AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

# Partnering with patients to reduce medication errors and adverse drug events at transitions of care

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# Partnering with patients

## Clinical benefits include:[1]

- Decreased morbidity and mortality
- Decreased readmission rates
- Reduced length of stay
- Improved adherence to treatment (medication) regimens

# Medication errors at interfaces of care

**Medication errors are one of the leading causes of injury to hospital patients**

**More than 50% of medication errors occur at transitions of care [2]**

- Admission, transfer and discharge

**20% of adverse drug events result from errors at interfaces of care [3]**

# Medication errors at interfaces of care

## Medication histories

- Up to 67% of contain one or more errors[4]
- Up to a third have potential to cause harm[5]

## Medication ordered on admission

- 30 – 70% patients ≥ 1 unintended variation between medication history and admission orders [5,6]

## Medication ordered on discharge

- 12 – 15% patients have an error on discharge script [7,8]

## Readmission 2.3 times more likely if ≥ 1 medicines unintentionally omitted from the discharge summary[9]

# Medication reconciliation

**Formalised medication reconciliation at admission, transfer and discharge reduces medication errors by 50 – 94%** [3,4,7,11]

**Errors reduced if patients:**[7]

**bring in medicine containers**

**have a current list of medicines**

# Medication reconciliation


**Objective**

**Reduce medication errors and adverse events through formalised process of medication reconciliation that actively involves patients, carers and or families.**

**Intervention:**

**WHO High 5s Project- Assuring medication accuracy at transitions of care**

# WHO High 5s Project


**Implement standard operating protocol (SOP) for multidisciplinary medication reconciliation conducted in partnership with patients and carers/families**

**5 year international project, currently in third year**

**13 Australian health services participating**

**ACSQHC:**

- **Conducting Australian collaborative**
- **Providing resource materials**

# WHO High 5s Project methodology


## Phased approach

- Focus on patients aged 65 years or older admitted to inpatient services through the ED

## Participating hospitals are required to:

- Implement the SOP
- Report on:
  - Performance measures (process and quality of medication reconciliation)
  - SOP implementation experience
  - Adverse event analysis related to medication reconciliation

# Medication reconciliation SOP process

**Steps**

1. **Compiling** a **best possible medication history (BPMH) in partnership with the patient and family/carer**
2. **Confirming** the medication history with at least one other source
3. **Reconciling the BPMH** with medication orders on admission, transfer and discharge
4. **Supplying** accurate medicines information when care is transferred

# Step 1. Best Possible Medication History

***"A BPMH is a medication history obtained by a clinician which includes a thorough history of all regular medication use (prescribed and non-prescribed), using a number of different sources of information."***

**It is the baseline from which:**

- drug treatment is continued on admission
- therapeutic interventions are made
- self-care is continued after discharge

# Step 1. Best Possible Medication History

**Main point is to elicit what the patient is actually taking**

**Patient is interviewed whenever possible to obtain:**

**a. details of previous adverse drug events and allergies**

**b. all medicines the patient is taking at the time of presentation to hospital including:**

- prescribed medicines
- non-prescribed, over-the counter medicines
- Complementary/herbal medicines
- PRN meds

