-live support, including providing GP checklists, pocket guides or shortcuts for completing key prescribing functions, and using peer-to-peer champions to help communicate these benefits to other GPs in the same practice
- Flexible training options, including
  - out-of-hours training
  - training at the GP practice
  - online video training and demonstrations
  - 'at the shoulder' support for GPs attending residential care facilities to increase their confidence in using your eNRMC system and provide ad hoc refresher training opportunities. GPs found eNRMC systems easy to use and could see the benefits once they became more familiar with these systems. Before procuring a system, you will need to consider how your eNRMC system might affect your prescribers.

GPs with very few consumers at the residential care facility are reportedly less likely to invest time in learning how to use your eNRMC system. However, this is likely to change as eNRMC systems become more established in the residential care sector. Some GPs may choose to adopt these systems only after they can see improvements in usability. Some may choose to never adopt these systems, but you can prepare for such responses (see Chapter 12).

5.3.3 Servicing pharmacy participation

Servicing pharmacies play a pivotal role in all aspects of the implementation of the residential care facility eNRMC system, including:

- Planning and testing readiness for implementation
- Where additional Pharmaceutical Benefits Scheme (PBS) prescriptions are required, issuing reminders to prescribers to ensure continuity of a consumer's medicine supply.

5.3.4 Medication management workflow

A consumer's eNRMC needs to be created in the system before prescribers can begin prescribing. Residential care facilities should ensure that their workforce can maintain eNRMCs where pharmacy services are limited.

Also, eNRMC systems should have a way of notifying the consumer's GP that the consumer's medicines have changed when a prescription has been generated by another prescriber and supplied by the servicing pharmacy. This information should be documented in your eNRMC system.

5.3.5 Go-live workflow

If you are upgrading to an eNRMC system from a hybrid system, the prescriber needs to review and validate transcribed orders from the paper chart, which may impact go-live schedules. This is because the residential care facility cannot start electronically recording the administration of a consumer's medicines without the prescriber first authorising medicine orders on a consumer's eNRMC.

This can result in some consumers' medicine administration being recorded electronically, while others remain on paper charts, after go-live.

To help avoid these types of problems, you should:

- Clearly define to your prescribers your expectations about the timeliness of their reviews before go-live
- Make clear the risks (for your facility and consumers) and the impact of prescriber delays (that is, maintaining multiple medication management systems).

> Residential care facilities will need to ensure that every consumer at the facility is part of either an electronic or a paper-based medication management process, but not both.

This scenario needs to be carefully considered, so that medication safety errors are not introduced due to two systems operating – there must only be one valid medicine order in place at any time.

Where consumers have had their medicine orders moved to an eNRMC during implementation, the paper chart (previously used) must be annotated with a direction 'Paper-chart CEASED – See eNRMC' and removed or archived so it cannot be updated unintentionally by visiting prescribers.

Where some GPs are not electronically prescribing, residential care facility staff will need mechanisms that clearly identify the consumers of these GPs, so that changes to paper-based medication charts are scanned and sent to the servicing pharmacy.

Every effort should be made to resolve these issues as quickly as possible, so that there is a standardised electronic workflow for medicines administration for all consumers of the residential care facility.

5.3.6 Technology

Residential care facilities that have implemented electronic medication management (EMM) systems have offered the following advice about technology:

- Ensure that the residential care facility's local technology provider is fully engaged during the system implementation planning process
- Ensure that all aspects of the required system technology infrastructure are fit for purpose
- Make sure the wi-fi is adequate for mobile devices used to record administration of medicines, in all areas of the residential care facility
- Ensure that all staff can apply the appropriate medication management workflows when there is an eNRMC system outage (see Chapter 9 for how to deal with eNRMC system outages).

Having appropriate wi-fi is better than relying on eNRMC system synchronisation, which can be problematic. For example, if you are relying on synchronisation, medicines that are already administered will not be updated on the consumer's eNRMC as having been administered until the entire medication round has been completed, which can cause confusion and may introduce unintended errors. Your eNRMC system should update the consumer's records as soon as the medicine is signed off by the nurse as administered.

You will need to identify and eliminate other system synchronisation issues. For example, medicines prescribed should immediately appear on the consumer's eNRMC. If this does not happen, you should have your software vendor resolve it as soon as possible.

> Selecting the best fit-for-purpose equipment needs a lot of consideration. Use checklist B.CL1 to help.

5.4 Background literature scan

To support the guide, the Australian Commission on Safety and Quality in Health Care engaged the Australian Institute of Health Innovation to scan the literature. The literature scan[3] identified the following safety issues in relation to the implementation and use of EMM systems in residential care facilities:

- The evidence base regarding the safety issues associated with implementation of EMM systems in residential care facilities is limited
- Few Australian residential care facilities have implemented EMM systems, and most facilities operate with paper records only
- Design issues related to EMM systems include
  - lack of flexibility in managing complex medication processes
  - poor screen layout
  - an absence of decision support
- Most residential care facilities that are using EMM systems are using hybrid medication management systems (that is, paper and electronic), which can create additional safety risks.

The literature scan[3] also identified the following factors that contribute to successful EMM system implementation and use in residential care facilities:

- Ongoing training and real-time IT support is needed to ensure optimal EMM system use
- Harmonising the EMM systems used across Australian residential care facilities can encourage GPs and servicing pharmacies to use EMM systems
- Expanding system functionality to support use of medicines-related data for quality improvement and safety monitoring activities may improve EMM system uptake by residential care facilities. Currently, many systems do not support functions beyond the day-to-day management of medication tasks.

Finally, the literature scan[3] found that the Australian legislative requirements for GPs to sign paper medication charts and PBS prescriptions hinders optimal EMM system design. However, the PBS 2019 regulation[9] changes and the Australian Digital Health Agency's Electronic Prescribing Conformance Profile[1] streamline the regulatory requirements, and should improve the uptake and use of eNRMC systems in the future.

6 Implementation – from planning to go-live

This chapter describes the main elements of an eNRMC implementation plan at a single residential care facility during a typical implementation. All residential care facilities looking to implement an eNRMC system in a single facility should read this chapter.

The residential care facility's software vendor usually initiates and leads eNRMC system implementations (see also Chapters 10 and 11).

Once you decide to implement an eNRMC system, eNRMC software vendors will work with you to plan for implementation. Timelines for implementation will vary according to the specific needs and size of the facility. All eNRMC system users will need to be trained and supported before the system can 'go live'. If you are including extra components, you will need to allow more time for implementation and make sure you have a detailed plan that considers these extra components (see Part C – Extra guidance for large or complex eNRMC system implementation).

If you want more detail about these stages, read Part C of this guide, especially Chapter 12.

6.1 Stage 1 – Initial high-level planning

This stage introduces the key players, including:

- The residential care facility manager
- Any in-house quality and safety personnel
- The nursing leadership
- The servicing pharmacies
- The software vendor
- The Medicines Advisory Committee.

Box 4 is a list of stage 1 activities.

Box 4: Stage 1 implementation activities

- Work out your eNRMC system scope, benefits, key risks, time frames and key dates.
- Explain the proposed implementation plans, key dates and dependencies to the workforce.
- Establish who will train your eNRMC system users – for example:
  - the software vendor
  - residential care educators or trainers
  - super users.
- Work out any changes to the roster that depend on the proposed implementation plans, including:
  - eNRMC system user training implications
  - extra responsibilities for super users and buddy shifts for go-live support, after-hours support and weekend support after go-live
  - rostering experienced system users for each shift during the go-live period
  - availability of key people during the implementation period.
- Identify any extra devices and equipment you might need, including locations and types of devices (including trolleys, PCs, mobile devices and printers), and order them.
- Assess the existing wi-fi capability and identify and deal with any known black spots.
- Agree to the ICT readiness checks for use in stage 6.
- Identify any local risks and issues that could impede the implementation.
- Obtain any new or updated service agreements between the parties involved in your eNRMC system implementation.

A super user is an experienced user of the system who can support other users.

6.2 Stage 2 – Preparing for your eNRMC system

Stage 2 involves preparing the residential care facility for the upcoming eNRMC system. This includes workforce and technical preparation.

Box 5 is a list of stage 2 activities.

Box 5: Stage 2 implementation activities

- Develop communication plans and communication materials for all eNRMC system users.
- Finalise the new medication management workflow and obtain approval from the Medicines Advisory Committee.
- Engage with consumers and their carers.
- Work out which eNRMC system users may struggle with a new medication management process and/or technology, and address any shortfalls.
- Map consumers to their general practitioners (GPs) to work out how many GPs need to be engaged.
- Map consumers to their preferred pharmacy, for those consumers who have chosen a different pharmacy from the servicing pharmacy.
- Agree to how the supply of medicines for consumers exercising choice of pharmacy and for respite care consumers will be managed.
- Configure new devices and reconfigure existing devices, and test each device to ensure that it works correctly when using your eNRMC test system.
- Train the core team of residential care facility super users and participating pharmacies, to prepare for stages 3 and 4.
- Establish and test the training facility (and, where required, create training data).
- Book all eNRMC system users for training in stage 5.
- Demonstrate your eNRMC system by providing access to a test environment or sandpit (a testing environment that does not affect the proper system once go-live happens) for users to explore, supported by cheat sheets and user guides.

6.3 Stage 3 – Configuring your eNRMC system

Stage 3 involves configuring your eNRMC system.

Box 6 is a list of stage 3 activities.

Box 6: Stage 3 implementation activities

- Identify and configure the different types of medicine rounds, including start and end times, the time required for each round, and the operating window for medicines to be given outside these times. Types of medicine rounds will include:
  - general medicines rounds
  - warfarin rounds
  - time-specific medicine rounds – for example, medicines used for Parkinson's disease
  - Schedule 8 medicine rounds, and other accountable medicines if these are separate from general medicine rounds
  - any other rounds that might be required.
- Configure and validate the picklists for eNRMC system content, if local information that will affect content exists.
- Establish consumer demographic records – including GP, next of kin and carer contacts, and other administrative information – and load high-quality consumer photographs.
- Set up eNRMC system user profiles and test the profiles to ensure that they are operating correctly (including any requirement for Active Directory or single sign-on).
- Set up eNRMC system users and link them to their user profiles (to prepare for stage 5 training). Nursing roles in the testing and training eNRMC system environments should include prescribing functions so that they can become familiar with these functions, to support GPs during the transition period.

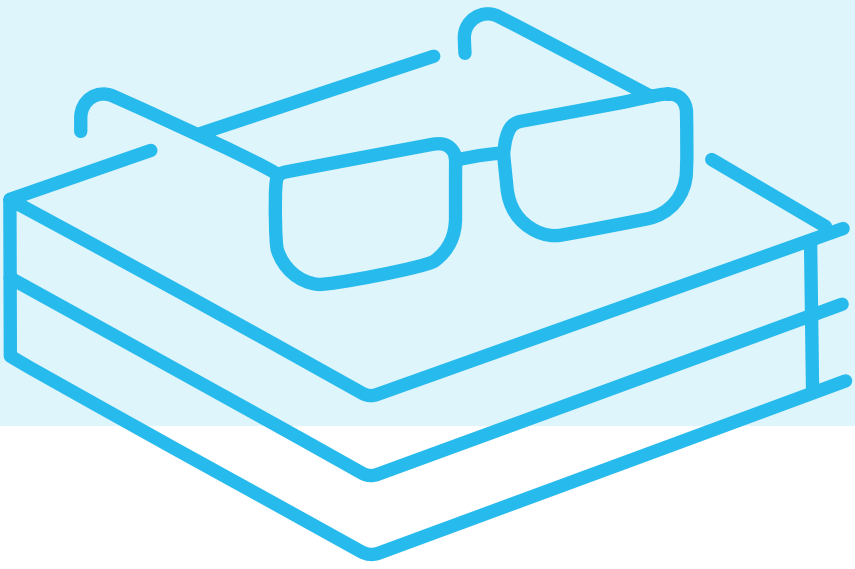
6.4 Stage 4 – Collecting and collating data

Stage 4 involves populating your eNRMC system with consumer data.

Box 7 is a list of stage 4 activities.

Box 7: Stage 4 implementation activities

- For servicing pharmacies, review medication charts and update consumers' eNRMCs with medicines, allergies and considerations.
- For residential care facility nurses, review eNRMCs and update consumers' monitoring data such as weight, blood glucose levels and INRs.
- Record medicines, allergies and other medicines-related information for consumers who are choosing their own pharmacy and consumers needing respite care, in line with the agreed stage 2 process.
- Independently validate the data curation process; for example, a nurse should validate the pharmacy-collated information against your eNRMC system.



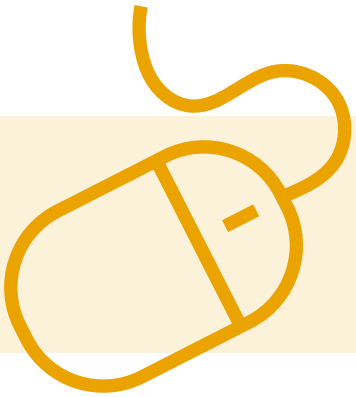
6.5 Stage 5 – Training

Stage 5 ensures that all staff are trained to use the new eNRMC system.

Box 8 is a list of stage 5 activities.

Box 8: Stage 5 implementation activities

- Validate staff access credentials for all staff members.
- Train all residential care facility staff and regular agency staff in line with the training plans.
- Train nurse practitioners in electronic prescribing, so that they can support GPs during the transition period and any new GPs attending the facility.
- Encourage the workforce to practice in a 'sandpit environment' before go-live (including practising the use of prescribing functions).
- For trained staff, complete any post-training competency checklist to reinforce the classroom or one-on-one training.
- Provide training materials in staff rooms, on medication cupboards and on each medication trolley used for medication rounds.
- Ensure that all prescribers have reviewed and approved eNRMCs in time for go-live.



6.6 Stage 6 – Checking for readiness

Stage 6 involves some final checks to ensure that your eNRMC system is ready to go live.

Box 9 is a list of stage 6 activities.

Box 9: Stage 6 implementation activities

- Ensure that the right staff are rostered in line with the go-live plans.
- Conduct simulated medication rounds using a test environment, to familiarise staff with using your eNRMC system and the medication trolley.
- Test all devices to ensure that they are operating correctly and there are no wi-fi black spots.
- Ensure that staff are familiar with registering new consumers.
- Ensure that staff know what to do during eNRMC system downtime (planned and unplanned).
- Ensure that rostered staff are familiar with the consumers on their rounds.
- Prepare the medication trolleys for go-live.
- Undertake a final audit of consumers' charts to ensure that your eNRMC system reflects any changes to the paper charts since the data collection in stage 4.
- Recap the go-live time and activities associated with transitioning from paper to electronic systems, including the last time for regular and 'when required' (PRN) medicine doses on the paper charts.

6.7 Stage 7 – Going live

Stage 7 is the go-live stage.

Box 10 is a list of stage 7 activities.

Box 10: Stage 7 implementation activities

- Hand over from the night shift to the morning shift.
- Check that buddy staff, servicing pharmacists and super users are on site and ready to go.
- Check the previous INR and blood glucose level results for applicable consumers.
- Check medication trolleys are ready to start, including that:
  - devices are connected and logged in
  - consumer medicines are loaded in line with the type of medicine round
  - paper charts are on hand.
- Start your eNRMC medication rounds, electronically recording the medicines administered.
- For the nurse in charge, check for missed doses after each medication round.
- For the nurse in charge, review the operational dashboard and reports each day, to identify issues that may require help from super users and the need for refresher training.
- Roster extra support workers for one week.

Use worksheet B.WS5 to plan your eNRMC implementation process.

7 Day-to-day eNRMC system management

This chapter outlines the ways to ensure that your eNRMC system offers the benefits you signed up for. A residential care facility eNRMC system is not a 'set and forget' system. Once implemented, residential care facility eNRMC systems require ongoing management, updating, refinement, optimisation and improvement – known as 'business as usual'.

Most residential care facilities with eNRMC systems have made some post-implementation improvements in how their eNRMC systems are used. But there does not appear to be a systematic and longer-term approach to eNRMC system refinement and improvement. This could be because of a variety of factors, including:

- A perception that implementation of your eNRMC system has finished
- A lack of governance oversight, leadership or interest in your eNRMC system
- Constrained access to eNRMC data and reporting capabilities
- Insufficient resources for systematic improvement activities.

Successful implementation represents the 'tip of the iceberg' for eNRMC systems

Residential care facilities should implement a program of continuous quality improvement in medication management (see Chapter 8).

It is during continuous quality improvement that all the hard work pays off and the organisation can focus on maximising the benefits of its investment, by delivering:

- Improved medication safety
- An efficient workflow
- A superior user experience
- Better compliance with eNRMC system usage policies
- Demonstrated quality use of medicine improvements.

7.1 Governance oversight

The executive must oversee the ongoing operational eNRMC system governance, with day-to-day oversight from the residential care facility management and support from the Medicines Advisory Committee (MAC)

Where your eNRMC system is part of a broader residential care technology solution, governance should reflect this and leverage opportunities to link medicines-related data and non-medicines-related data.

Actively involving the MAC ensures that your eNRMC system remains relevant to the people who use it. Responsibilities of the MAC should include:

- Compliance activities – ensuring that the regulatory obligations of eNRMC systems are in place (enforced by the executive)
- Clinical governance activities – ensuring that all changes to your eNRMC system are supported before the changes are introduced
- Approving all communication materials associated with changes to your eNRMC system
- Approving the continuous quality improvement program, and ensuring compliance with the changes arising from the program
- Advising the executive about changes to your eNRMC system or its workflow.

Guiding Principles for Medication Management in Residential Aged Care Facilities[4] outlines governance roles for the MAC.