**c. Recently ceased or changed medications**

# Step 2. Confirm accuracy of history with at least one other source

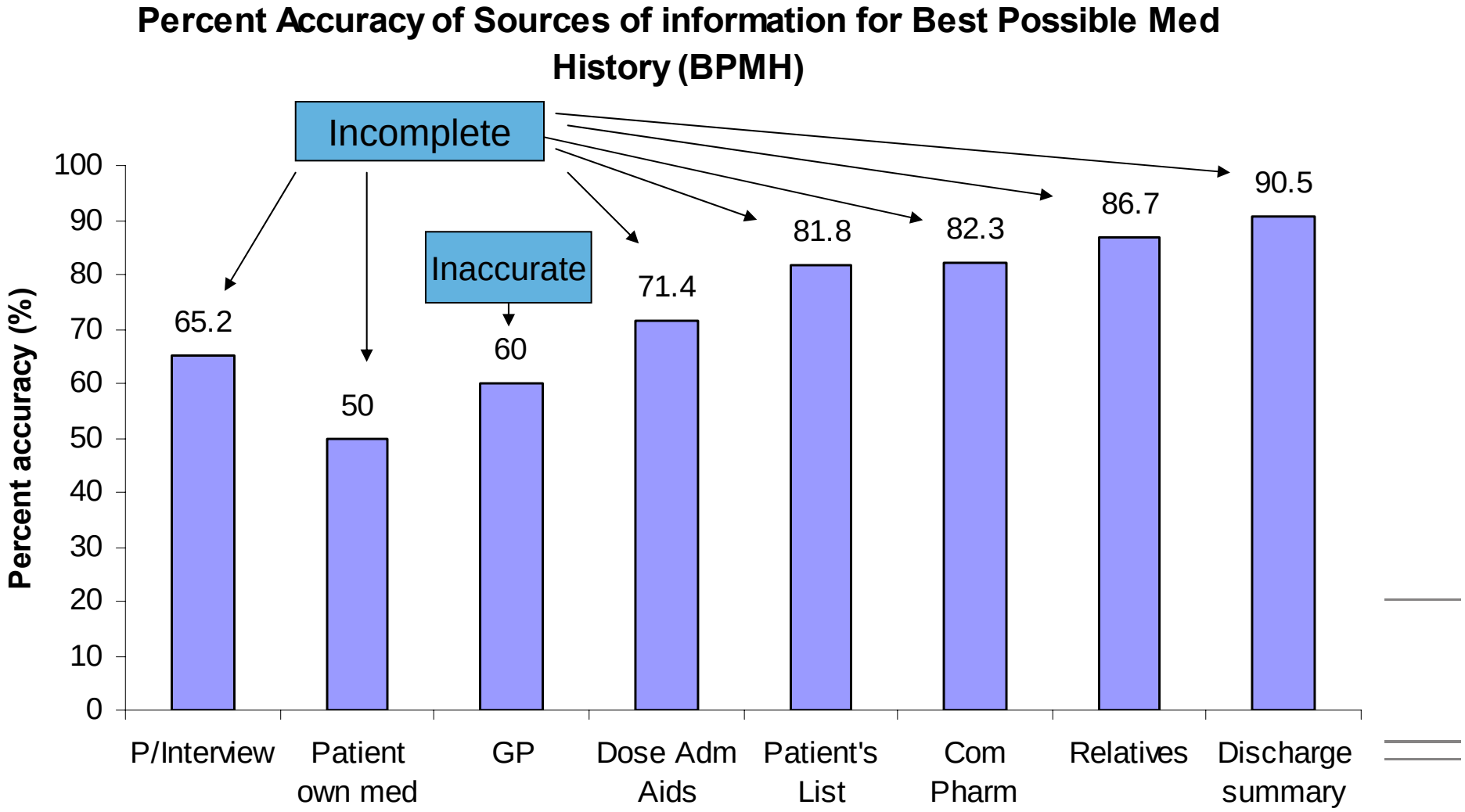
**A second source is used to confirm the medicines information obtained.**

**Sources include**

- Medicine containers (including blister packs)
- Patient's medicines list
- Community prescribers and/or community pharmacist
- Carer or family
- Previous medical records e.g. discharge summaries, electronic health records