7.2 Around-the-clock support for your eNRMC system

It is important to ensure that your eNRMC system is well supported, given how critical it is that it works around the clock.

You should avoid depending on individual team members. The number and types of workers you need to maintain your eNRMC system will depend on factors such as:

- The importance of local on-the-ground technical support and training capabilities – particularly for rural and remote sites
- Whether your eNRMC system is a separate system requiring its own support resources, or is part of a larger clinical documentation system, so that support resources could be shared
- The capacity of your current ICT team to support the new eNRMC system.

Although extra funds will be needed for a workforce to support implementation of your eNRMC system, you might be able to offset some of these costs after it has been implemented, such as saving money by no longer having to print medication charts.

7.3 Maintaining your eNRMC system

All eNRMC systems require ongoing maintenance to ensure that the information they use remains up to date. Some of the changes will be done by the software vendor or servicing pharmacy, in conjunction with the residential care facility. In other scenarios, the residential care facility will manage this information. A schedule outlining these maintenance activities and responsibilities should be developed and maintained to provide compliance assurance.

Table 1 outlines types of system maintenance changes you might come across and who might be responsible for them.

Table 1: Examples of types of system maintenance changes and responsibilities

Responsibility	Changes	Example of changes needed
Residential care facility	Maintaining eNRMC system user access	Each time a new user is added to the system, the specific eNRMC system access credentials of the user will need to be configured and confirmed by the system user
	Updating: • Policies and procedures • Education and training material • Clinical protocols – for example, antimicrobial guidelines or psychotropic medicines protocols • Medicines-related reference information	Each time a new organisation policy about medicines use is released, the policies and protocols governing its use in your eNRMC system should be configured

continues

Table 1: *continued*

Responsibility	Changes	Example of changes needed
Servicing pharmacy	Maintaining alerts and clinical decision support tools	Each time a new medicine is registered in Australia or receives a new or changed Pharmaceutical Benefits Scheme listing, the medicine reference data accessed by your eNRMC system must be created or modified. The software vendor or servicing pharmacy would usually load these updates automatically into the system once adequately configured. Specific alerts or rules may also need to be configured to reflect changes in the medicine reference data
Software vendor or servicing pharmacy, with testing by the residential care facility	Updating eNRMC medicine tables, such as adding new reference data	
Software vendor, and testing by the residential care facility	Testing the interfaces between your eNRMC system and the broader residential care technology infrastructure	Each new release of the eNRMC software will require regression testing of the interface between your eNRMC system and the broader residential care technology solution (where used) to mitigate risks and ensure that the updated software is safe to be implemented
Software vendor and residential care facility	Fulfilling medication management reporting requirements	The software vendor has a responsibility to maintain reporting in your eNRMC system. Residential care facilities have responsibilities for testing the changes made by software vendors before implementation (see Section 7.4)

Refer to Section 3.6 for further examples.

7.4 Software upgrades

There are two main reasons for needing to upgrade your software:

- As part of routine software improvements and known 'bug' fixing services that are periodically released by the software vendor
- To introduce new functionality in line with contemporary Australian practice.

> You should commit to keeping your software up to date. Also, make sure the MAC approves all updates and changes, including any competency requirements to use the new software.

New versions of software will need to be tested before use, and you will need a test system to do this. How much testing is needed depends on the volume of software changes in the new release. Your software vendor should let you know what types of changes are included in a software release note. The more changes there are, the more testing is required. If the changes are substantial, the software vendor will let you know if you need to retest the entire eNRMC system.

All eNRMC system users should be made aware in advance of any planned outages associated with upgrading your eNRMC software. Make sure you time these outages to happen – for example, at night – to minimise disruption to administration of medicines. If the changes are substantial and your eNRMC system might be offline (in downtime) for several hours, you may need to refer to your business continuity planning procedures (see Chapter 9).

The 'production' eNRMC system (or 'live' system) should be backed up before any upgrade. Make sure you clearly define and rehearse any protocol for rolling back your eNRMC system, in case a failed upgrade means you need to roll back to the previous release version of your eNRMC system.

7.5 Education and training

It is important for all eNRMC system users to undergo ongoing education and training. Continued training might include refresher training or targeted training. Your MAC should approve all ongoing training programs and training materials to be delivered.

7.5.1 Refresher training

Regular refresher training is important to:

- Allow eNRMC system users to consolidate their understanding and use of your eNRMC system
- Prevent users from adopting unsafe or inefficient work practices or workarounds.

All eNRMC system super users should be trained on any software upgrades, system maintenance changes and any changes to eNRMC system–related policies.

All training should use a dedicated training environment that mirrors the production environment (see Section 13.4 for more information on technical environments).

> An eNRMC system is a tool to help with medication management; it does not remove the requirement for good clinical judgement. This should be made clear when providing eNRMC systems training, including how to raise any concerns about the safe use of your eNRMC system.

7.5.2 Targeted training for specific issues and users

Targeted training can be used to address:

- Specific problems
- A shortfall in an individual's knowledge or skill in using your eNRMC system.

The requirement for additional training may be identified through ongoing monitoring of eNRMC system data or staff feedback sessions. For example, reviewing your eNRMC system data will identify areas of noncompliance or poor practice. Specific training sessions can then be provided to address these issues.

7.6 Rehearsing and refining business continuity plans

Business continuity planning is used to make sure you know how to manage when your eNRMC system is down.

See Chapter 9 for more detail.

> Use worksheet B.WS6 to work through the day-to-day management requirements of your eNRMC system.

8 Using your eNRMC system to improve medication safety

This chapter explains how to use data from your eNRMC system to improve medication safety at your residential care facility.

One of the most important reasons for implementing an eNRMC system is to use the data to improve medication safety. This is best done through a process of continuous quality improvement.

Some of the examples provided below may not reflect the capabilities of eNRMC systems operating in Australian residential care facilities at the time of publication. You will need to speak with your software vendor to understand your system's reporting capability.

8.1 Continuous quality improvement

A continuous quality improvement process, such as the Plan–Do–Check–Act (PDCA) method (see Box 11) should be implemented and embedded in the culture of the residential care facility. You can then use this process to optimise your eNRMC system. For example, you could:

- Track which alerts appear and how eNRMC system users respond to them
- Identify how often prescribers use structured order sets compared with free-hand prescribing
- Determine if your workforce is complying with your medicines policies
- Track how users navigate and use the system, including changes to how the workforce uses the system
- Track the timeliness of activities such as administration rounds, completing telephone orders and medicine supply from the pharmacy
- Identify and diagnose recurrent issues or risks, such as potential workarounds
- Audit and evaluate the root cause of reported incidents
- Provide other data to support ongoing evaluation of your eNRMC system against defined baseline indicators or self-assessment tools, where available.

> Regularly reviewing these data allows you to constantly refine your eNRMC system and the way it supports the safety and quality of medicines use in your residential care facility.

You can use data to communicate problem areas with your workforce, or let them know how your eNRMC system is improving medication safety.

Residential care facilities should encourage software vendors to outline their organisation's approach to incorporating continuous quality improvements. This would include incorporating medication safety and human factors design principles (see Resources) into future iterations of their system.

Box 11: Plan–Do–Check–Act management method

Plan–Do–Check–Act (PDCA), also referred to as Plan–Do–Study–Act (PDSA), is an iterative four-step management method. Businesses use it to control and continually improve processes and products. Multiple iterations of the PDCA cycle are repeated until the problem is solved.

You can use PDCA-type techniques to:

- Improve medication safety
- Identify any extra training required
- Make medication management more efficient
- Work out if your system complies with policies.

You can review and improve these items at regular intervals – for example, once a year.

Source: Christoph Roser at AllAboutLean.com

Case study 3 shows how a fictional residential care facility developed work programs to help monitor and optimise its eNRMC system.

Case study 3: Optimising an eNRMC system

Green Acres Aged Care implemented an eNRMC system a year ago to help improve medication safety and medication workflow for all consumers. The Medicines Advisory Committee (MAC) wants to ensure that its eNRMC system:

- Is used consistently for all consumers, including respite stays (while supporting consumer choice)
- Supports national medication safety priorities
- Provides optimum medication workflow
- Optimises medication safety and quality features.

continues

The Green Acres leadership team also created work programs that focused on the most important areas of concern for its facility:

- Ensuring that psychotropic medicines are used appropriately, which is a national medication safety priority
- Addressing medication safety issues, such as high-risk medicines being prescribed without an indication
- Workarounds in the eNRMC system that, if fixed, would lead to safer use of the eNRMC system for the facility's respite consumers.

The MAC approved and monitored these work programs. The programs are now ready for their first formal review after one year. The MAC uses data from the eNRMC system to check the progress of the work programs:

- First, the MAC noted that there was variation in prescribing psychotropic medicines; the MAC recommended that the clinical decision support tool for prescribing 'when required' (PRN) psychotropic medicines be reviewed and updated to reflect best-practice recommendations
- Second, the MAC found that antimicrobials are sometimes being prescribed without an indication; the MAC recommended that an additional alert be introduced to the system that appears when an antimicrobial is prescribed, to ensure that prescribers are filling in the indication to support antimicrobial stewardship (a medication safety priority in aged care)
- Finally, the MAC noted that many users are still using paper charts as a workaround for respite consumers; the MAC recommended additional training for users to support their adoption of the new electronic workflows.

Based on this review, the leadership team organised appropriate training to address the paper charts being used for respite consumers. The software vendor was able to help update the clinical decision support tool for prescribing PRN psychotropic medicines, and developed an extra alert to remind prescribers to fill in the indication when antimicrobials are prescribed. These updates underwent user acceptance testing to ensure that they were working correctly (see Section 13.4.4) and were approved by the MAC before being implemented in the production (live) system environment.

The leadership team updated the work programs, in line with the MAC's recommendations, and marked them for review in another year.

By reviewing and updating work programs regularly, Green Acres can optimise the use of its eNRMC system in a cycle of continuous quality improvement.

See worksheet B.WS7 to help you optimise your eNRMC system.

8.2 Using eNRMC system data for administrative purposes

Residential care facilities should consider the configured content of their eNRMC systems before procurement. How your eNRMC system is configured and used will be important for how you can use the data for auditing and reporting (including regulatory compliance) once implemented.

If you already have an electronic medication management system and are hoping to transition to an eNRMC system, you may also wish to review its configuration to ensure that you will be able to access and use the data in the way you intend.

Configuration items may include:

- The dataset used to describe a medicine (metadata), such as the medicine name, form, strength, dose, frequency or duration
- The grouping of medicines by their medicine class or therapeutic action (such as psychotropic medicines, antimicrobials, opioids and anticoagulants); in conjunction with structured prescribing (and the avoidance of free-text prescribing), this will ensure effective reporting – a fundamental reason for implementing eNRMC systems
- Which medicines require dual signatures for administration
- The physical structure of the residential care facility, including buildings, floors and units, and where the consumers are living.

8.2.1 Data output

Data can be made available in a variety of ways.

Most eNRMC systems are likely to include a way to produce standard, predefined reports. These often include some user-defined parameters, such as date range or medicine type. Although standard reports can be useful, the available information is often constrained, limiting the utility of the reports.

Ad hoc reports are those you can develop for a specific purpose, often in response to a particular issue. A larger residential care facility may develop its own ad hoc reports, but most residential care facilities are unlikely to have the resources and skills to build them themselves.

The most effective way to output data is to have an integrated dashboard within your eNRMC system. The dashboard can be configured to present up-to-date medicines data, so the workforce can act on the data quickly. For example:

- Delays to the administration of time-dependent medicines, such as those for Parkinson's disease
- High-risk medicines without indications
- Prolonged use of psychotropic medicines or antibiotics
- Polypharmacy
- Outstanding chart reviews or telephone orders.

Your software vendor can help you work out what sort of reporting capabilities are available in your eNRMC system.

Appendix D is a fictional example of how an eNRMC system can be used for reporting.

8.2.2 Business intelligence

Business intelligence provides reporting capabilities that are external to your eNRMC system.

Business intelligence is most effective when data from different sources are combined to create a more complete picture than can be derived from a single dataset – for example, bringing together medicines data from your eNRMC system (such as opioid use) with other clinical data from your clinical documentation system (such as falls risk assessments) and falls incident data from elsewhere.

Business intelligence supports 'what if' scenarios using predefined datasets; however, it requires substantial organisational governance and resources. Larger residential care facilities are more likely to use business intelligence, especially to develop standardised corporate reporting across all their facilities.

9 Managing eNRMC system downtime

This chapter outlines how to manage your eNRMC system during downtime. This is also known as business continuity planning, or BCP.

BCP creates a way to deal with potential threats to the medication management activities that your eNRMC system is doing for you. BCP needs to be comprehensive and consider all possible points of failure, including partial failures.

Events that will need BCP include:

- Inability to access your eNRMC system because the hardware or software has become unavailable or the database becomes corrupted
- Loss of power
- IT or wi-fi failure
- Loss of connectivity between, for example, your eNRMC system and other systems such as the clinical documentation system(s)
- Server or data centre failures
- Planned downtime, such as for system upgrades
- Cyber-attacks
- Pandemic management planning.

You should manage your eNRMC system–related business continuity plans as part of the residential care facility risk management framework to assess and address potential risks, and make sure the Medicines Advisory Committee (MAC) approves the plans.

9.1 Communication protocols

Business continuity plans should include when to invoke BCP and the different roles and responsibilities of the workforce involved in the plan (including considerations around who commences BCP). Communication to staff that BCP procedures have commenced should take multiple forms to ensure that messages are received by all who need them.

For each type of scenario, you should describe:

- The type of event
- Any time dependencies – for example, just before or after a medication round, three hours before a medication round, or night-time events
- Any pre-enabling activities (for planned downtimes) – for example, printing paper medication charts and records of administration (signing sheets), and communication of BCP information
- What the workforce needs to do during the BCP event – for example, the process and documentation required for new medicine orders and administration records
- What the workforce needs to do after the BCP event – for example, updating your eNRMC system to reflect any new medicines ordered for a consumer and medicines administration records
- Any time dependencies that change what the workforce needs to do – for example, if the BCP event exceeds a specified time frame, the practicalities of updating your eNRMC system with a large volume of data
- Any shift-based dependencies that change what the workforce needs to do – for example, where the eNRMC system user updating your eNRMC system is not the same as the one recording the paper-based documentation during the BCP event.

9.2 Printed paper charts and records of administration

Although your eNRMC system is electronic, you may sometimes still need the ability to print a paper record of the medicines list and record of administration to support your downtime mitigation strategies. Printed paper copies of your eNRMC may also be needed to support handover of medicines information when a consumer is transferring between residential care facilities or to hospital.

Printed paper-based medication charts generated by your eNRMC system do not currently meet the legislative requirements of a legal prescription. Where supply is required, an alternative prescription must be used. This may include using a verbal emergency supply order, a prescription generated from the general practitioner prescribing system, a handwritten order on the paper National Residential Medication Chart (NRMC) or a local paper chart that contains the same features as the NRMC.

Printed paper charts (interim charts) should include the following safety and quality elements:

- Consumer demographics (family name, forename(s), date of birth, gender, weight and body mass index, residential care facility health record number, address, Medicare number, pension number, Department of Veterans' Affairs and other relevant entitlement numbers)
- Consumer ID photograph
- Known allergies and adverse drug events
- Administration considerations (for example, swallowing difficulties)
- Residential care facility details (RAC ID, name, address)
- Prescriber and pharmacy details
- Medicine order details, including recently ceased medicine order details
- Medication administration start date, expiry date and review date
- Regular and 'when required' (PRN) medicines
- Nurse-initiated medicines
- Telephone orders
- Information in line with regulations.[12]

Each medicine order on the printed chart should be sequenced as medicine name, route, dose and frequency, and include Pharmaceutical Benefits Scheme/Repatriation Pharmaceutical Benefits Scheme numbers.

Each page of the printed chart should include the page number and the total number of pages (for example, page 6 of 10) so that those using the chart can be confident that they have all of the printed chart.

The MAC or equivalent should review the arrangements for printing paper charts, to make sure all information is included to provide safe care during system downtime or transfer.

NRMC support materials are available on the website of the Australian Commission on Safety and Quality in Health Care (see Resources).

9.3 Rehearsing downtime activities

It is important for residential care facilities to regularly rehearse BCP plans, in line with residential care facility policy. The workforce will need to know:

- What BCP arrangements are in place
- How they are activated and managed
- How to transition back to using your eNRMC system when service is restored
- How a consumer's eNRMC is updated after system outage.

> If you do not know what to do or what will happen during an eNRMC system outage, you should talk to your software vendor.

After a downtime event, the leadership team should review the effectiveness of the BCP arrangements. If needed, you should refine the business continuity plans before submitting them to the MAC for approval.

> If your eNRMC system treats medicines administered during downtime as 'missed doses', these should either be excluded from reporting arrangements or reported as due doses not recorded due an eNRMC system outage.

> You have reached the end of the 'Implementing an eNRMC system in a residential care facility' (Part B) section of this guide. Through this process, there may still be knowledge gaps that you have not yet uncovered. Work through worksheet B.WS9 to highlight any knowledge gaps.

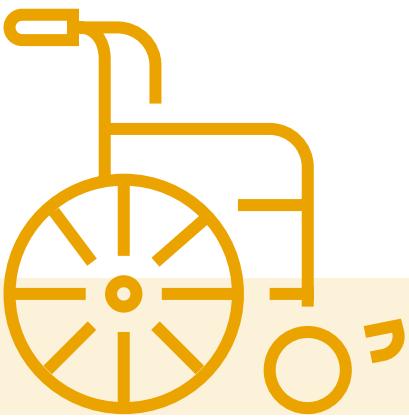
Part C Extra guidance for large or complex eNRMC system implementation

This part of the guide includes extra guidance to support multi-site eNRMC system implementations required by medium to large residential care providers. You should review this chapter if you want to:

- Implement an eNRMC system that standardises medication management processes and improves safety across your facilities
- Provide greater visibility and compliance with corporate policies.

Part C considers some additional challenges and complexities raised when implementing a more complex eNRMC system, including:

Governance that works for multiple residential care facilities that are spread out geographically
Procurement and contract management
Change management
Lead-site implementation at one residential care facility
Evaluation and refinement of the lead-site implementation, and rollout of the refined EMM system across all sites
Post-implementation review once the rollout is complete



10 Governance for an eNRMC system project

This chapter describes why robust project governance is critical to successful implementation of an eNRMC system.

Implementation of an eNRMC system is complex. The decisions your organisation will need to make and the governance oversight that is actively provided will be critical in supporting you and your residential care facility's safe implementation journey. Discussion records that capture with clarity the rationale for decisions made and the point at which these decisions were endorsed will support a clear and rigorous approach. These records may also be used to develop key messages and changes that need to be communicated to support successful implementation (see Chapter 6).

To achieve the best outcomes, you will need effective project governance. Good project governance provides:

- Strong leadership
- Clarity in decision-making
- Transparency in roles and responsibilities.

Project governance of an eNRMC system should reflect the size, complexity and cost of the project, including governance representation from:

- Consumers or consumers' family representatives
- Corporate executives/managers
- Residential care facility managers
- Quality and safety personnel
- Representative general practitioners who will use the system for prescribing
- Representative servicing pharmacies that will use the system for supply
- Nurses based at each residential care facility
- ICT staff
- Medicines advisor(s) or a Medicines Advisory Committee (MAC).

A typical eNRMC system governance structure consists of three operating levels:

- Project board, which includes the project sponsor
- Project team, which includes the project manager
- Reference group (typically end-users) see Section 10.4.

The MAC must be engaged at each step of the implementation process, and works in conjunction with these teams.

10.1 Project sponsor

The project sponsor is the executive responsible for delivering your eNRMC system. It is critical to get the right person for this role. Ideal project sponsors include:

- The chief executive officer (CEO), who could send a strong message to the organisation of the importance of your eNRMC system, and demonstrate top-level commitment to achieving successful implementation
- The director of safety and quality or director of clinical governance, who could provide impartial sponsorship and a strong voice for consumer safety and quality.

The CEO and the chief information officer (or equivalent) must fully support the project, even if they are not named as the project sponsor.

10.2 Project board

The project board should consist of at least the project sponsor and a small number of principal stakeholders representing:

- Different residential care facilities that are geographically apart
- Safety and quality advisors
- Nurses
- The finance workforce
- The ICT workforce
- Consumers (or consumers' family representatives).

The project board (including the project sponsor):

- Focuses on
  - overseeing the project schedule and tracking against the schedule
  - identifying and managing
    - critical milestones and time frames
    - project risks and risk mitigation strategies
    - issues management
    - project budget, including actual expenditure and estimates to project completion
- Is responsible for
  - procuring your eNRMC system in a large implementation project
  - approving any variations to the project schedule or budget
  - reporting to the executive so that there is a high degree of visibility of the project by the executive
  - ensuring that project board meeting minutes are brief and actionable
- Should avoid becoming involved in the operational detail of the project – this is the role of the project team and the reference group.

10.3 Project team and manager

The scope and complexity of implementing an eNRMC system mean that it needs an experienced and appropriately resourced project manager. For larger implementations, it is best if the project manager is full time and not involved in any operational duties.

The project manager should be a specialist project manager with substantial experience of the residential care sector.

The size and composition of the project team should reflect the size and scope of the implementation. The project team should be accountable to the project manager, and some members may also have professional accountability to others. The project team needs to be multidisciplinary, and could include members from some or all the following areas:

- Management
- Nursing
- Medical advice (where these roles exist, or participation from MAC members)
- Pharmacy (from servicing pharmacies and non-supply pharmacists)
- Safety and quality
- Education and training
- ICT services
- eNRMC system software vendors.

The project team (including the project manager):

- Focuses on
  - their allocated responsibilities and activities, and how these fit with other team members' activities
  - the achievements of the team members during the reporting period
  - activities that are running late
  - activities to be completed during the next reporting period
  - changes to risks and issues assigned to the team members (including new risks and issues)
- Is responsible for
  - meeting the agreed project time frame and budget
  - ensuring that all stakeholders in the multidisciplinary team are engaged, and addressing their specific concerns and issues
  - reporting internally and to broader governance groups
- Should avoid
  - being involved in any operational duties
  - being dominated by any one professional group.

If yours is a large eNRMC system implementation, your project team members should be full time, be fully funded and have previous implementation experience. You may want to avoid part-time project team members, as their other commitments could conflict with their eNRMC project responsibilities.

The project team should meet at regular intervals, preferably weekly, to discuss the eNRMC system schedule, risks and issues so that there is a common understanding among the team members.

10.3.1 Project management methodology

Before starting the project, you should think about the project management methodology and tools to support the project schedule, risk management and project reporting.

It is recommended that you use a formal project management methodology, such as PRINCE2. However, it is important to match your preferred methodology to your project size and risk.

For example, the project management controls used in PRINCE2 would include:

- Project initiation document, project brief and project approach
- Project team structure (roles and responsibilities)
- Quality plans
- Project communication plans and implementation plans
- Authorisation to proceed to next stage report
- End-stage report, exception reports and project closure report
- Lessons learned.

10.3.2 Project schedule

When putting together your project schedule, do not forget to leave enough time for:

- Establishing the project governance structure, assembling the project team, developing a business case and obtaining funding approval
- Procuring, selecting and acquiring your eNRMC system, and negotiating the contract (see Chapter 11)
- Undertaking an implementation planning study (see Chapter 12)
- Customising the software; the more customisation required, the more time the software vendor will need (see Chapter 13)
- Undertaking user acceptance and interface testing, which are time-consuming and will increase with the extent of software customisation (see Chapter 13)
- Evaluating the eNRMC system lead implementation site and rolling out the remaining residential care facility systems (see Chapter 13)
- Establishing any extra ICT infrastructure required (see Chapter 13)
- Any other activities required during implementation (see Chapter 13).

The project schedule is a communication tool that shows how project activities are related and depend on each other. A good project manager will ensure that an effective project schedule is developed and maintained throughout the project.

10.3.3 Managing risks

You can identify many risks before the project starts as part of planning, but you will need to manage some as they arise. Managing risks poorly can affect the quality of your eNRMC system, thus increasing costs and delivery times.

Your project team should discuss and manage risks at project team meetings. Risks are categorised as high, medium or low impact – the project manager should refer high-impact risks to the project board for oversight.

Project issues are events that may affect the delivery of the project. They may be categorised as high, medium and low impact – the project manager should report high-impact issues to the project board. Project issues should be routinely managed by individual project team members responsible for the issue and discussed at project team meetings.

Checklist C.CL1 will help you identify project risks and issues.

10.3.4 Project reporting

You will need to consider your residential care facility's existing governance and project implementation requirements, to determine what is to be reported and to whom. You will need to update terms of reference to reflect these reporting lines and responsibilities.

10.4 Reference group

The eNRMC system reference group advises on multidisciplinary aspects of the implementation to the project team. The reference group will support operational aspects of the eNRMC system within the clinical setting including education, training and process mapping.

Use worksheet C.WS1 to help you design your eNRMC project governance structure.

11 Procuring an eNRMC system

This chapter discusses procurement, which may be useful if you are a large, multi-site residential care provider that has a large budget for an eNRMC system.

In this chapter, you will learn about developing a business case, getting funding approval, writing a request for tender (RFT) and reviewing the tenders you receive (see also Chapter 6).

11.1 Developing a business case

For any large investment, it is best practice to develop a business case, and an eNRMC system is no exception. The chief executive officer usually makes this decision.

A business case should consider the strategic, clinical and economic justification for your eNRMC system, and outline the project management requirements.

Business cases can be developed as either a one-stage or a two-stage process.[13] The first-stage business case will be high level and provide the executive with enough information to decide whether to pursue the project. A more detailed second stage helps you decide which system is the most cost-effective option and most closely meets your organisation's requirements.

You may have your own standard business case template, but templates are also available online.[14]

11.1.1 First-stage business case

The first stage is mainly stakeholder consulting. Chapter 5 sets out a series of getting started activities that would help you write a first-stage business case. You may also choose to outsource writing business cases. If you do, make sure your senior stakeholders are heavily involved in the process.

Specific elements to be considered in the first-stage business case include the:

- Rationale for, and expected benefits from, implementing an eNRMC system (see Boxes 12 and 13)
- Implementation model to adopt (see Section 5.2)
- Strategic context for your eNRMC system (see Box 13)
- IT needs
- Expected functionality in your eNRMC system, and how it might integrate with existing or future systems
- Governance and project management structures (see Chapter 10)
- Change readiness and change management requirements (see Chapter 12)
- Requirements for education and training, and ongoing support, including maintaining and upgrading your eNRMC system (see Chapter 7).

Box 12: Defining the problem

Medication management in residential care is complex, fragmented and often inefficient:

- **Medication changes are common**; prescribers may not be able to make changes directly to the medication chart in a timely way
- **Workflows to share medicine information are inefficient**, involving a combination of digital and paper processes between the prescriber, the residential care facility and the consumer's pharmacy of choice
- **Serious unintended medication errors have** occurred as a result of poor information management between care and service providers
- **Aged care quality and safety standards will mandate greater reporting** in the future, which will be difficult to achieve unless digital transformation of the aged care sector occurs
- **Consumer and family expectations** around the responsibilities of residential care facilities need to be exceeded to champion and support safe medicines use.

Box 13: Strategic context for eNRMC system implementation

Implementation of the eNRMC system should be considered from a number of differing perspectives, including people, the organisation and industry. Each may have a specific internal or external focus that should be considered:

1) Organisational perspective (internal)

- Improve safety, reduce medicines-related harm
- Reducing the need to transcribe between care provider systems
- Removing the need to fax medicine charts between care providers
- Reducing the need for the prescriber to use phone orders
- Improve communication about medication management
- All service providers can view the eNRMC at the same time
- General practitioners (GPs) can prescribe remotely in an emergency without the need to be on-site
- GPs will have a reduced need to generate paper Pharmaceutical Benefits Scheme/Repatriation Pharmaceutical Benefits Scheme prescriptions in their practice software
- Residential care facility staff and the pharmacist are able to clearly read the medicine order now that information is electronically displayed
- Reminder alerts in the eNRMC system can support detection of issues and clinical decision support

2) Executive board perspective (internal)

- Should reduce organisational and consumer safety risks
- Improve medicine governance and oversight of issues
- Reduce medicine-related complaints from consumers, carers and family members
- Promote a better user experience than the current state processes
- Can the business case developed be justified?
- Do we have the finances to support the project?

continues

3) Staff member perspective (internal)

- It should support me to be able to do my job efficiently
- It should be simple to use
- It should integrate with other software systems I need to access to streamline what I need to do to provide consumer care

4) GP and supply pharmacist perspective (external)

- It should save me time and support me to provide better care to my patients
- It must not impact my revenue
- It must be simple to use
- Training should be short and comprehensive, and must fit around my work schedule and availability
- There should be support on hand if I have a problem while using the system

5) Consumer, carer or family member perspective (internal and external)

- Why are things changing?
- When will this change happen?
- What will this change mean for my family member?
- What training will be provided to staff before they can use the eNRMC system?
- Will I be able to see the medicines prescribed for my family member?
- Will I be able to express my wishes around the choice of pharmacy I get my medicines from?

6) eNRMC system software vendor (external)

- Will we have the capability to support this contract?

11.1.2 Second-stage business case

After an in-principle approval of the first-stage business case, you can prepare the second-stage business case.

This business case should consider elements such as:

- How your eNRMC system will improve medication safety and quality – use national and international evidence to substantiate your statements and make them relevant to your facility
- Time savings and improved workflows
- How the system could be used to support accreditation activities, and adherence to organisational policies and protocols for medicines
- Financial benefits, such as no longer having to purchase or print medication charts
- All ICT infrastructure costs, including fixed and wireless devices, around-the-clock service and managing downtime, making any external dependencies very clear
- Advantages and disadvantages of options, with detailed costings
- Workforce capabilities
- A sensitivity analysis, to understand the tipping points in the business case
- All workforce costs during the implementation period and to support business as usual
- Time frames.

> Implementing an eNRMC system is time-consuming and costly – do not underestimate or understate this in the business case.

11.2 Funding approval

To get approval for funding, you can produce a preliminary procurement strategy, which should include:

- Scope and objectives that are based on the contributions and needs of stakeholders
- A description of what exactly is being procured
- A procurement time line
- An analysis of the market's capability to meet the procurement objectives
- How to procure, including the tendering approach or type of contract that may be offered if using a market approach
- The ability and capacity within the organisation to manage the procurement process.

The project sponsor should also make sure that the funding request includes a completed business case, a procurement strategy and a high-level change management plan.

11.3 Procurement, product evaluation and selection

Before developing a procurement plan, make sure the project team seeks advice from the local procurement or purchasing unit. Your team should also review the eNRMC system options available in the Australian market. There are relatively few commercial solutions available in Australia, and not all of them will be suitable for your organisation.

Understanding the range of eNRMC functions available before starting procurement will ensure that:

- Your team assesses the procurement options in light of the strategic business or ICT plan, including the viability of eNRMC system procurement and the number of suitable eNRMC solutions that are available
- The organisation's eNRMC business and technical specifications are realistic, are based on an understanding of the market, and do not unintentionally preclude potential eNRMC solutions.

> Worksheet C.WS2 will help guide you through procuring an eNRMC system.

> You should also refer to the Software Vendor Information Resource for extra information about developing the capabilities of your eNRMC system.

11.3.1 Project procurement plan

Make sure your organisation has an appropriate governance structure (see Chapter 10), to ensure that someone is accountable for any procurement decision.

A procurement plan should be developed to:

- Identify the procurement need
- Select the most appropriate procurement method
- Accurately state business and technical specifications
- Prepare tender documentation
- Rigorously assess responses
- Negotiate the final contract
- Manage the ongoing contract.

11.3.2 Procurement considerations

Before developing an RFT, the residential care facility should clearly define the type of eNRMC system it needs. This includes the functional, technical and usability specifications, and the tender evaluation criteria.

Type of system

A number of implementation options are available in Australia (see Section 5.2).

The organisation's ICT strategy and solution architecture may dictate which solution is ideal for you. This is a very important decision for the organisation and a priority for the chief information officer (CIO). Any team procuring an eNRMC system should first seek the advice of the CIO or equivalent, and be very clear about their preferred approach.

Tender evaluation plan

An evaluation plan should be prepared before the tender is issued and should detail:

- The processes and principles to be followed when evaluating tender responses
- The responsibilities of the evaluation panel
- The evaluation schedule, which should include site visits
- How vendor product demonstrations will be conducted, including how any eNRMC system meets the business and technical specifications
- The tender evaluation scores and weightings that will be used to formally evaluate the tender
- Other outcomes, such as value for money, quality and preferred contract period.

You can use your local procurement policies and protocols to manage tenders, and you should adhere to these policies when preparing the tender evaluation plan.

Tender evaluation panel

Your eNRMC system tender evaluation panel should be multidisciplinary, and include the project manager and representatives from:

- The project team
- Corporate executives or managers, and residential care facility site managers
- Quality and safety managers (where applicable)
- Prescribers who will use the system for prescribing
- Pharmacists who will use the system for verification and supply of medicines
- Nurses from each residential care facility
- The ICT, finance and purchasing teams
- Corporate medicines advisors or someone from the Medicines Advisory Committee.

11.3.3 Tender documentation

Your project team will develop the eNRMC system tender documentation, but the team should check with your residential care facility procurement section for specific guidance about the content of tender documentation. The project manager should ensure that the tender documentation has been produced in line with local procurement policies and approved for release.

> Use checklist C.CL2 as a guide if your organisation does not have its own tender documentation guidance.

11.3.4 Tender evaluation

The tender evaluation panel will assess the tenders using the method specified in the tender evaluation plan, and consider mandatory requirements, qualitative evaluation and value for money.

Mandatory criteria

Mandatory criteria for a potential vendor response include:

- Compliance with the requirements set out in the RFT document, including ensuring that tenders are complete and were lodged correctly
- Compliance with, and acceptance of, the conditions of contract
- Demonstration of the tenderer's ability to meet all mandatory conditions of the tender and specifications.

If a tenderer cannot meet all of the mandatory requirements, you may not consider that tenderer any further. Carefully consider the allocation of mandatory categories in eNRMC requirements to ensure that the procurement process is viable.

Qualitative criteria

Once you have eliminated any noncompliant tenderers, the remaining tenders should be evaluated against a set of weighted, qualitative evaluation criteria. Your tender evaluation panel will assess and score the tenderer's ability to satisfy these criteria. Table 2 is an example of how to score a tender evaluation, so you can use a numeric system to compare tenders.

Table 3 includes examples of qualitative criteria that may be considered in an eNRMC system tender evaluation. Your project team should develop the actual evaluation criteria and corresponding weights, in consultation with stakeholders.