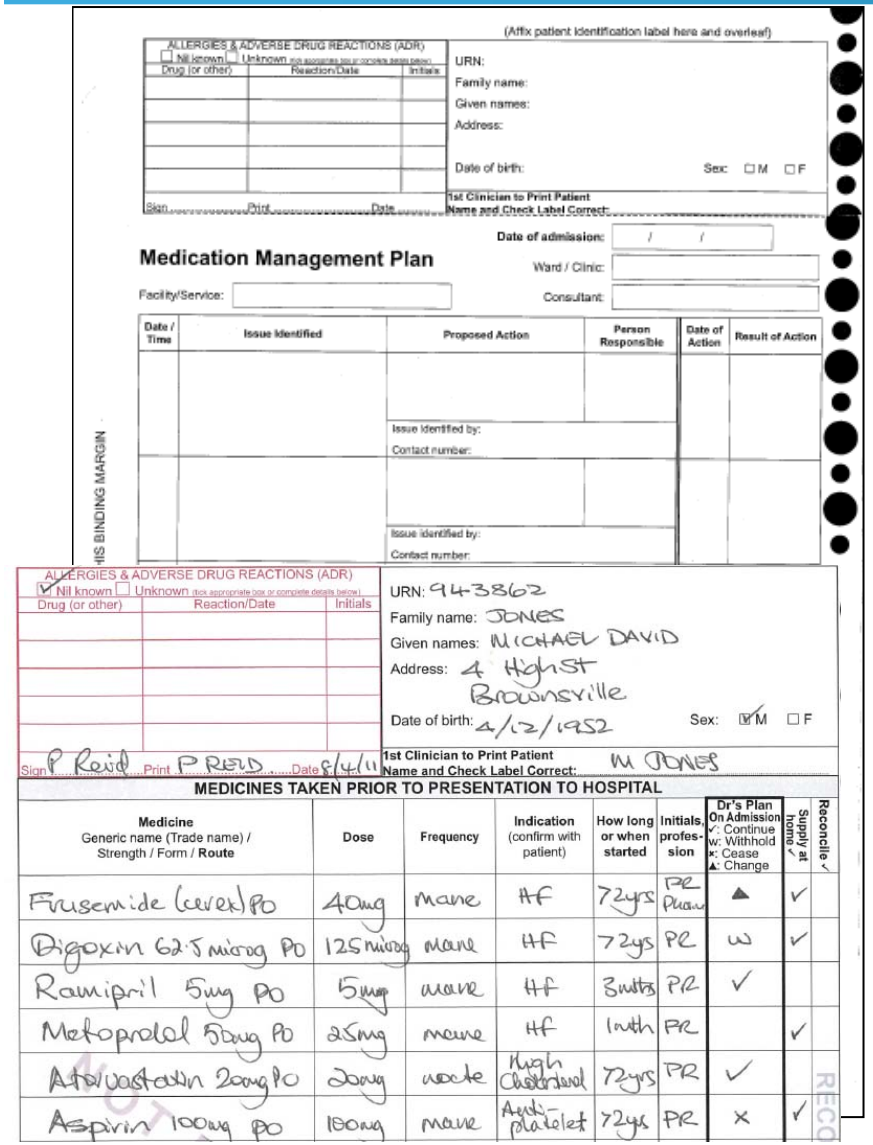
**Patients/carers instructed to bring medicines containers and current medicines list into hospital**

# Step 2. Confirm accuracy of history with at least one other source




Armadale Health Service Data

# Documenting the BPMH



(Affix patient identification label here and overleaf)

ALLERGIES & ADVERSE DRUG REACTIONS (ADR)
☐ Nil known ☐ Unknown (tick appropriate box or complete details below)

| Drug (or other) | Reaction/Date | Initials |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

Sign ..... Print ..... Date .....

URN:
Family name:
Given names:
Address:
Date of birth: Sex: ☐M ☐F
1st Clinician to Print Patient Name and Check Label Correct:

**Medication Management Plan**

Date of admission: / /
Facility/Service: Ward / Clinic:
Consultant:

| Date / Time | Issue Identified | Proposed Action | Person Responsible | Date of Action | Result of Action |
|---|---|---|---|---|---|
| | | | | | |
| | | Issue identified by: Contact number: | | | |
| | | | | | |
| | | Issue identified by: Contact number: | | | |

THIS BINDING MARGIN

ALLERGIES & ADVERSE DRUG REACTIONS (ADR)
☑ Nil known ☐ Unknown (tick appropriate box or complete details below)

| Drug (or other) | Reaction/Date | Initials |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

Sign P Reid Print P REID Date 6/4/11

URN: 943862
Family name: JONES
Given names: MICHAEL DAVID
Address: 4 Highst Brownsville
Date of birth: 4/12/1952 Sex: ☑M ☐F
1st Clinician to Print Patient Name and Check Label Correct: M JONES

**MEDICINES TAKEN PRIOR TO PRESENTATION TO HOSPITAL**

| Medicine Generic name (Trade name) / Strength / Form / Route | Dose | Frequency | Indication (confirm with patient) | How long or when started | Initials, profession | Dr's Plan On Admission ✓: Continue w: Withhold ×: Cease ▲: Change | Supply at home ✓ | Reconcile ✓ |
|---|---|---|---|---|---|---|---|---|
| Frusemide (Lasix) PO | 40mg | mane | Hf | 72yrs | PR Pharm | ▲ | ✓ | |
| Digoxin 62.5 microg PO | 125 microg | mane | Hf | 72yrs | PR | w | ✓ | |
| Ramipril 5mg PO | 5mg | mane | Hf | 3mths | PR | ✓ | | |
| Metoprolol 50mg PO | 25mg | mane | Hf | 1mth | PR | | ✓ | |
| Atorvastatin 20mg PO | 20mg | nocte | High Cholesterol | 72yrs | PR | ✓ | | |
| Aspirin 100mg PO | 100mg | mane | Anti-platelet | 72yrs | PR | × | ✓ | |