Table 2: Example tender evaluation scoring approach

Score	Definition
0	Fail
1	Poor – not demonstrated
2	Unsatisfactory – marginal
3	Satisfactory – expectations met
4	Very good – expectations marginally exceeded
5	Excellent – expectations exceeded

Table 3: Example weightings for tender evaluation criteria

Evaluation criterion	Weighting (%)	Range in weightings (%)
Demonstrated experience of implementing an eNRMC system for multi-site residential care providers	15	5–15
Software for the eNRMC system applies to the Australian context and meets specifications	10	8–30
Methodology the tenderer uses to implement the eNRMC system	8	0–8
Skills and experience of the proposed team	10	0–10
Usability, including test scripts	10	8–12.5
Integration with other systems – for example, clinical documentation system(s)	5	0–10
Support for all aspects of medication management workflow, including: • Prescribing • Servicing pharmacy supply • Servicing pharmacy instructions • Nurse-led medication administration • Operational dashboards • Corporate reporting	20	5–15

continues

Table 3: *continued*

Evaluation criterion	Weighting (%)	Range in weightings (%)
Extent and integration of clinical decision support for prescribing, servicing pharmacy supply and medication administration	5	5–10
Conformance to ADHA conformance profile specifications	10	5–15
Satisfactory references	5	0–5
Other value-added elements in the tender proposal	2	0–2.5
Total score (out of 100%)	100	n/a

ADHA = Australian Digital Health Agency; n/a = not applicable

Value for money

Your tender evaluation panel can assess the value for money using the weighted scoring and the price detailed in the tender response. Your panel could also consider:

- The quality of the proposed solution and how well it meets or exceeds your specification
- The cost of the system across its whole life
- The capacity, experience and financial stability of the tenderer to deliver the proposed solution, as specified, on time and on budget.

Evaluation report

After your evaluation panel has finished evaluating the tenders, your project manager should prepare an evaluation report that details:

- The tender and tender evaluation approach
- The tenders received
- The relative ranking of the tenders
- Any outstanding issues
- The purchase recommendations for the preferred tender(s)
- The rationale used to select the preferred eNRMC system supplier.

11.3.5 Product evaluation and selection

Once you have narrowed down the possible suppliers, you will need to evaluate the products to choose one.

Part of this process is developing scripted product scenarios. These test scenarios should reflect how your eNRMC system will be used and should include processes that:

- Show how new consumers are set up
- Show how consumers' servicing pharmacy of choice and respite consumers are supported
- Consider the entire medication management cycle
- Consider the management of complex and high-risk medicines, such as warfarin and insulin
- Reflect the multidisciplinary requirements of users and assess the overall usability of your eNRMC system
- Show interoperability between your eNRMC system and other third-party systems.

> Example sheet C.EX1 is a sample test script scenario template.

The eNRMC product demonstrations should reflect the detailed requirements of specific groups of eNRMC system users (see Section 2.4.3).

Other issues to consider include the Australian context and user experience.

Australian context

Systems developed overseas may not contain Australianised medicines information or incorporate Australian guidance into the clinical decision support. It may take significant time (and money) to align these elements to the Australian context. This needs to be considered in the costings, and should be considered to be a risk that will need to be carefully managed during implementation.

User experience

Your eNRMC system should comply with all functionality requirements, but the user experience is also vital. Future users should extensively test the system, to ensure that the proposed solution supports medication management workflows for all users. Particular attention should be given to the workflow support available for highly repetitive or frequently used eNRMC system functions, such as medicines prescribing and administration.

> User experience is the way in which your eNRMC system supports access to, and use of, eNRMC system functions.

If your chosen eNRMC medication management solution has any deficiencies, you should flag these as issues that must be improved and make sure they are explained in the contract. It is better to identify these issues as part of your eNRMC product selection, rather than find that the product is a poor fit later. Usability issues or functional shortfalls can result in poor uptake and pushback by eNRMC system users during implementation. Fixing such problems 'on the fly' rather than at the start of the project will be expensive and time-consuming.

11.4 Contract management

Software vendor contracts should be managed in line with a contract management plan. This includes regular meetings and performance monitoring throughout the life of the contract.

11.4.1 Contract management plan

Once a vendor is chosen, you should put together a contract management plan that describes how your eNRMC system contract will be managed. This plan should include:

- A description of the goods or services being provided
- Contact details of personnel associated with the contract
- A list of documents associated with the contract and their location
- Transitional arrangements, communications channels, performance evaluation measures and reporting requirements
- Risks and corresponding mitigation activities
- A conflict and dispute resolution process
- Contract milestones, performance measures and remediation clauses
- Payment timing and acceptance conditions, including support arrangements, and how contract variations will be managed
- The contract review process.

11.4.2 Contract management meetings

Your project manager and the software vendor should meet regularly to ensure that the project is being delivered as described in the contract. The meetings will also allow you and the vendor to identify and resolve any contract issues as soon as possible. Such meetings can be face to face or virtual.

The management meetings also allow your project manager to monitor the software vendor's performance, including how they manage risks, problems and milestone deliveries. By staying in contact, your software vendor will better understand your residential care facility, which should benefit the delivery and ongoing operation of your eNRMC system.

By the end of the project, your project manager should be able to evaluate the process and ascertain whether stakeholder needs and expectations have been met. This should ensure that:

- Value for money has been achieved
- Procurement outcomes match or exceed the original objectives
- Software vendor performance is satisfactory, as measured against contracted evaluation measures
- Significant contract management lessons learned are captured and disseminated.

12 Change management

This chapter outlines what needs to be considered in eNRMC system implementation, planning and change management. This includes project communications – an important part of change management.

12.1 Implementation planning study

The implementation planning study (IPS) should be a joint effort between you and your eNRMC system vendor. It needs to reflect the software vendor's implementation approach and responsibility to deliver the system, and your implementation tasks.

> An IPS can help you identify any areas that may be particularly complex or time-consuming during your eNRMC system implementation, and that may need extra attention.

The IPS should show that your software vendor completely understands your needs and environment. Your project team should become familiar with the software vendor's implementation methodology, the selected software and the software vendor's project team.

At the end of the IPS process, you should have a better understanding of your implementation process tailored specifically to your selected eNRMC system, including your:

- Lead-site implementation plans
- Refinement and rollout plans
- Technology and eNRMC system environments.

After the IPS is completed, you may want to align payments to the project milestones in the IPS.

> If you do not have the budget to hire the software vendor to undertake the IPS, you can do it in-house. See worksheet C.WS3 and checklist C.CL3 for help to set up your own IPS.

12.2 Project communications

Communication is an essential change management tool for eNRMC system implementation. Your entire workforce needs to know about your intent to implement an eNRMC system. Your messages should be communicated clearly and early to all staff, and include details such as the expected benefits, implementation time frames and implementation sequence.

Box 14 shows examples of change management messages that might be used for project communications.

Box 14: Examples of change management messages for project communications

- Better medication safety through the use of eNRMC systems for prescribing, servicing pharmacy supply and administration of medicines.
- Improved adherence to best-practice guidelines for use of psychotropic medicines for consumers with dementia.
- Easier recall and review of eNRMCs for consumers with polypharmacy.
- More efficient and timesaving workflows.
- Easier for prescribers to prescribe medicines and review eNRMCs remotely, supported by telehealth consultations (as demonstrated by the response to the COVID-19 pandemic).
- Better governance because it is easier to access medication safety data.

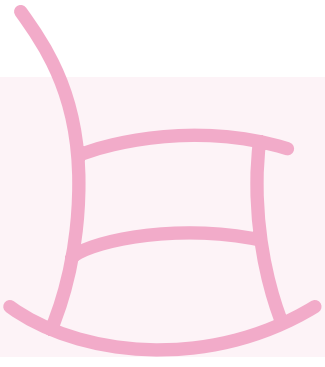
Make sure you use the same messages in your communications during eNRMC system implementation as the ones you use in the education and training materials.

The types of communication tools used should also be considered, including:

- Project branding and identity for all communications and education materials
- Project newsletters and status reports, emails and personalised letters
- Posters and flyers
- Promotional materials such as pens and stickers
- Materials to raise awareness of your eNRMC system
- Demonstrations of your eNRMC system
- Screenshots from your eNRMC system.

For additional information about change management, see *The Effective Change Manager's Handbook*.[15]

> Use worksheets C.WS4 and C.WS5 to help you develop your communications plan.



13 Technical requirements for implementation

This chapter outlines additional eNRMC system implementation activities that may be relevant for some residential care facilities. It provides more detail on topics in Chapter 6.

This chapter particularly focuses on the technical infrastructure and software implementation requirements. You will most likely need professional help to meet many of the requirements described in this chapter. However, you and your project team will still need to take part in the activities, and you will need to make sure the proper workforce and resources are available.

13.1 Technical infrastructure

Technical infrastructure is the foundation of your eNRMC system. It includes hardware and software components.

13.1.1 Purchasing and managing technical infrastructure

Usually, organisations will purchase and manage technical infrastructure in collaboration with their software vendor.

Technical infrastructure may include:

- Central server infrastructure supporting the various technical environments (see Section 13.4)
- High-availability infrastructure – for example, duplicating the central server environment in another location and in a way that minimises downtime during any type of outage
- Robust telecommunications infrastructure
- Single sign-on and identity management where other systems integrate, such as a clinical documentation system(s)
- Access requirements that support medication management workflow, such as swipe cards, biometrics and proximity devices
- Active Directory facilities – if being used for user login – including inactivity timeout requirements
- Remote access for general practitioners.

Some eNRMC systems may use cloud-based service delivery models. If this is the case for your system, you will need to make sure that key elements – such as system performance and provision of technical environments for testing, training and corporate reporting – will meet your needs.

You should identify all potential points of failure in the system, and then ensure that these are part of your plans for managing downtime (see Chapter 9).

13.1.2 Local residential care facility components

Technical infrastructure includes:

- Robust wireless infrastructure
- Desktop and point-of-care solutions such as wireless networks, fixed or mobile devices, and computers on wheels
- Sufficient dedicated printers and power points.

You will need to make sure you have this equipment. Section 5.3.6 includes additional considerations and advice around technology.

13.1.3 Technical readiness assessments

Technical readiness assessments should be done at key implementation stages. This will ensure that all of the technical infrastructure is ready to go, when you need it.

Key stages include:

- Before the lead-site implementation, to assess all corporate technical infrastructure
- Before go-live at each additional residential care facility site, to assess capacity and performance
- Before go-live at each residential care facility site, to assess local technology infrastructure.

The assessment should systematically review each component of the system and the existing infrastructure, so that any problems are identified and resolved before negatively affecting eNRMC system operation.

13.2 Traceability matrix

A traceability matrix maps business requirements through the procurement and contract management stages so that any changes to business requirements can be traced back to the source requirement.

The traceability matrix:

- Includes any variation from the original solution, as your eNRMC system is specified, procured, configured and tested as fit for purpose
- Shows that the eNRMC system that is implemented meets the original requirements and, if not, identifies why
- Provides transparency of the project management process as implementation moves from a concept to production using a specific eNRMC medication management solution
- Is updated with the user acceptance testing (UAT) scripts and the results of the UAT process (see Section 13.4.4).

> See example C.EX2 for an example of a traceability matrix.

13.3 Interfaces between your eNRMC system and other electronic systems

Although most of your system's business requirements will be addressed in the selected eNRMC system, you may need to develop an interface between your eNRMC system and other clinical documentation system(s) that your residential care facility already uses.

Although the software vendor, along with the provider(s) of the clinical documentation system(s), will lead the integration testing (also called end-to-end testing), you will need to participate.

Interface development and integration testing are usually time-consuming and expensive. They need sufficient planning and resourcing to ensure that these activities are completed well in advance of eNRMC system implementation rollout.

13.4 Technical environments

Your ICT services will be responsible for building the technical environments for your eNRMC system, alongside the software vendor. However, some of the business owners of the eNRMC system environments should be project team members with responsibility for configuration and testing.

ICT services will determine how many eNRMC system environments are required. Typically, there will be four types of environments:

- Configuration, and software development if required
- Testing, including UAT and interface testing
- Training, with training datasets
- Production – the live, operational environment.

Managing and synchronising these environments requires time and money, which should be factored into the project budget and plans. The environments should be managed in line with the software releases, configuration changes and training 'refresh' needs, supported by transparent operational and clinical governance oversight. (Also see Table 1.)

13.4.1 Configuring eNRMC system content

Configuring eNRMC system content requires time and resources.

Configuration might include:

- Reference tables for your eNRMC system
- Order sentences
- Clinical decision support tools and alerts
- Access to medicines-related reference information
- User roles and access privileges
- Interfaces between your eNRMC systems and other systems
- Corporate reporting.

The selected software vendor should be able to give you more information about this task, and tell you which parts of configuration are software vendor tasks and which parts are the responsibility of the residential care facility.

13.4.2 Software development

The eNRMC system you choose should be able to support your business needs. If not, the software vendor may need to develop extra software to tailor your eNRMC system to your residential care facility's needs.

If you do need extra software, you should identify this during the eNRMC system procurement stage so the prospective software vendors can confirm whether they are able to provide it and, if so, that it becomes a part of the contractual arrangement with the selected software vendor.

Preferably, any additional software should be developed, and thoroughly tested and signed off before implementation at the lead site to ensure that it is fit for purpose.

It can be risky developing bespoke software, and you should be certain that you can justify the extra risks and costs. This is particularly important if your residential care facility is inexperienced in software development projects. You also need to consider the added demands of your project team, because they might need to:

- Help to develop your eNRMC system specifications, and review and sign off on them
- Undertake UAT, including developing test scripts for the new software.

13.4.3 Non-functional testing

Non-functional testing is a type of software testing that checks the non-functional requirements of the system. The specific non-functional testing you will need to do is determined by the technology infrastructure mix.

For example, most residential care facilities will need to test the:

- Capacity of the eNRMC system, to ensure that the proposed number of users can use the system simultaneously
- Performance of the eNRMC system, to ensure that the system response times are in line with those specified
- Availability of the eNRMC system, if there are resilient technical features that can be tested
- Devices and wi-fi
- Corporate infrastructure capacity, to identify any constraints that might affect the performance of the eNRMC system.

The general process of managing non-functional testing is:

1. Develop test cases in line with the technical requirements identified
2. Run the test cases
3. Record the outcome of the test cases
4. Address test case failures
5. Repeat steps 2–4 until successful.

If you are using high-availability eNRMC technical infrastructure, you will also need to test the load-balancing and replication failover aspects of the infrastructure. If your software vendor is providing this component, you should make sure they test these components and ask for the test results.

> High availability refers to a system that operates, uninterrupted, for a long time.

The traceability matrix (see Section 13.2) should either validate the original requirement or document that the original requirement has been modified and

changed. You should do this for each of the technical requirements identified in your business case.

13.4.4 User acceptance testing

> UAT ensures that your eNRMC system is fit for purpose and that the software is stable, with no major defects.

UAT starts after all software is developed, and your eNRMC system is built and configured. It is the last stage of the eNRMC system-build phase, and tests whether the system will operate properly when implemented in a residential care facility. The test environment should mirror the live environment.

UAT involves:

1. Developing a set of test scripts or cases
2. Defining the acceptance criteria for signing off on the UAT process
3. Informal UAT, including break-testing
4. Formal UAT, to determine whether the software solution has passed or failed the test case, which includes end-to-end testing
5. Recording all test cases and results in a traceability matrix (see Section 13.2)
6. Accepting and signing off on the tests.

> Usually, you will use professional testers to manage your informal and formal UAT processes, who will guide you through your UAT. However, note that this is not a 'hands-off' situation. You will need to make sure that you and your eNRMC system users are involved.

Developing test cases

Test cases, also known as test scripts, are a set of instructions or scenarios to be run on your eNRMC system to check that the software does what it is meant to. It is important that test cases reflect real-life medication management workflows, and that system users contribute to their development. Test cases should include testing for high-risk prescribing errors. You will probably need the help of a business analyst for this.

You will not be able to run your test cases until your eNRMC system has been configured and eNRMC system users have been trained in, and are familiar with, the functions of the software.

> See example C.EX3 for an example of a test case.

Defining acceptance criteria

You will need to define the acceptance criteria before starting UAT.

> Acceptance criteria refer to a set of predefined requirements that must be met to mark a test script as complete.

Depending on your acceptance criteria, you might choose to go live with an eNRMC system that has known issues or bugs if these do not affect consumer safety. However, you will need to decide whether the system implementation should be delayed until known issues are resolved. You do not want system bugs to affect your eNRMC system users.

Informal user acceptance testing and break-testing

An informal UAT tests the UAT cases that have been developed. This process will ensure that defects identified during the formal UAT process are because of software errors rather than incorrect test cases or system configurations.

Your eNRMC system users should be involved in UAT. If you cannot get any prescribers to participate, your nurses or servicing pharmacy will have to test the prescribing functions. All eNRMC system users involved in UAT must be comfortable using the system before they can participate.

Break-testing provides a way for the project team to try to 'break' the system by identifying defects that may not be found when following normal business processes. It is completed before formal user acceptance testing.

> See example C.EX4 for break-testing examples.

Formal user acceptance testing

The formal UAT process has a defined number of test cycles and defect management cycles. It uses the test cases, and you record whether your eNRMC system has passed or failed. Any failures will need to be fixed and retested.

End-to-end testing

> End-to-end testing is the final test process to ensure that the configured eNRMC system operates and interoperates correctly with any third-party systems.

End-to-end testing involves technical experts from each of the third-party systems that will interoperate with your eNRMC system.

End-to-end testing is complex and time-consuming. You should make sure you have enough time and resources to complete this step.

> See example C.EX5 for end-to-end testing examples.

Acceptance and sign-off

Acceptance and sign-off of the UAT process should occur when all major defects have been rectified and UAT has had a clean run. The traceability matrix (Section 13.2) should reflect the original requirements, and how these have changed as your eNRMC system implementation project has progressed.

When all major stakeholders sign off on the traceability matrix, the configured eNRMC system is fit for purpose and reflects your residential care facility's requirements.

> See worksheet C.WS6 to guide you through these technical requirements.