## National Medication Management Plan

- Prompts for key information (drug name, dose, form, frequency, duration)
- Documentation of:
  - BPMH
  - Plan to continue/cease/change medicine
  - Medicines recently ceased
  - Allergies and adverse drug reactions
- Kept with NIMC

# National Medication Management Plan

## Checklist to aid with patient interview

**MEDICATION HISTORY CHECKLIST**

- ☐ Prescription medicines
- ☐ Sleeping tablets
- ☐ Inhalers, puffers, sprays, sublingual tablets
- ☐ Oral contraceptives, hormone replacement therapy
- ☐ Over-the-counter medicines
- ☐ Analgesics
- ☐ Gastrointestinal drugs *(for reflux, heartburn, constipation, diarrhoea)*
- ☐ Complementary medicines *(e.g. vitamins, herbal or natural therapies)*
- ☐ Topical medicines *(e.g. creams, ointments, lotions, patches)*
- ☐ Inserted medicines *(e.g. nose/ear/eye drops, pessaries, suppositories)*
- ☐ Injected medicines
- ☐ Recently completed courses of medicine
- ☐ Other people's medicine
- ☐ Social and recreational drugs
- ☐ Intermittent medicines *(eg. weekly or twice weekly)*

## Risk assessment for medication misadventure

**MEDICATION RISK IDENTIFICATION**

| Level of Independence | Yes | No |
|---|---|---|
| Lives alone | ☐ | ☐ |
| Lives in residential care facility | ☐ | ☐ |
| Uses dose administration device i.e. spacers, inhaler devices | ☐ | ☐ |
| Uses administration aid (specify): ..... | ☐ | ☐ |
| Uses medication list | ☐ | ☐ |
| Swallowing issues | ☐ | ☐ |
| Has impaired hearing | ☐ | ☐ |
| Has impaired vision | ☐ | ☐ |

Other information: .....

| Patient Assessment | Yes | No |
|---|---|---|
| Can read/comprehend labels | ☐ | ☐ |
| Can understand English | ☐ | ☐ |
| Can open bottles | ☐ | ☐ |
| Can measure liquids | ☐ | ☐ |
| Recent Home Medicine Review | ☐ | ☐ |
| Suspected non-adherence | ☐ | ☐ |

Language spoken:

☐ Not an issue

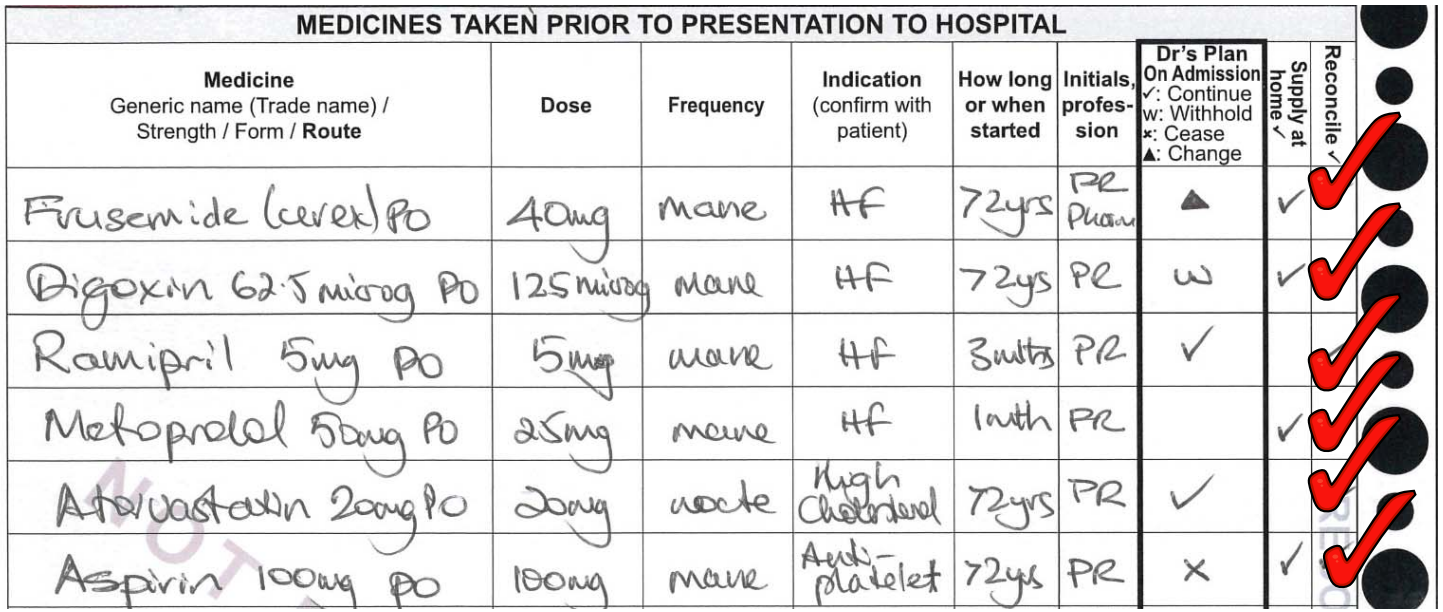
Assess adherence by asking:

- People often have difficulty taking their pills for one reason or another. Have you had any difficulty taking your pills?
- About how often would you say you miss taking your medicines?

Other information: .....

# Step 3. Reconcile history with prescribed medicines

- BPMH is compared to admission medication orders on NIMC
- Any discrepancies identified are resolved and documented.



MEDICINES TAKEN PRIOR TO PRESENTATION TO HOSPITAL

| Medicine<br>Generic name (Trade name) / Strength / Form / **Route** | Dose | Frequency | Indication<br>(confirm with patient) | How long or when started | Initials, profes-sion | Dr's Plan On Admission<br>✓: Continue<br>w: Withhold<br>×: Cease<br>▲: Change | Supply at home ✓ | Reconcile ✓ |
|---|---|---|---|---|---|---|---|---|
| Frusemide (Lasix) PO | 40mg | mane | HF | 72yrs | PR Pharm | ▲ | ✓ | ✓ |
| Digoxin 62.5 microg PO | 125microg | mane | HF | 72yrs | PR | w | ✓ | ✓ |
| Ramipril 5mg PO | 5mg | mane | HF | 3mths | PR | ✓ | | ✓ |
| Metoprolol 50mg PO | 25mg | mane | HF | 1mth | PR | | ✓ | ✓ |
| Atorvastatin 20mg PO | 20mg | nocte | High Cholesterol | 72yrs | PR | ✓ | | ✓ |
| Aspirin 100mg PO | 100mg | mane | Anti-platelet | 72yrs | PR | × | ✓ | ✓ |

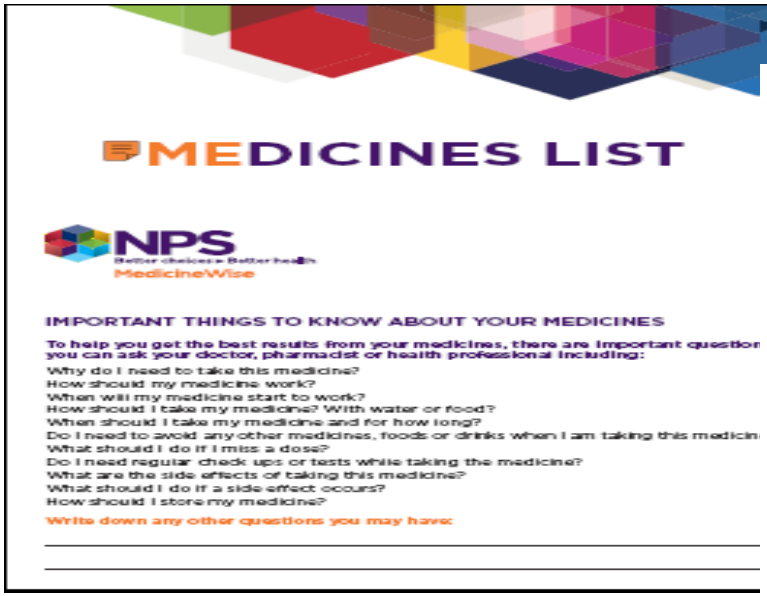
## Step 4. Supply accurate medicines information to next provider and the patient / carer