13.4.5 Training environment

Training and refresher training should use a dedicated training environment that mirrors your eNRMC production environment. It is essential that each screen of the training environment is clearly marked **'For training only'** to ensure that the two systems do not confuse eNRMC system users.

13.5 Tasks before and after go-live

During the initial go-live period, you will need to make sure trained, competent eNRMC system users are rostered on. Try not to use agency staff, unless they have been trained to the same level as your other users. Be sure to allocate tasks to team members and a schedule to cover all shifts, including the evening, overnight and weekend shifts.

You need to apply care when assigning tasks, so that the project team ensures that all eNRMC system users build confidence in their use of the system. Project team members should be highly visible at the residential care facility site.

> You should maximise the support from clinical champions and expert users, and make sure they are rostered on as often as possible during the initial stages of go-live.

> Checklist C.CL4 will help you ensure that you have considered everything before you go live. Section 6.7 also includes a list of go-live activities.

13.6 Lead-site evaluation and feedback loop

Once your lead site has gone live, you will need to evaluate its implementation process so you can improve on it, then replicate the improved process at your other sites.

To properly evaluate the lead site, you should visit it and:

- Watch the entire medication management workflow
- Consult with all stakeholders, including prescribers, the servicing pharmacies, the residential care facility manager, eNRMC system users, the Medicines Advisory Committee and the software vendor
- Review the raised issue logs
- Review the post-go-live eNRMC system changes
- Review your eNRMC system data, including missing data, inconsistent use of data, and the quality of unstructured clinical data recorded in free-text boxes
- Review medication safety data, such as the reason for missed doses, prescribing alert overrides and medicine consents
- Check the reporting capabilities and how easy they are to use.

It may be useful to set up workshops to explore the initial findings and possible changes after each phase in the implementation. As more time elapses, these lessons can be forgotten, or remembered inaccurately.

An evaluation report with recommendations should be developed and reviewed through eNRMC system governance before any changes are made to the implementation process. Once agreed, the evaluation may result in changes to some or all of the following elements:

- Content configuration, business logic and reporting of your eNRMC system
- Medication management workflow
- Education materials
- Policies of your eNRMC system
- Software of your eNRMC system
- Project communications, governance and planning.

> Note that any changes to the software will require retesting, which may, for example, include repeating some UAT. (See also Section 7.4.)

Ideally, you will want eNRMC system users from residential care facilities that are next in line to implement eNRMC to participate in the evaluation. This will allow them to learn firsthand from the experience, and to advise the project team if there are any local differences that may need to be considered.

14 Post-implementation review

A post-implementation review (PIR) is the last step in your eNRMC system implementation process. PIR closes the feedback loop.

Through a PIR, you can review the success of your eNRMC implementation and identify areas for further improvement. These further improvements will form the start of a process of continuous quality improvement, as detailed in Chapter 8.

You will need to consider the best time to start your PIR. Good timing would be when:

- Your eNRMC system is embedded in day-to-day operations
- Users can still remember their initial experiences using the system
- Users are familiar with the benefits of the system
- Users can still remember the medication management processes that were in place before your eNRMC system was implemented.

Your project manager or project team can complete the PIR. Depending on your budget and scale of eNRMC implementation, you may commission an independent organisation with experience of electronic medication management or eNRMC systems to do your PIR.

> Use worksheet C.WS7 as a guide if you want to do your own PIR.

A completed PIR will usually result in a recommended action plan for improvements.

Once the PIR recommendations have been actioned, you can communicate your findings and roll out the improvements to your other residential care facilities.

Numerous PIR guidelines and templates are available online – for example:

- Techno-PM
- ProjectManagement.com
- Free Management eBooks.

> At the end of Part C, work through worksheet C.WS8 to highlight any knowledge gaps.

Appendix A Worksheets for Part A

A.WS1

Understanding the possibilities for your eNRMC system

Activity	✓	Comments
Which medication management system do you use now?		
What advice has your software vendor offered, if you are currently using a hybrid system or a paper-based medication management system?		
Has your software vendor let you know: • When they expect to have an ADHA conformant eNRMC system available? • When the ADHA conformant solution will be ready for implementation at your lead site?		

ADHA = Australian Digital Health Agency

A.WS2

Assess your goal-state eNRMC system

Goal-state eNRMC systems in residential care facilities will have the following safety and quality elements. Assess the priorities for your goal-state system. Note that the components pre-marked with M are those needed to be conformant with the Australian Digital Health Agency requirements. All software vendors should be providing these components.

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
Main components of the goal-state eNRMC system for residential care facilities		
ADHA conformant and complies with all Commonwealth legislation relating to electronic prescribing, dispensing and supply of PBS/RPBS medicines	M	
Complies with all state or territory medicines and poisons legislation relating to medicines prescribing, supply and administration in the state or territory in which the residential care facility is based	M	

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
Contains the safety features inherent within the paper-based NRMC chart (not included elsewhere), such as: • Consumer with similar name alert • Consumer photo ID • eNRMC 'Review date' or prompt (to issue/reissue medicine order) • Consumer's medication management (e.g. swallowing difficulties, dexterity difficulties) to support prescribing, administration and supply • Pathology instructions included by the prescriber to support safe administration of variable dose medicines		
Includes support for documenting over-the-counter and complementary medicines		
Information that is recorded or changed in the eNRMC system is auditable	M	

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
Supports consumer choice of GP and supplying pharmacy	M	
Includes a reporting and data mining capability to support medication safety audits, quality use of medicines and continuous quality improvement activities		
+		
+		
Electronic support for all prescribers (includes regular prescribers and those who are temporary or visiting)		
Access to the eNRMC system directly, either while at the residential care facility or remotely, through a secure VPN connection		
Compliance with state or territory medicines and poisons legislation	M	
Prescribing in line with PBS regulations	M	

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
Viewing and recording of clinical monitoring information for relevant medicines		
Clinical decision support tools when prescribing (also dispensing and administering) medicines, including:		
• Drug-to-drug interactions		
• Drug-to-allergy interactions		
• Drug-to-diagnosis or indication		
• Access to electronic references such as the *Australian Medicines Handbook* and *Therapeutic Guidelines*		

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
Clinical decision support tools that support best practice and are appropriate to prescribing specific medicines, including:		
• psychotropic medicines		
• antimicrobials, in line with antimicrobial stewardship principles		
• other high-risk medicines		
Prompts for regular review and reissue of the medicine orders, either just before the end of the six-month cycle or at other times based on the consumer's needs		
Support for transitions of care through the My Health Record system or other standalone system		

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
Review of the Best Possible Medication History and other medication reconciliation activities (where available)		
Review of the consumer's entire eNRMC system record (includes the electronic record of medicines administered previously and, for example, compliance with their current medicines, use of PRN medicines)		
Documented communication with the residential care facility nurses or servicing pharmacy about a consumer's medicines		
Documentation in line with residential care facility policy(ies)		

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
A way for infrequent or visiting prescribers to access the eNRMC system in a timely way		
+		
+		
Electronic support for servicing pharmacies and their pharmacists		
Supports supply of medicines (based on the generation of an electronic prescription)		

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
Direct access to the residential care facility eNRMC system		
Review of new or changed medicine orders from prescribers		
Annotate medicine orders on the eNRMC with any specific administration, handling or storage instructions		
Documented communication with prescribers or residential care facility nursing staff about a consumer's medicines		

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
+		
+		
Electronic support for nurses		
Registration and establishment of eNRMCs for new consumers and respite stays (regardless of how the medicines are supplied)		
Presents to the nurse a legally valid medication order for administration	M	
A medicines administration screen that is congruent and contemporaneous with the consumer's eNRMC	M	

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
Visibility and review of each medicine to be administered, with all of the information required for the medicine administration clearly displayed		
Records administration of each medicine, including PRN and nurse-initiated medicines	M	
Records the reason for not administering a medicine	M	
Provides alerts when a medicine has been missed		

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
View and record clinical monitoring information to support safe administration of medicines		
Records telephone orders when prescribers are unable to prescribe the required medicines (remotely)		
Communicate with prescribers or the servicing pharmacy about a consumer's medicines		
+		

Goal-state eNRMC system component	Mandatory (M) or desirable (D)	Comments
+		
Other components		
Integration with an existing clinical documentation system		
Includes the National Guidelines for On-Screen Display of Medicines Information that supports medication safety		
+		
+		

GP = general practitioner; NRMC = National Residential Medication Chart; PBS = Pharmaceutical Benefits Scheme; PRN = pro re nata (Latin for 'as needed/when required'); RPBS = Repatriation Pharmaceutical Benefits Scheme

A.WS3

Support consumers' choices and respite care

Activity	✓	Comments
Understand the options available to you within your eNRMC system to support consumer choice		
Develop the proposed medication management workflow for consumer choice, including how the: • eNRMC system will support consumer choice, so the medication management workflow for these consumers is the same as for all other consumers • Contracted pharmacist will support the consumer's choice of pharmacy to participate in using the eNRMC system • Residential care facility workflow will support consumer choice		
Validate the proposed workflow with involved stakeholders		
Train the relevant eNRMC system users		
Embed the medication management of consumer choice within residential care facility policies		

A.WS4

Identify your eNRMC system roles and responsibilities

Once you have started your implementation, begin completing this section. You will need to understand the implications of how your eNRMC system operates, and the implications for eNRMC system user roles and responsibilities. It is also useful to revisit and update this worksheet after your eNRMC system is in place.

For each eNRMC system user role:

- Clearly define eNRMC system responsibilities
- Ensure that there is consistency across the responsibilities of roles. For example, if the residential care facility has a responsibility to ensure that prescribers review a consumer's eNRMC, there should be a corresponding responsibility on prescribers to attest that the consumer's medicines have been reviewed and that they are appropriate as at the date of the review, and that this review is documented in the system.

Activity	✓	**Comments**
Clearly define the executive member with overall responsibility for the eNRMC system		

Activity	✓	Comments
Clearly define the responsibilities of all prescribers (including regular prescribers, after-hours prescribers and infrequent visitors with prescribing rights). Responsibilities should include: • Using the eNRMC system for all medicines prescribed • Reviewing medicines and (re)issuing medicine orders • Following residential care facility policies regarding consumer informed consent for medicines being prescribed • Recording indications for use when prescribing certain medicines • Attending required eNRMC system training, including refresher training		
Clearly define the responsibilities of the eNRMC system users in: • Supporting medication safety for consumers who decide to exercise their right to choose a different pharmacy • Attending required eNRMC system training, including refresher training		

Activity	✓	Comments
Clearly define the responsibilities of nurses. Responsibilities should include: • Administering medicines and ensuring that medication rounds occur at regular times • Managing missed doses • Assessing the need for, and initiating administration of, PRN medicines • Documenting and administering nurse-initiated medicines • Documenting and administering telephone orders (and relevant sign-off by prescriber)		
Clearly define the responsibilities of the MAC in signing off on all eNRMC system-related decisions, policies, content and materials		

Activity	✓	Comments
Clearly define the responsibilities of the software vendor, including ensuring that the eNRMC system: • Meets state or territory legislation and PBS regulations • Supports the timely availability of medicines for prescribing in line with Therapeutic Goods Administration and PBS releases • Is adequately tested so that it is safe to use • Supports nationally recognised medication safety practices • Supports medication safety priorities in residential care (e.g. antimicrobial stewardship, safe transitions of care) • Is maintained in line with regulatory changes so that the residential care facility is able to meet its obligations within the required time frames		
Clearly specify any other eNRMC system users and their responsibilities + + +		

MAC = Medicines Advisory Committee; PBS = Pharmaceutical Benefits Scheme; PRN = pro re nata (Latin for 'as needed/when required')

A.WS5

Ensure that your eNRMC system complies with legislation, regulations and policies

Activity	✓	Comments
Ensure that your eNRMC system meets all required legislation and regulations		
Review and update your policies to include your eNRMC system and submit to the MAC for review and approval. Worksheets A.WS6–A.WS8 have more information about policies		
Review and update policies associated with eNRMC system use, and submit them to the MAC for review and approval. Worksheets A.WS6–A.WS8 have more information about policies		
Review your continuous quality improvement work programs that include compliance activities, and review how the eNRMC system is used in relation to these policies (see Section 8.1)		

MAC = Medicines Advisory Committee

A.WS6

Ensure that your EMM policies reflect the eNRMC system users and workflows

Activity	✓	Comments
Do your EMM policies consider how the eNRMC system will be used by the following groups?		
Regular visiting prescribers		
Other prescribers, including locum GPs and visiting specialists, nurse practitioners, dentists, optometrists		
Pharmacies (servicing and patient's choice)		
QUM and accredited pharmacists		
Nurses		
Care workers		
Others, including those accessing eNRMC system data		

EMM = electronic medication management; GP = general practitioner; QUM = quality use of medicines

A.WS7

Ensure that your existing medication management policies support your new eNRMC system workflow

List your medication management policies below. For each policy listed, identify any updates in relation to roles, responsibilities and workflow that will be required to accommodate your eNRMC system. An example has been provided below for consideration.

Existing medication management policy or policy gap identified	**Change element**	**Future state**	**1. Action assigned to:** **2. Action:** **3. Planned delivery by:**
Example: Medicines Administration Policy (PN-005)	Telephone orders	Anticipated less reliance on telephone orders in the future state, as prescribers can directly log onto the eNRMC system and prescribe. Where a telephone order is requested by registered eNRMC system prescriber unable to access the eNRMC system remotely, RN managing the patient to refer to eNRMC system Quick Reference Guide 25: Managing telephone orders. Automated eNRMC system reports will be generated every 24 hours for review by the residential care facility manager in charge, who will contact the prescriber who has omitted to co-sign their telephone order within the legislated time frame. KPI measure (M5) telephone order co-sign will be reported monthly to MAC and Exec Ops Committee for compliance oversight.	1. K Turner 2. Update the policy PN005 3. Aug 2021

Existing medication management policy or policy gap identified	Change element	Future state	1. Action assigned to: 2. Action: 3. Planned delivery by:
+			
+			
+			
Other policies your residential care facility might need			

RN = registered nurse

A.WS8

Ensure that your policies support how the eNRMC system relates to other systems/workflows in your residential care facility

Consider the other systems and workflows that exist in your residential care facility. Identify systems that intersect or relate to the eNRMC system and the policies that support their use. List these policies below. For each policy listed, consider what change may need to occur to accommodate your future eNRMC system. An example has been provided below.

Existing electronic system/workflow **eNRMC system impact assessment** **Policy name and number**	**Change element**	**Future state**	**1. Action assigned to:** **2. Action:** **3. Planned delivery by:**
Example: Transfer of patient to acute facility (PN-010)	Communication of: • Medicines administered within the last 72 hours • ADR and allergy status • Devices supporting administration.	RN on duty will print out a paper-based copy of the record of administration from the eNRMC system (*see Quick reference guide 23: Printing an eNRMC record of administration*) before transfer. Noting this must be only be actioned immediately before transfer. RN on duty to annotate on the printed copy if the record of administration where a patient has an external device to support administration (e.g. 30 mg morphine subcut infusion/24 hours administered via *Niki t34 syringe pump* connected in situ), or medicines have been sent with the patient to support continuity of care (e.g. Seretide accuhaler 500 microg/50 microg packed in patient belongings). Once the consumer has departed the facility, the same RN on duty must change the consumer's eNRMC system location status to 'unplanned leave – hospital' (*see Quick reference guide 39: Changing eNRMC system consumer location status*).	1. A Morris 2. Update the policy PN010 Liaise with: • Local acute facility emergency department Liaise with residential care facility nursing staff to support understanding of: • proposed new workflow • transfer of care eNRMC medication documentation outputs. 3. June 2021

Existing electronic system/workflow eNRMC system impact assessment Policy name and number	Change element	Future state	1. Action assigned to: 2. Action: 3. Planned delivery by:
+			
+			
+			
+			

Existing electronic system/workflow **eNRMC system impact assessment** **Policy name and number**	**Change element**	**Future state**	**1. Action assigned to:** **2. Action:** **3. Planned delivery by:**
+			
+			
+			
Other policies your residential care facility might need			

RN = registered nurse

A.WS9

Summary of activities for Part A, and their status of completion

After reading through Part A and working through the worksheets, document the status of completion for each of the activities listed in the boxes below. Summarise any outstanding actions.

Activity	Complete (C), partially complete (PC) or not commenced (NC)	Outstanding action summary
A.WS1		
A.WS2		
A.WS3		
A.WS4		

Activity	Complete (C), partially complete (PC) or not commenced (NC)	Outstanding action summary
A.WS5		
A.WS6		
A.WS7		
A.WS8		

Appendix B Worksheets for Part B

B.WS1

Make the case for switching to an eNRMC system

Activity	✓	Comments
Establish the case for implementing an eNRMC system		
Identify stakeholders to be consulted: • Executives (corporate and local) • Clinical managers • Quality and safety personnel • MAC members • External stakeholders, including prescribers, servicing pharmacies and QUM and accredited pharmacists • Others. (Use worksheet B.WS2 to record the details of stakeholders to be consulted)		

Activity	✓	Comments
Develop the questions to be used in the consultation. Consider known challenges with medication management when framing your questions, and targeted questions for all users who will interact with the system		
Depending on stakeholder sensitivities, and the logistical challenges of bringing all stakeholders together, you may wish to consider conducting one-on-one interviews with some or all stakeholders initially		

Activity	✓	Comments
Run one or more workshops		
Run a workshop with all stakeholders to develop and review the findings of the consultation		
For each finding, identify how you will know that you have achieved success		

Activity	✓	Comments
Validate the findings		
Establish how much consensus there was at the workshop(s), explore issues raised and endeavour to obtain agreement		
Develop a vision statement for the eNRMC system		
Document the basis for any differences of opinion, as they may need to be addressed later		
Issue the results of the review workshop as a record of the discussion		

MAC = Medicines Advisory Committee; QUM = quality use of medicines

B.WS2

Consult with the relevant stakeholders in making a case for change

Name of stakeholder	Role	Contact details	Rationale for participation or comments	Consultation complete? (Y/N)

Name of stakeholder	Role	Contact details	Rationale for participation or comments	Consultation complete? (Y/N)

B.WS3

Get the groundwork done

Activity	✓	Comments
Visit a selection of residential care facilities that have already implemented eNRMC systems, preferably from different software vendors, to understand:		
The rationale for their eNRMC system implementation		
The benefits derived from implementing the eNRMC system, and whether the benefits met original expectations		
Whether a business case was developed, and whether they can share it		
Whether an assessment of the market was made before selecting a software vendor, and the reason for their selection		

Activity	✓	Comments
The number and type of people required to implement the eNRMC system, and the roles and responsibilities of team members		
How the project was governed, and the role of the MAC in implementation		
How consumers, and their carers and families, were engaged before implementation and how their concerns were addressed		
The role of the servicing pharmacies in the eNRMC system implementation		

Activity	✓	Comments
How GPs were engaged, and GP feedback on using the eNRMC system		
If any GPs did not participate, how medicines are managed for consumers under their care		
How access for after-hours GPs and specialists is managed		
How medicines are managed for consumers who choose their supplying pharmacy or their GP		

Activity	✓	Comments
How respite care consumers' medicines are managed		
The role of the software vendor in the implementation of the eNRMC system		
The responsiveness of the software vendor to requested improvements or changes to better support medication safety or workflow		
How initial training was provided, and who did the training		

Activity	✓	Comments
How ongoing refresher training is handled, and who trains new users of the eNRMC system		
How long the implementation took, and what the main stages in the implementation were. Ask if the implementation plan can be shared		
Whether enough time was given for implementation		
What worked well and what worked less well in the eNRMC system implementation		

Activity	✓	Comments
What would the residential care facility do differently in hindsight		
Also:		
Ask if you can see a demonstration of how the eNRMC system is used and how it supports the end-to-end medication management process, including: • Prescribing • Supply • Annotation of medicine orders • Records of administration		
Watch people using the system to prescribe and administer medicines		

Activity	✓	Comments
Talk to eNRMC system users to see what they like about using the system and what they think needs improving		
Understand how the eNRMC system supports access to medicines-related data through the use of reporting and dashboards. Which reporting capabilities are most useful and which need improving?		
If the residential care facility uses a clinical documentation system, understand the extent of information sharing between the two systems. If there is no automated information sharing, ask where the information is recorded and how people are trained to ensure that the information across the two systems is reviewed and updated on time		

Activity	✓	Comments
Discuss the human resourcing experiences		
List any other things that you wish to explore during the eNRMC system site visits		
After the site visits, you should:		
Understand the eNRMC system marketplace operating in the residential care facility sector, and when system vendors will have eNRMC systems available		
Know which implementation approach you would like to use		

Activity	✓	Comments
Decide whether a business case is required to support the investment. If so, who will develop the business case and how will costs be calculated, such as the: • Costs of the software vendor, including licensing, implementation and subscriptions • Implementation team costs • Technology costs, including adequate wi-fi, eNRMC system devices (fixed devices, mobile devices, printers) and the implications for existing medicine trolleys, and the type and size of any new trolleys. See Chapter 11 for information on developing a business case		

Activity	✓	Comments
Decide the procurement strategy for the eNRMC system, including: • A formal tender process • Obtaining quotations from a number of software vendors • Selecting a preferred software vendor • Any contractual requirements. See Chapter 11 for information about procurement		
Seek approvals to start more detailed planning, including funding commitments		
Review and fine-tune your vision statement developed in worksheet B.WS1		

GP = general practitioner; MAC = Medicines Advisory Committee

B.WS4

Choose an eNRMC system implementation approach

Activity	✓	Comments
To assess the best way to proceed with an eNRMC system implementation, consider: • Your strategic priorities and plans • How residential care technology solutions will support your strategic priorities • The residential care technology solutions available in the marketplace • The extent to which these solutions include eNRMC medication management capabilities that support effective medication safety • Whether the preferred solution will be ADHA conformant within an acceptable time frame • Where a system is already in place, the perceived benefits and risks associated with retaining and extending this system		
Assess how the eNRMC system will best support the residential care facility's strategic direction, particularly in terms of the mix of residential care technology solutions that are in place or are planned. Seek input from the chief executive officer and executive, including the person who is responsible for IT services		

Activity	✓	Comments
Assess the market for eNRMC systems and the extent to which the available solutions will support your strategic direction		
Assess the recommendations for a separate or integrated eNRMC system		
Where an integrated eNRMC system is preferred, assess the integration points required to effectively support medication safety		

ADHA = Australian Digital Health Agency

B.CL1

Checklist for ensuring that the technology is fit for purpose

On-site technology. Check:

☐ The eNRMC system itself

☐ The residential care facility's existing wi-fi and telecommunications equipment, including eliminating synchronisation and reception issues

☐ The devices connected to the eNRMC system.

This is important so that consumers receive their medicines on time.

When selecting devices connected to the eNRMC system, consider:

☐ The size of the medication trolley

☐ Room access requirements, such as access to consumer rooms, communal areas, locked medication rooms, and staff areas and offices

☐ Height adjustability, and weight considerations for removable devices

☐ Infection control requirements

☐ Screen size and screen resolution that ensures appropriate font size for administering medicines, and supports high-quality consumer photographs and pictures of medicines

☐ Touch-screen responsiveness (including while wearing gloves or other personal protective equipment)

☐ How devices are to be used in the workflow – for example, one residential care facility visited used personal digital assistants that restricted access to specific consumers' eNRMCs on specific devices, which changed according to the role (and responsibilities) of the person logged onto the system.

B.WS5

Implement your eNRMC system from planning to go-live

Determine whether your eNRMC system needs to incorporate the following components and the time required for implementation. Develop your plan. Part C provides more information about each of these components.

Determine how much time will be required for implementation	Required (Y/N)	Comments
Is a formal procurement required?		
Consider the availability of funding or grants to defray costs associated with implementation		
If a procurement is required, discuss the additional time for a procurement process with your procurement advisor		

Determine how much time will be required for implementation	Required (Y/N)	Comments
Is software development or integration required?		
If software development or integration is required, discuss the time requirements with your software vendor. This information should be a part of your formal tender requirements if you are using this process		
Will your implementation involve multiple sites?		

Determine how much time will be required for implementation	Required (Y/N)	Comments
If yes, consider that a multi-site implementation will require: • A reasonable period of time for the lead-site implementation • Time for evaluation and refinement • Time for the rollout to all other sites. The rollout time frame will depend on the number of residential care facility sites and the resources available		
For large residential care providers, you will need extra time for regrouping, refresher training, avoiding burnout and extra corporate reporting requirements		

Determine how much time will be required for implementation	Required (Y/N)	Comments
Develop your plans		
Based on the above, estimate the additional time required and develop staged plans. Stages could include: • Planning • Procurement • Software development • Integration development • Lead-site implementation • Lead-site evaluation • Refinement of the eNRMC medication management solution and materials • Rollout • Post-implementation review		
Critically review the lessons associated with Australian residential care facility eNRMC system implementations (see Section 5.3) when developing your project plans		

Determine how much time will be required for implementation	Required (Y/N)	Comments
Develop project plans for your eNRMC system implementation		
Communicate your plans with the wider team. Your project plans should communicate what is being proposed. If your colleagues do not understand your plans, you will need to add more detail or give examples		

B.WS6

Manage the day-to-day operation of the eNRMC system

Activity	✓	Comments
Establish the day-to-day (operational) governance for your eNRMC system, including new or modified terms of reference for governance groups		
Determine the human resources required to support your eNRMC system on an ongoing basis. Try not to underestimate these requirements. Discuss these with your software vendor, and obtain executive commitment to fund the required resources		
Establish procedures for managing changes to your eNRMC system, including: • Governance approvals for all proposed eNRMC system changes before the changes happen • Maintenance, upgrades and enhancement of the eNRMC system, in collaboration with your software vendor • Management and testing of software upgrades, in discussion with your software vendor		

Activity	✓	Comments
Establish procedures for managing the ongoing provision of training, including: • Refresher training • Targeted training • Training associated with enhancements or software upgrades • Training materials • Training environment		
Rehearse and refine eNRMC system downtime arrangements (also see worksheet B.WS8)		

B.WS7

Optimise your eNRMC system through continuous quality improvement

Activity	✓	Comments
Develop a work program for improving medication safety based on residential care facility experiences and priorities, and provide to the MAC for review and approval		
Monitor progress against the work program and report to the MAC at regular intervals		
Include the regular review of system data to inform future work programs		

Activity	✓	Comments
In the work programs, review how well the eNRMC system supports: • Medication management workflow • Effective monitoring of medicines • Ease of access to data and the effectiveness of operational dashboards, standard reports, ad hoc reports and data extracts. Any problems with support for system workflows should be identified and included in future work programs		
Residential care facilities should encourage software vendors to outline their organisation's approach to incorporating continuous quality improvements into their future iterations of their eNRMC systems and suggested workflows: • Will new enhancements be shared with existing residential care facility customers? • Does the vendor support the residential care facility's proposed system enhancements?		

MAC = Medicines Advisory Committee

B.WS8

Plan for downtime

Activity	✓	Comments
Develop an end-to-end map from each device to show how they connect to each other. This includes: • Data communications equipment • Servers • Other equipment connected to the eNRMC system or the hosted data centre(s)		
Develop the end-to-end connectivity map for any interoperable connectivity to other systems, such as the clinical documentation system		
Identify the points of failure at each step in the connectivity map, including the implications of failure for the use of the eNRMC system		

Activity	✓	Comments
With your technology support team, discuss and identify mitigation strategies and, where possible, implement strategies that will reduce the risk of failures		
Discuss the resilient features of your eNRMC system with your software vendor, including the availability of resilient technologies such as replication failover and dual data centres		
Identify mitigation strategies (e.g. ability to print a paper-based copy of the eNRMC and past record of administration for use during eNRMC system unavailability)		

Activity	✓	Comments
Develop your downtime procedures with your software vendor. Procedures should consider: • The seriousness of the event that triggers the downtime, and an appropriate response • Any timings that would increase the seriousness of the event (e.g. immediately before a medication round) • Who (or nominated position) that decides when to invoke downtime procedures • What the whole workforce should do before, during and after the downtime, including the required workflows and documentation • Changes to the downtime procedure based on how long the system is down (e.g. where the volume of downtime data exceeds your ability to update the eNRMC system) • Any shift-based dependencies (e.g. when the person completing paper documentation is a different person from the one updating the eNRMC system)		

Activity	✓	Comments
Schedule regular rehearsals (tabletop exercises) of your downtime procedures to support identification of training gaps and help build staff confidence		
Review and update your downtime procedures after each downtime event		
Plan to print paper-based copies of the eNRMC		
Determine the circumstances when a paper copy of the chart or medication administration record can be printed (e.g. when consumers need to be transferred to hospital)		
Ensure that printed paper-based copies of the eNRMC incorporate the safety features of the NRMC by mapping the safety features against the paper chart produced by your eNRMC system		
Obtain MAC review and advice on the extent to which the printed paper-based copy of the eNRMC effectively supports medication safety, particularly when transferring care to another provider		

MAC = Medicines Advisory Committee; NRMC = National Residential Medication Chart

B.WS9

Summary of activities for Part B, and their status of completion

Activity	Complete (C), partially complete (PC) or not commenced (NC)	Outstanding action summary
After reading through Part B and working through the worksheets, document the status of completion for each of the activities listed in the boxes below.		
B.WS1		
B.WS2		
B.WS3		
B.WS4		
B.WS5		
B.WS6		
B.WS7		
B.WS8		

Appendix C
Worksheets for Part C

C.CL1 Risk management for an eNRMC medication management project

Risks that may apply to your project:

- ☐ Lack of executive-level sponsorship
- ☐ Lack of local residential care facility 'champions', leadership and commitment from potential eNRMC system users and managers
- ☐ Insufficient planning
  - financial – trying to implement eNRMC medication management 'on the cheap'
  - technical – lack of sufficient wi-fi and devices at the point of care
  - human – failure to engage senior stakeholders
- ☐ Inadequate change management
- ☐ Failure to adequately engage with and involve end users
  - not relieving busy staff of some routine duties so they can properly contribute to the project
  - not addressing resistance to change and issues raised by staff
- ☐ Insufficient project team resources
  - team size too small to cover all aspects of the eNRMC medication management project
  - lack of multidisciplinary skills
  - part-time project manager juggling the eNRMC medication management implementation with other operational commitments
- ☐ Insufficient time or resources allocated to training, particularly for prescribers
- ☐ Lack of ICT involvement or funding, resulting in inadequate technology infrastructure for the eNRMC system to be used effectively
- ☐ Inadequate interfaces between the eNRMC system and third-party systems such as the clinical documentation system(s) in use at residential care facilities
- ☐ Lack of business continuity planning to support around-the-clock access to the electronic medication records

- ☐ Failure to obtain post-implementation feedback from staff to make the required system changes before rollout
- ☐ Insufficient staff for business-as-usual activities
- ☐ Pushback from prescribers because of the additional time needed to prescribe using an eNRMC system
- ☐ Lack of integration between the eNRMC system and third-party clinical documentation system(s), requiring workarounds
- ☐ A protracted implementation that fails to achieve the required critical mass in a reasonable time
- ☐ Inadequate level of health literacy among staff

C.WS1

Develop and describe your eNRMC medication management project governance

Activity	✓	Comments
Develop your eNRMC medication management project governance model in consultation with senior stakeholders. How many levels of governance will you require? How will the eNRMC medication management project governance report into corporate governance arrangements? Will you have a reference group to assist the project team with expert opinion? Where will your MAC(s) fit in, as it is responsible for approving all medicines-related content?		
Use a method – such as a responsible–accountable–consulted–informed (RACI) matrix – to help you define responsibilities and relationships		
Develop terms of reference for the proposed governance groups		

Activity	✓	Comments
Develop and maintain a risk and issue register, if you do not already have one. Once a risk has materialised, it is no longer a risk but an issue that will require management and mitigation. See checklist C.CL1 for help with identifying risks		
Determine your risk classification system and get it agreed by your project sponsor		
Develop or update your corporate reporting template to include: • Critical project milestones and tracking against these • Priority 1 risks, issues and mitigation strategies • Budget tracking		
Determine which project control templates you will use. For example: • A project initiation document • Quality plans • Communication plans • End-stage reports • Lessons learned		

MAC = Medicines Advisory Committee

C.WS2

Procure an eNRMC system

Activity	✓	Comments
Developing the tender procurement		
If you are developing a business case, decide whether it will be a one- or two-stage process		
Develop your business case, and submit it to the chief executive and the eNRMC system governance group for review and endorsement		
Discuss how to proceed with your procurement advisor before developing a procurement plan, if you are undertaking a formal procurement		
Develop a procurement template, if you do not have one. See checklist C.CL2 for help with what to include		

Activity	✓	Comments
Seek legal advice from a legal practitioner with expertise in ICT-related procurements, to develop and review the contractual terms and conditions that you will include in the procurement pack		
Establish the tender evaluation panel so it can participate in validating the business and technical requirements		
Develop the business and technical requirements for your eNRMC system in conjunction with the implementation team, stakeholders and members of the tender evaluation panel		
Seek sign-off on the business and technical requirements from the project governance		

Activity	✓	Comments
Choosing a software vendor		
Review tender responses, scoring responses in line with the tender evaluation plan to shortlist respondents		
Invite shortlisted respondents to clarify their responses and demonstrate their eNRMC system to the tender evaluation panel, the project team and other invited stakeholders		
Consider using formal demonstration scenarios that attendees can score (aligned to the procurement plan). See worksheet C.EX1 for example demonstration scripts		
Determine the preferred tenderer and seek approval from the chief executive to negotiate the contract		
Negotiate the contract with the preferred tenderer, with assistance from your legal practitioner		
Start to plan your eNRMC system implementation		

C.CL2

Sample documentation checklist for the content of a tender

General conditions

- ☐ Invitation
- ☐ Enquiries by respondents
- ☐ Language and currency
- ☐ Affirmative action
- ☐ Inconsistencies
- ☐ Time frames
- ☐ Reporting
- ☐ Communications

Submission preparation

- ☐ Respondents to inform themselves
- ☐ Respondents to meet costs

Submission lodgement

- ☐ Lodgement of submissions
- ☐ Copies
- ☐ Validity period

Managing submissions

- ☐ Improper assistance or collusive tendering
- ☐ Confidentiality
- ☐ Disclosure of information

Evaluation process

- ☐ Compliance
- ☐ Content and format requirements
- ☐ Conditions of participation
- ☐ Essential requirements
- ☐ Preferred respondent
- ☐ Submission evaluation criteria
- ☐ Evaluation method

Statement of requirement

- ☐ Introduction
- ☐ Background
- ☐ Context
- ☐ Objectives
- ☐ Requirements
- ☐ Essential requirements
- ☐ Optional requirements