**Whenever the patient's care is transferred the person taking over the patient's care is supplied with an accurate and complete list of the patient's medicines and explanation of any changes.**

- Health professional; and
- Patient and family/carer

# Step 4. Supply accurate medicines information to next provider and the patient / carer

**At discharge the medicines ordered (discharge prescription) are reconciled against the current NIMC and the BPMH. This reconciled list is used to produce the patients medication list and update the summary provided to the patient's GP.**



MEDICINES LIST

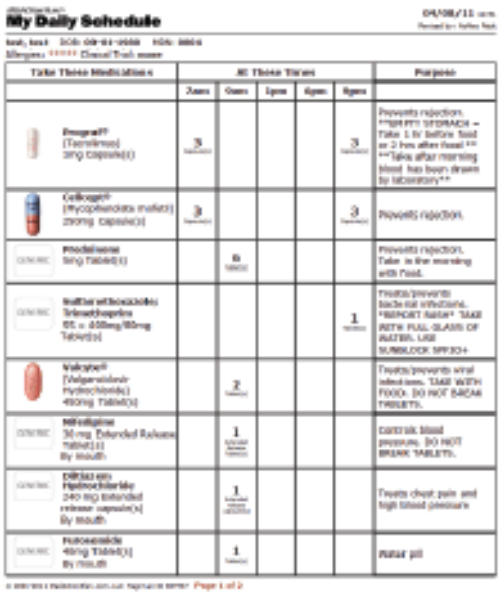
NPS MedicineWise

IMPORTANT THINGS TO KNOW ABOUT YOUR MEDICINES

To help you get the best results from your medicines, there are important question you can ask your doctor, pharmacist or health professional including:

Why do I need to take this medicine?
How should my medicine work?
When will my medicine start to work?
How should I take my medicine? With water or food?
When should I take my medicine and for how long?
Do I need to avoid any other medicines, foods or drinks when I am taking this medicin
What should I do if I miss a dose?
Do I need regular check ups or tests while taking the medicine?
What are the side effects of taking this medicine?
What should I do if a side effect occurs?
How should I store my medicine?

Write down any other questions you may have



My Daily Schedule

| Take These Medications | All These Times | | | | | Purpose |
|---|---|---|---|---|---|---|
| | 7am | 11am | 1pm | 4pm | 8pm | |
| Prograf® (Tacrolimus) 1mg capsule(s) | 3 | | | | 3 | Prevents rejection. **SPECIAL INSTRUCTIONS** Take 1 hr before food or 2 hrs after food ** **Take after morning blood has been drawn by laboratory** |
| Cellcept® (Mycophenolate mofetil) 250mg capsule(s) | 3 | | | | 3 | Prevents rejection. |
| Prednisone 5mg Tablet(s) | | 6 | | | | Prevents rejection. Take in the morning with food. |
| Sulfamethoxazole/ Trimethoprim DS = 400mg/80mg Tablet(s) | | | | | 1 | Treats/prevents bacterial infections. *IMPORTANT NOTE* TAKE WITH PLENTY FULL GLASS OF WATER. USE SUNBLOCK SPF30+ |
| Valcyte® (Valganciclovir Hydrochloride) 450mg Tablet(s) | | 2 | | | | Treats/prevents viral infections. TAKE WITH FOOD. DO NOT BREAK TABLETS. |
| Nifedipine 30 mg Extended Release Tablet(s) By mouth | | 1 | | | | Controls blood pressure. DO NOT BREAK TABLETS. |
| Diltiazem Hydrochloride 240 mg Extended release capsule(s) By mouth | | 1 | | | | Treats chest pain and high blood pressure |
| Furosemide 40mg Tablet(s) By mouth | | 1 | | | | Water pill |

# Patient role in medication reconciliation

**Only constant in the process**

**Contributing to accurate and complete medication history by:**

- Bringing medicines containers into hospital
- Maintaining a current list of medicines (including OTC, complementary medicines)
- Being honest about their medicine taking behaviour

**Helping prevent medication errors and adverse events by:**

- Speaking up if they are unsure about their medicines, or suspect a medication error

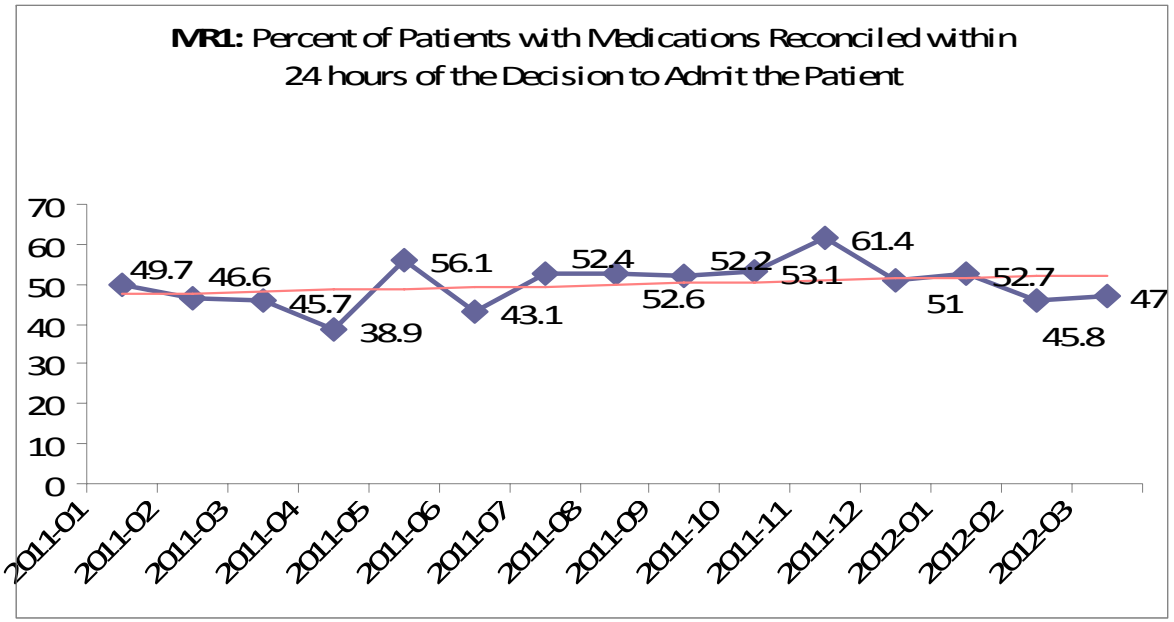
**Participation encourages ownership and medicines self-management**