C.EX1

Example tender demonstration scenarios

Scenario	Action	Requirement identification no.*	Linked requirement
Jane Doe, a temporary consumer for respite care, date of birth 9/10/1931, female, similar-sounding name to another resident. Jane has been a smoker for 30 years and has chronic airway limitation and hypertension	Create a temporary consumer profile for Jane, showing the similar-sounding name alert	10	None
Jane is taking Tritace (ramipril) 5 mg mane, clarithromycin 250 mg bd (for chronic bronchitis) and Ventolin 2 puffs, when required, for shortness of breath. These medicines should be continued during her respite care	Show how an RN can create a Best Possible Medication History. Show how the system converts a medicine name entered into one that aligns with active ingredient prescribing legislation. Show how the medicines are not available for administration until they have been ordered by a prescriber. Show how Tall Man lettering conventions are used in the system. Show the relevant medicines being administered at the next medication round	19	Only accepted Australian generic names of all medicines are to be used, as well as Australian units of measurement to indicate dosage. Prescribers should still be able to select a medicine based on trade name, but this will convert to the generic name once selected in this example
On prompting, Jane advises that she is also taking St John's wort (which is a complementary medicine)	Using the search function, locate St John's wort and add this to the consumer's Best Possible Medication History	47	Search function should be provided to help staff efficiently locate the correct name of the medicine

Scenario	Action	Requirement identification no.*	Linked requirement
Jane indicates that she is also allergic to penicillin. She had urticaria and wheezing after taking oral penicillin 20 years ago. She is on a gluten-free diet because of concerns about gluten sensitivity	Attempt to close the medication record, and show how the system alerts the user to record allergy status and does not allow the user to close the record without first doing this. Record Jane's penicillin allergy in the system	33	Record the details for allergies or ADRs: • Known • Medicine class or family • Reaction • Date • Recorded by • Nil known • Unknown. Other requirements: • Perform reverse allergy checking on Jane's current medicines • Code the allergy to belong to the class of medicines. The medicine order cannot be closed if allergy status is not completed
	Show how Jane's allergy appears to users of the system	6	Create, amend and view consumer details in the eNRMC system for the following information: • Allergies, or none known • ADRs
	Point out where Jane's name, date of birth, gender and similar name alert appear on the screen	9	Display the consumer's name, date of birth, gender and similar name alert on every screen view

Scenario	Action	Requirement identification no.*	Linked requirement
Tom is a new resident	Show how a new consumer profile is created, including past medical history, allergies and current medicines, so that the relevant medicines can be administered during the next medication round. Show how Tom's local GP is alerted to review the Best Possible Medication History and create medicine orders in Tom's profile. Show how the GP prescribes new medicines, requiring an appropriate indication (e.g. psychotropic medicine), and changes the dose of an existing medicine. Show the following clinical decision supports: • Drug-to-allergy checking • Drug-to-drug checking • Dose range checking • Therapeutic duplication. Show the GP overriding the alerts, providing an appropriate override reason. Show how the override alerts are displayed to the servicing pharmacy supplying the medicines, and the nurse when administering the medicines. Show the servicing pharmacy adding administration, handling and storage instructions to the medicine orders, and how this information is made available to the nurse when administering medicines.	25	Australian medicine reference databases, searchable by generic and trade name, should be accessible from the system interface. Dose changes should result in the original medicine order being cancelled and a new medicine order being created. Indications offered for selection should be appropriate only to the medicine being prescribed. Alert override reasons should include selection from a picklist plus qualifying free text

Scenario	Action	Requirement identification no.*	Linked requirement
Dr Edward Goode is a local GP with numerous consumers at the residential care facility	Show how the system presents Dr Goode with a list of his – and only his – consumers.	20	
	Show how Dr Goode knows when medicine orders need review, including those that are due to expire. Show how Dr Goode reviews and reissues the medicine orders.	39	
	Show how Dr Goode communicates electronically with the residential care facility nurses or the servicing pharmacy.		
	Where PBS prescriptions are required, show how Dr Goode is advised to print and sign the required prescriptions.		

ADR = adverse drug reaction; bd = twice daily; g = gram; GP = general practitioner; h = hour; mane = in the morning; mg = milligram; PBS = Pharmaceutical Benefits Scheme; RN = registered nurse

* Relates to the tender specifications

C.WS3

Complete an implementation planning study (IPS)

Activity	✓	Comments
Review and refine checklist C.CL3, in conjunction with your software vendor. Your software vendor may have their own methodology developed specifically for their eNRMC system		
Work collaboratively with your software vendor in developing the IPS content. Review Section 5.3 to ensure that the IPS addresses the experiences of eNRMC system implementations in Australian residential care facilities		
Approach the project governance groups to review the IPS, and address their questions before proceeding		

C.CL3 Implementation planning study checklist

Typically, an implementation planning study comprises:

- ☐ The scope of the eNRMC system implementation
- ☐ A detailed eNRMC system implementation plan, including
  - all implementation tasks
  - software development activities
  - configuration and build activities
  - details of the lead-site eNRMC system implementation
  - eNRMC system rollout plans
- ☐ Resources required from the software vendor and the residential care facility
- ☐ Project structures – governance, relationships, escalation processes
- ☐ Project controls, including
  - scope and change management
  - configuration management
  - risk management
  - issue management
- ☐ Technical infrastructure requirements, including the number of environments – this is likely to include production, testing and training environments, and an eNRMC system environment management plan
- ☐ Capacity requirements, including number of users, user concurrency and data capacity
- ☐ Corporate reporting requirements and achieving visibility across geographically dispersed facilities
- ☐ A gap analysis of the functional requirements and a plan to address the gaps through software development
- ☐ An analysis of any interfaces required and a plan to deliver the interfaces
- ☐ Project team eNRMC system training so they can better contribute to the planning process, and have greater understanding and ownership of the eNRMC system and related decision-making
- ☐ Goal-state process mapping – how the medication management workflow will operate
- ☐ Acceptance criteria for the eNRMC system
- ☐ A traceability framework
- ☐ Education about the eNRMC system, and a user training strategy and plan
- ☐ A data migration strategy and plan, if required

- ☐ A testing strategy and plan, including
  - user acceptance testing
  - non-functional testing
  - interface testing
  - integration or end-to-end testing
- ☐ Operational support and transition to support plan
- ☐ Go-live support
- ☐ A list of all project deliverables
- ☐ Contract payment milestones
- ☐ Service-level agreements with the software vendor, and ICT service providers
- ☐ Any legislative and policy requirements
- ☐ A responsibility matrix defining the responsibilities of the parties.

C.WS4

Develop your project communications plan

Activity	✓	Comments
Develop the key messages for communications during the project. Consider the material discussed in Chapter 5 in developing your key messages		
Complete the communications plan in worksheet C.WS5		
Develop draft communications collateral, particularly for initial communications, and have these approved through governance committees		
Schedule communications activities within the overall implementation plan		
Describe the overall goals, objectives, outcomes and schedule for eNRMC medication management communications, including the: • Target audiences • Messages to be addressed through communications • Communication modes or tools to be used at each stage • Timing of communications materials • Frequency of communications. See worksheet C.WS5 for help with this task		

C.WS5

Create a communications plan template

Consider using a responsible–accountable–consulted–informed (RACI) matrix to determine who will need what information and when. An example of a communications plan is provided below.

Target audience	Communication type*	Stakeholder (primary or secondary)	Responsibility	Message	Communication tool†	Timing§	Frequency#
All staff	Project announcement	Both	Project team	EMM is coming soon	Posters	To align with implementation plans	Once at the outset for all facilities. Repeated again for all facilities following the lead-site implementation. Repeated at each residential care facility before the local implementation
All staff	Project announcement	Primary	Prescribers, pharmacists, registered and enrolled nurses involved in supporting eNRMC system project implementation	Medication safety	Posters, CEO newsletter	Three months before go-live at each residential care facility	Monthly update

Target audience	Communication type*	Stakeholder (primary or secondary)	Responsibility	Message	Communication tool†	Timing§	Frequency#
Prescribers	Project update	Primary	Local residential care facility MACs	Medication safety	Newsletters, GP practice presentations and demonstrations	Two months before go-live	Monthly

CEO = chief executive officer; GP = general practitioner; MAC = Medicines Advisory Committee

* For example, project update and project announcement

† For example, email, phone, face to face and meetings

§ Project stage or data range during which communication applies

\# Frequency of contact – for example, once, daily, weekly, fortnightly or monthly

C.EX2

Example traceability matrix

Business requirements		Functional requirements		Priority	Test case ID no.
ID no.	**Case**	**ID no.**	**Case**		
BR_1	Prescribing module	FR_1	Regular medicines	High	TC#001 TC#002
		FR_2	Schedule 8 medicines	High	TC#003 TC#004
		FR_3	Psychotropic medicines	High	TC#005 TC#006
BR_2	Administration module	FR_4	Prescribed medicines	High	TC#007 TC#008
		FR_5	Nurse-initiated medicines	High	TC#009 TC#010
		FR_6	PRN medicines	High	TC#011 TC#012
		FR_7	Missed doses	High	TC#013 TC#014

C.EX3

Example test script

Test script # 1
Description: New medicine order

Script reference	Procedure	Expected result	Actual result	Pass or fail		Criteria and reference	Comments
1.01	Select resident	Consumer record displayed	Consumer record displayed	☑ Pass	☐ Fail	Enter consumer's name in the fields available, search and select resident	
1.02	Select the 'new medicine order' function	Prescribing function displayed	Prescribing function displayed	☑ Pass	☐ Fail		
1.03	Select the required medicine by typing the first few letters of the medicine until the required medicine is displayed	Medicine requested displayed	Required medicine not in the list	☐ Pass	☑ Fail	Enter erythromycin	Medicine not found. Check content of medicine entries in the database and re-run script

C.EX4 Break-testing examples

Break-testing examples might include:

- ☐ Entering text where numbers are expected
- ☐ Entering zeroes to ensure that division by zero calculation errors are captured
- ☐ Entering data that are outside the expected range of the required data items
- ☐ Entering large amounts of text into free-text boxes
- ☐ Completing events out of sequence
- ☐ Undoing or partially undoing data entry sequences
- ☐ Using special characters and control codes in data entry fields.

C.EX5 End-to-end testing examples

End-to-end testing may include passing medicines-related data from the eNRMC system to the residential care facility clinical documentation system, including, but not necessarily limited to:

- ☐ Consumer's weight details recorded in the eNRMC system successfully added to the third-party weight monitoring charts
- ☐ Blood glucose level on administration of insulin successfully added to the third-party insulin charts (where indicated)
- ☐ INR results on administration of warfarin successfully added to the third-party INR charts
- ☐ Administration of hydration successfully added to the third-party fluid balance charts
- ☐ A falls risk assessment triggered in third-party systems when prescribing medicines known to increase falls risk
- ☐ Care plans for medicines-related considerations (for example, swallowing difficulties, resistive to medicines) triggered in third-party system whenever the considerations are updated in the eNRMC system
- ☐ Any prescription changes successfully added to the clinical handover and progress notes functions of the third-party system.

C.WS6

Consider additional implementation activities

Activity	✓	Comments
Involve your ICT team and local IT providers in eNRMC system project governance to ensure that the required robust technical infrastructure is in place		
Define the central and local technology components that are required, including: • eNRMC medication management environments • Resilient technology that ensures around-the-clock operation • Wi-fi, and mobile and fixed device requirements at the facilities. Some of these requirements, particularly the central eNRMC medication management environments, might have been determined during the implementation planning study stage		
Validate the adequacy of your technology components by reviewing the business continuity planning arrangements developed in Chapter 9 and worksheet B.WS8. Where the downtime arrangements were developed based on existing technology, such arrangements may need to be reworked to take account of more detailed technology requirements identified at this stage		

Activity	✓	Comments
Where software development is included, agree to the detailed specifications with your software vendor. Software development will require UAT based on test scripts. C.EX3 includes example test scripts. Software development and UAT can take a long time, so ensure that you have adequate time in the project schedule		
Make project governance aware of the risks associated with software development and agree to the required mitigation strategies		
Establish the types of eNRMC system environment that will be required, and how these will be managed. In particular, clarify how the training environment will be refreshed as the eNRMC system is implemented at each facility		

Activity	✓	Comments
Plan how the non-functional requirements will be tested with your ICT provider and your software vendor		
Establish the extent of the configuration required from your software vendor and allocate responsibilities for these activities. If configuration is a residential care facility or servicing pharmacy responsibility, the allocated roles will require up-front guidance and training. The requirement for structured prescribing to be configured so that free-text prescribing is actively discouraged, and the implications of structured prescribing on the utility of existing reports, are especially important		
Where interoperability is needed, include the activities and the sequences of both software vendors, including interface testing and end-to-end testing in the project schedule		

Activity	✓	Comments
Define, schedule and carry out eNRMC system break-testing and a user acceptance process. Break-testing should occur before UAT testing starts. Break-testing examples are in C.EX4		
Develop test cases. Your software vendor may be able to provide some, but ensure that the predefined test cases are appropriate for a residential care facility workflow. C.EX3 is an example test script		
Incorporate all of the above activities into the project schedule		

UAT = user acceptance testing

C.CL4 Lead-site eNRMC system implementation checklist

Governance activities

- ☐ Governance structures are in place and operating effectively
- ☐ Project team for the eNRMC system is established
- ☐ Project schedule for the eNRMC system has been developed and signed off
- ☐ Lead-site residential care facility is actively participating in the implementation planning
- ☐ The eNRMC software vendor is ready to provide system and user support

Implementation planning activities

- ☐ Implementation planning study has been completed and signed off
- ☐ Change management plan has been developed and signed off
- ☐ Any evaluation framework has been developed and signed off
- ☐ Approach to education and training has been developed and endorsed, and training scheduled
- ☐ Communications plan has been developed and signed off
- ☐ Test strategy (including user acceptance testing [UAT], non-functional testing, interface testing and end-to-end testing) has been developed and signed off
- ☐ Business continuity plans have been developed, tested and endorsed
- ☐ Draft go-live plans are developed (to be finalised closer to go-live)

Technical infrastructure activities

- ☐ Central technical infrastructure requirements (including high availability, and the number and type of eNRMC system environments) have been agreed and signed off
- ☐ Any central technical infrastructure has been acquired and built
- ☐ Desktop infrastructure requirements specific to each residential care facility (including devices, mobile devices, printers and wireless networks) have been identified and signed off
- ☐ Non-functional requirements have been tested and signed off
- ☐ Desktop infrastructure has been acquired, installed and tested (in line with implementation rollout plans) and signed off
- ☐ Business continuity testing protocols have been developed, tested and endorsed

Software development activities, where they are required

- ☐ Changes required for the selected eNRMC system to meet the business requirements have been identified and signed off
- ☐ Interface specifications between the eNRMC system and third-party systems have been developed and signed off
- ☐ Any developments to the required software have been undertaken
- ☐ Traceability matrix has been completed and signed off
- ☐ UAT scripts have been developed and validated as representing the business requirements
- ☐ UAT has been conducted, and the eNRMC system production software release has been signed off
- ☐ Interface testing and end-to-end testing have been conducted and signed off

Content configuration activities

- ☐ Access privileges to the eNRMC system have been configured and tested
- ☐ Access to medication reference information has been tested

Final go-live activities

- ☐ The eNRMC system has been identified as fit for purpose and signed off by governance structures, including:
  - communication materials to be used during the go-live period are confirmed
  - education and training materials are confirmed
  - usage policies for the eNRMC system are in place
- ☐ Go-live team is rostered on and has completed all training
- ☐ Go-live plans are finalised and approved

C.WS7

Post-implementation review (PIR)

Activity	✓	Comments
Identify what worked well, what did not and what needs to change		
Include the proposed changes to both the eNRMC system and the implementation approach in the project schedule		
Perform another round of user acceptance testing if there are software changes or workflow changes, if required		
Update your implementation materials and activities – for example, communications plans and training collateral		
Present the finalised PIR and resulting changes to the lead site for approval by the relevant governance groups		

C.WS8

Summary of activities for Part C, and their status of completion

Activity	Complete (C), partially complete (PC) or not commenced (NC)	Comments
After reading through Part C and working through the worksheets, document the status of completion for each of the activities listed in the boxes below.		
C.CL1		
C.WS1		
C.WS2		
C.CL2		
C.EX1		
C.WS3		

Activity	Complete (C), partially complete (PC) or not commenced (NC)	Comments
C.CL3		
C.WS4		
C.WS5		
C.EX2		
C.EX3		
C.EX4		
C.EX5		
C.WS6		
C.CL4		
C.WS7		

Appendix D Example of eNRMC system reporting capability

The Australian Government Department of Health has mandated the use of quality indicators as part of the National Aged Care Mandatory Quality Indicator Program (QI program) (see Resources). A range of clinical areas are covered by the quality indicators, and medication management is one of them. 'Percentage of care recipients who received antipsychotic medications' is one of the indicators that falls within the medication management area and is relevant to, although not the basis for, the example provided here. As quality indicator reporting requirements continue, residential care facilities will need to consider how their eNRMC systems can be optimised to support ongoing reporting requirements.

Using defined data elements (for example, drop-downs and picklists), reports can be more easily compiled and tracked. Tables 4–6 are fictional examples of the types of information that should be generated from eNRMC system information inputs for ongoing monitoring and reporting.

The fictional report highlights some of the key indicators that could be reported. The report should be provided to the Medicines Advisory Committee (MAC) or other medication safety governance group. The report could be used to generate an action plan to address potentially inappropriate practices and medicines use.

As nationally agreed indicators for use in residential care facilities become available, these will also need to be included and monitored as part of the ongoing governance within the facility. An additional column could be added to the table to facilitate national comparisons if these become available.

Comparing medicines use trends with adverse event outcomes – such as falls rates and medicines-related hospital admissions – will provide a more meaningful translation of data.

Table 4 shows overarching indicators for PRN ('as needed') psychotropic medicine use in the residential care facility. Row 3, in orange, highlights an area that would normally precipitate a plan of action for the residential care facility.

Table 4: PRN psychotropic medicines report for Green Acres – overarching indicators

Item number	Measurement	*n*	*N*	%
1	Consumers who were prescribed a PRN psychotropic medicine between 1/1/20 and 30/6/20	50	100	50
2	Consumers whose indication was documented as BPSD	30	50	60
3	Consumers who did not have a PRN psychotropic indication documented by the prescriber	20	50	40
4	Consumers who had a PRN psychotropic indication documented as BPSD and whose consent status was documented as 'current'	15	30	50
5	Consumers who had a PRN psychotropic indication documented as BPSD and whose consent status was documented as 'unavailable' or 'not current'	0	0	0
6	Consumers whose indication was documented as BPSD and who have received a change in dose from the preceding authorisation	10	30	33.3

BPSD = behavioural and psychological symptoms of dementia; PRN = pro re nata (Latin for 'as needed/when required')

A detailed report is sought from the eNRMC system about information found in row 3, Table 4 to provide more detail on the PRN psychotropic prescriptions in the service (see Table 5).

Table 5 shows more detail about which consumers were prescribed PRN psychotropic medicines and, for each of these, who has their consent documented as 'current'. The rows highlighted in orange show two consumers for whom there is no valid consent documented.

Green Acres MAC decides to seek more information about the medications administered and number of times a prescription has been dispensed by the pharmacy for each of those consumers listed (see Table 6).

Table 5: Consumers who were prescribed PRN psychotropic medicines at Green Acres between 21 January and 4 March 2020

Line number	Consumer name	Prescription commencement date	Prescriber	Medicine name	Form	Strength (mg)	Dose	Dose change from previous authorisation		Current consent		
										No	Unavailable	Yes
1	J Yonner	21 January	Dr Callaghan	Risperidone	Tablet	1	D	Yes	Increase	✓		
2	L Yong	25 January	Dr Zammit	Olanzepine	Tablet	2.5	D	No	n/a		✓	
3	S Ngyuen	25 January	Dr Dogood	Aripiprazole	Tablet	10	D	Yes	Decrease	✓		
4	K Mickiewicz	26 January	Dr Callaghan	Haloperidol	Tablet	0.5	D	No	n/a			✓
5	H Okonedo	17 February	Dr Dogood	Lorazepam	Tablet	0.5	D	No	n/a	✓		
6	M Tariq	4 March	Dr Zammit	Carbamazepine	Tablet	100	D	Yes	Decrease		✓	

n/a = not applicable; PRN = pro re nata (Latin for 'as needed/when required')

Summary information

Average count of administrations per week: 5

Maximum number of repeat prescriptions for the specified period: 2

Number of times repeat prescription authorised: 2

Table 6 shows a more detailed report for one of the consumers for whom there was no current consent documented in the system. From this report, Green Acres MAC decides on the following plan of action.

Table 6: Report for L Yong's PRN psychotropic administration for 1 Jan – 30 June 2020

Date of administration	Time of administration	Authorised by
25 January	08:00	RN Watson
28 January	10:00	RN Olivieria
29 January	08:30	RN Chan

MAC Feb 2021

Item #3 – Action Plan re L Yong PRN olanzapine use

1. Chair of the MAC to write to Dr Zammit requesting review of L Yong PRN olanzapine and if indicated to continue – informed consent to be documented in the consumer's residential care facility record
2. Residential care facility manager to inform consumer's family that a request for review to Dr Zammit has been initiated
3. RN Watson to review any unmet care needs for L Yong. Focus on non-pharmacological options as first-line treatment
4. RN Chan to deliver an in-service to all care staff about non-pharmacological options for managing behavioural and psychological symptoms of dementia. Scheduled for first week in March
5. Residential care facility manager to present an update on these actions at the March MAC meeting

In this fictitious example, having broader indicators and information that could be selected from picklists in the eNRMC system supported reporting of medicines through to the consumer level. This allowed the MAC at the facility to seek more information and ensure that a plan of action was in place to review L Yong's ongoing prescription and informed consent for PRN olanzapine.

Ongoing review and considerations for improvements are all elements demonstrating continuous quality improvement.

Glossary

Term	Explanation
Active Directory	A Microsoft product that manages permissions and access to networked resources.
Active ingredient prescribing (AIP)	An initiative to support the uptake of generic and biosimilar medicines, and improve the health literacy of consumers and prescribers around the active ingredients in medicines.[9]
ADHA conformant	eNRMC systems that are certified as being conformant with the Australian Digital Health Agency electronic prescribing specifications.[1] These specifications are referred to as the Electronic Prescribing Conformance Profile in this guide. Certification is a mandatory requirement to electronically prescribe in residential care facilities.
antimicrobial stewardship	Efforts by an organisation to reduce the risks related to increasing antimicrobial resistance and to extend the effectiveness of antimicrobial treatments. It can include a broad range of strategies, such as monitoring and reviewing how antimicrobials are used.[18]
BCP event	A system or partial system failure requiring business continuity plans to be implemented and used.
Best Possible Medication History (BPMH)	A list of all the medicines a patient is using at presentation. The list includes the name, dose, route and frequency of the medicine, and is documented on a specific form or in a specific place. All prescribed, over-the-counter and complementary medicines should be included. This history is obtained by a healthcare provider working within their scope of clinical practice who interviews the patient (and/or their carer) and is confirmed, where appropriate, by using other sources of medicines information.[16]

Term	Explanation
break-testing	Unstructured testing in which the tester tries to make the system fail.
bugs	Errors in software that need to be fixed (bug fixes).
care worker	Any otherwise unregulated person who is engaged, as part or all of their role, to meet any assessed needs of a person's care according to a care plan that has been developed by a registered nurse or clinician, irrespective of the setting in which care is delivered (e.g. a person's home, a residential care facility) and how a worker is titled (e.g. personal care worker, assistant in nursing) or employed (e.g. full time, casual, independent contractor).[17]
clinical decision support	Assistance with clinical decision-making. In electronic medication management systems, this typically includes drug interaction checking and drug-to-allergy checking.
clinical documentation system	Any electronic system that supports clinical documentation and workflow in residential care facilities, such as progress notes, care plans, observations and task lists. Electronic medication management systems may be a module of these or completely separate.
clinician	A healthcare provider, trained as a health professional, who is a registered practitioner. Clinicians may provide care to consumers within residential care facilities as an employee, a contractor or a credentialed healthcare provider, or under other working arrangements. Practitioners who would be authorised to have access to the eNRMC system include nurses, nurse practitioners, enrolled nurses, medical practitioners, pharmacists and other registered clinicians who provide health care, and students who provide health care under supervision. (Definition adapted from the National Safety and Quality Health Service Standards.[18])
configuration eNRMC system environment	A pre-production eNRMC system database environment where the system is configured (after testing), before entering the production environment.
conformance profile	*See* ADHA conformant
cytotoxic	Toxic to cells, cell killing. Any agent or process that kills cells. Chemotherapy and radiotherapy are forms of cytotoxic therapy.[22]
dashboard	A dynamic reporting tool for reporting key performance indicators, where the reporting display changes as the data within the system change.
dose administration aid	A device or packaging system such as blister packs, bubble packs or sachets for organising doses of medicines according to the time of administration.[4]

Term	Explanation
downtime medication chart	A paper medication chart used for prescribing and administering medicines during the period in which the eNRMC system is unavailable for use. The medication charts are pre-populated with all the medicines that have previously been authorised by the consumer's regular prescriber for administration. *See also* National Residential Medication Chart
electronic National Residential Medication Chart (eNRMC)	A comprehensive and accurate electronic record of an individual consumer's medicines for people living in residential care facilities. Information requirements within this record are (at a minimum) consistent with the Instrument of Approval for PBS National Residential Medication Charts.[13]
eNRMC medication management system	In this document, eNRMC medication management systems are ADHA conformant. *See also* ADHA conformant
eNRMC medication management system user	Any person who will be using the eNRMC medication management system once it is implemented in a residential care facility. These will be clinicians responsible for prescribing, dispensing and administering medicines, and system administrators and managers.
enrolled nurse	A person who provides nursing care under the direct or indirect supervision of a registered nurse. They have completed the prescribed education preparation, and demonstrate competence to practise under the *Health Practitioner Regulation National Law Act 2009* as an enrolled nurse in Australia. Enrolled nurses are accountable for their own practice and remain responsible to a registered nurse for the delegated care.[19]
general practitioner	A person who has completed the prescribed educational preparation, has demonstrated competence for practice, and is registered with the Australian Health Practitioner Regulation Agency to practise as a medical practitioner under the *Health Practitioner Regulation National Law Act 2009* and its regulations.[22]

Term	Explanation
high-risk medicines	High-risk medicines have a heightened risk of causing injury or harm even when used as intended, and especially if they are misused or used in error. High-risk medicines include: • Medicines with a narrow therapeutic index (that is, a small difference between therapeutic and toxic doses) • Medicines with a high risk of serious harm when administered via the wrong route or when other system errors occur • Medicines that may be misused or abused. Examples of high risk-medicines are anticoagulants, insulin, cytotoxic and hazardous medicines, narcotics and sedatives. The use of high-risk medicines requires careful monitoring. Error rates with these medicines are not necessarily higher than with any other medicines, but, when problems occur, the consequences can be severe.[22]
hybrid system	A medication management system that is mostly paper based, but does use electronic medication management for the administration of medicines after the servicing pharmacy supplies a record of administration. Hybrid systems are not ADHA conformant. *See also* ADHA conformant
identity management	A set of technologies that manage individual identities, and their authentication, authorisation, roles and system privileges within or across multiple systems.
informed consent	A consumer's decision, given voluntarily, to agree to a healthcare treatment, procedure or other intervention that is made following the provision of accurate and relevant information about the healthcare intervention and alternative options available; and with adequate knowledge and understanding of the benefits and material risks of the proposed intervention relevant to the person who would be having the treatment, procedure or other intervention.[20]
interim medication chart	A medication chart used to support ongoing administration of medicines to consumers between their discharge from hospital and the medical review on their return to the residential care facility.
medication reconciliation	A formal process of obtaining and verifying a complete and accurate list of each consumer's current medicines, and matching the medicines the consumer should be prescribed to those that are actually prescribed. Any discrepancies are discussed with the prescriber, and reasons for changes to therapy are documented and communicated when care is transferred. Medication review may be part of medication reconciliation.[4]

Term	Explanation
medication review	A structured and collaborative examination of a consumer's medicines with the objective of reaching agreement with the consumer about treatment, optimising the effect of medicines, minimising the number of medication-related problems and reducing waste.[22]
medicine metadata	The dataset used to describe the attributes of a medicine.
Medicines Advisory Committee	A group of advisors to the residential care facility who provide medication management leadership and governance, and assist in the development, promotion, monitoring, review and evaluation of medication management policies and procedures that will have a positive effect on health and quality of life for consumers.[4] For residential care facilities without a formal Medicines Advisory Committee, this term refers to the relevant governing body responsible for medication management across the organisation.
medicines list	A list of medicines prepared by a clinician. A medicines list contains, at a minimum: • All medicines a consumer is taking, including over-the-counter, complementary, prescription and non-prescription medicines; for each medicine, the medicine name, form, strength and directions for use must be included[21] • Any medicines that should not be taken by the consumer, including those causing allergies and adverse drug reactions; for each allergy or adverse drug reaction, the medicine name, the reaction type and the date on which the reaction was experienced should be included. Ideally, a medicines list also includes the intended use (indication) for each medicine. It is expected that the medicines list is updated and correct at the time of transfer (including clinical handover) or when services cease, and that it is tailored to the audience for whom it is intended (that is, consumer or clinician).[18,22] In residential care services, the medicines list would be consistent with medicines on the consumer's individual eNRMC.
National Residential Medication Chart	A paper-based medication chart for consumers living in residential care facilities. The chart can be used to prescribe, dispense, claim and administer eligible Pharmaceutical Benefits Scheme (PBS) and non-PBS medicines directly, without the need for a separate prescription form.
non-functional testing	Testing the technical components of a system – for example, logging in, printing, speed of response times when using the system.

Term	Explanation
nurse practitioner	A nurse practitioner is a registered nurse endorsed as a nurse practitioner by the Nursing and Midwifery Board of Australia. The nurse practitioner practises at a clinical advanced level, meets and complies with the *Nurse practitioner standards for practice*, is able to practise independently and has direct clinical contact. Nurse practitioners practise collaboratively in multi-professional environments. The nurse practitioner practises within their scope under the legislatively protected title 'nurse practitioner' under the *Health Practitioner Regulation National Law Act 2009*.[23]
off-label prescribing	The use of a registered medicine outside of the indications, dose, route of administration or patient group set out in the TGA-approved Product Information.[29]
order sentences	Predefined orders, including medicine data such as drug name, dose, route, frequency, form, strength and instructions, used for prescribing medicines to support safer and more efficient prescribing.
PBS	Pharmaceutical Benefits Scheme; also taken to include the Repatriation Pharmaceutical Benefits Scheme unless otherwise stated.
pharmacist	A person who has completed the prescribed educational preparation, demonstrated competence for practice, and is a registered by the Pharmacy Board of Australia to practise as a pharmacist, under the *Health Practitioner Regulation National Law Act 2009*, and its Regulations. An 'accredited pharmacist' for residential medication management reviews in residential care facilities is a registered pharmacist who has completed the specified education programs or examinations approved by the Australian Association of Consultant Pharmacy or the Society of Hospital Pharmacists Australia.[4]
prescription exchange service	Provides a secure and safe electronic transfer of prescription information between doctors and pharmacists.[24] There are currently two prescription exchange services operating in Australia.
production eNRMC medication management environment	The live, active eNRMC medication management system database environment.
psychotropic medicine	Any drug capable of affecting the mind, emotions and behaviour.[25]
RACI matrix	A responsible–accountable–consulted–informed (RACI) matrix is used for clarifying and defining roles and responsibilities in cross-functional or departmental projects and processes.

Term	Explanation
record of administration	A record used to document the administration of all medicines authorised by the consumer's prescriber, usually the general practitioner.
registered nurse	A person who has completed the prescribed education preparation, demonstrates competence to practise and is registered under the *Health Practitioner Regulation National Law Act 2009* as a registered nurse in Australia.[19]
replication failover	Technology components that mirror-image the live production system, are constantly updated as the live system is updated, and are used in the event of failure of the live system.
residential care facility	Residential care service has the same meaning in the *Aged Care Act 1997*. Synonymous with residential aged care facility.
RPBS	Repatriation Pharmaceutical Benefits Scheme under the *Veterans' Entitlement Act 1986*. Includes all items on the Repatriation Schedule of Pharmaceutical Benefits and the PBS schedule.
Schedule 8 (controlled) medicines	Substances that should be available for use but require restriction of manufacture, supply, distribution, possession and use to reduce abuse, misuse and physical or psychological dependence.[26]
servicing pharmacy	The main pharmacy(ies) supplying medicines to a residential care facility.
single sign-on	A session and user authentication service that permits a user to use one set of access credentials to access multiple systems.
super user	An experienced user of the system, who provides support to other users.
Tall Man	Tall Man lettering is a typographic technique that uses selective capitalisation to help make look-alike, sound-alike medicine name pairs easier to differentiate.[27]
test cases	Scripts based on real-life scenarios that are used when formally testing business requirements in electronic systems.
test cycle	A series of related test scenarios run together in a cycle. If any test script in the cycle fails, the entire test cycle must be retested due to the co-dependency of the test scripts in the cycle.
test eNRMC medication management system environment	An eNRMC medication management system database environment used for testing software updates or configuration changes.

Term	Explanation
traceability matrix	A matrix that maps business requirements through the procurement and contract management stages so that any changes to business requirements can be traced back to the source requirement.
training eNRMC medication management system environment	A controlled eNRMC medication management database containing clean training data that is refreshed after each training session.
transitions of care	Situations when all or part of a consumer's care is transferred between healthcare locations, providers or levels of care within the same location, as the consumer's conditions and care needs change.[28]
workaround	A temporary means of bypassing or avoiding a problem without addressing its cause.[6]

Resources

Please see References for more information and links.

Australian Commission on Safety and Quality in Health Care

- Antimicrobial stewardship in aged care (website) – includes a number of resources for implementation, including antimicrobial stewardship in community and residential aged care
- National Residential Medication Chart (paper based)
- *National Guidelines for On-Screen Display of Medicines Information*
- *Electronic Medication Management Systems: A guide to safe implementation* (for hospitals)
- Electronic Medication Management Systems *Business Requirements* (for hospitals)
- *Informed Consent – fact sheet for clinicians*

Australian Digital Health Agency

- Electronic prescribing and technical framework documents
- Electronic transfer of prescriptions and the prescription exchange service
- My Health Record
- Workforce and education (includes Nursing and Midwifery Digital Health Capability Framework)

Aged Care Quality and Safety Commission

- National Aged Care Mandatory Quality Indicator Program
- Psychotropic medications used in Australia – information for aged care

State and territory medicines and poisons regulation units

- Australian Capital Territory
- New South Wales
- Northern Territory
- Queensland
- South Australia
- Tasmania
- Victoria
- Western Australia
- Therapeutic Goods Administration – lists the contacts for state and territory medicines and poisons regulation units

Australian Nursing and Midwifery Federation

Management of Medicines in Aged Care: Nursing guidelines

National Centre for Antimicrobial Stewardship

Resources to support Aged Care Quality Standards

Cognitive Decline Partnership Centre

Clinical Practice Guidelines and Principles of Care for People with Dementia

Human Factors and Ergonomics Society of Australia (HFESA)

A Human Factors Resource for Health Professionals and Health Services Staff

Post-implementation review resources

Numerous PIR guidelines and templates are available online – for example:

- Techno-PM
- ProjectManagement.com
- Free Management eBooks.

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