# High 5s hospitals results

## Performance measures

### % Patients ≥ 65 years reconciled within 24 hours of admission

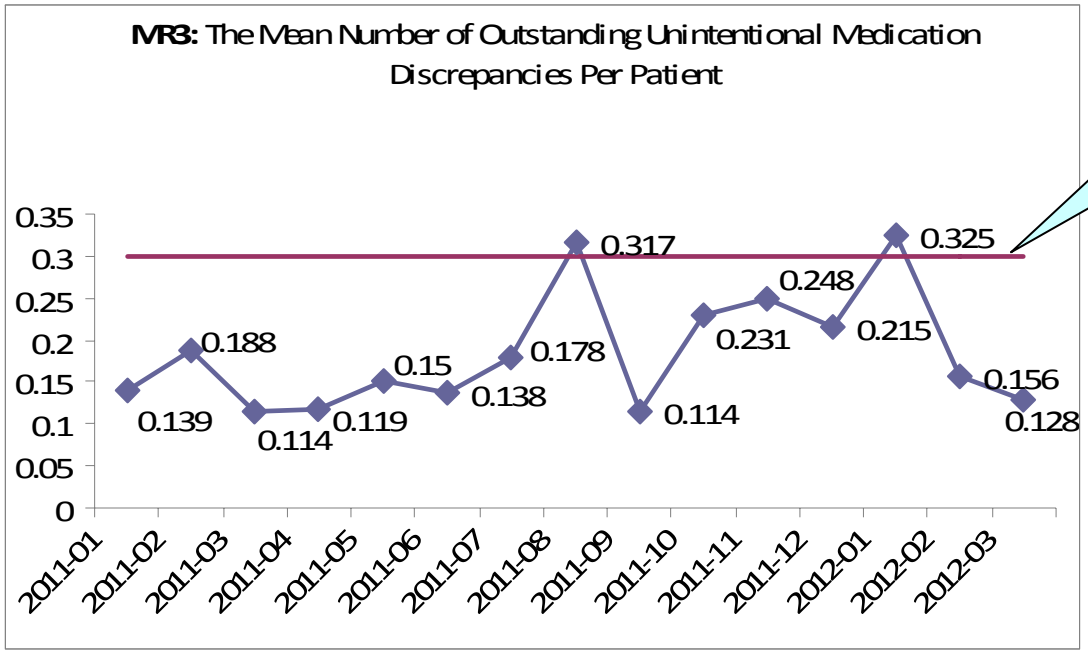
Range 16 – 94%



# High 5s hospitals results

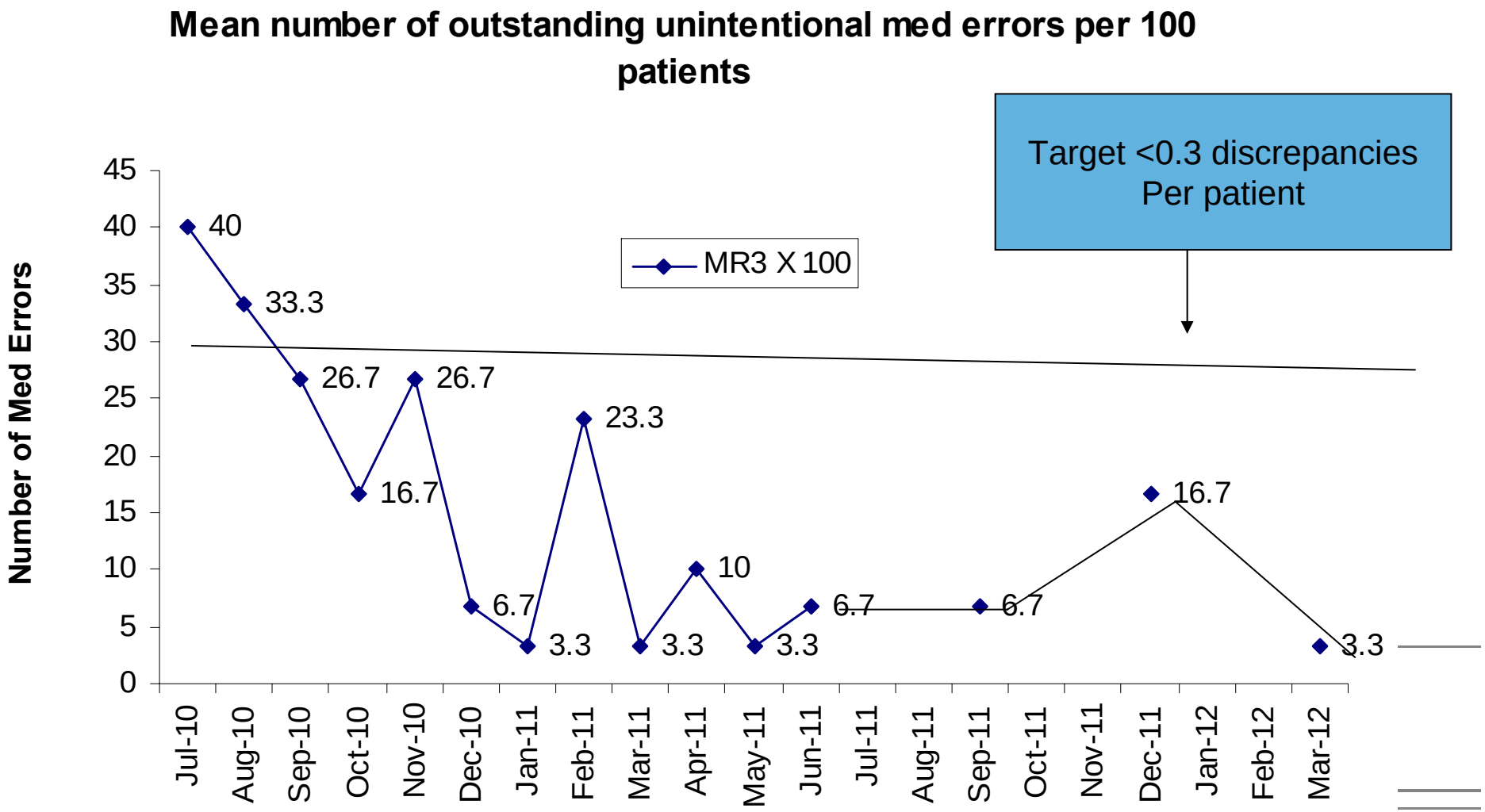
## Quality of process

- Potential medication errors (after reconciliation)
- Identified by an independent observer



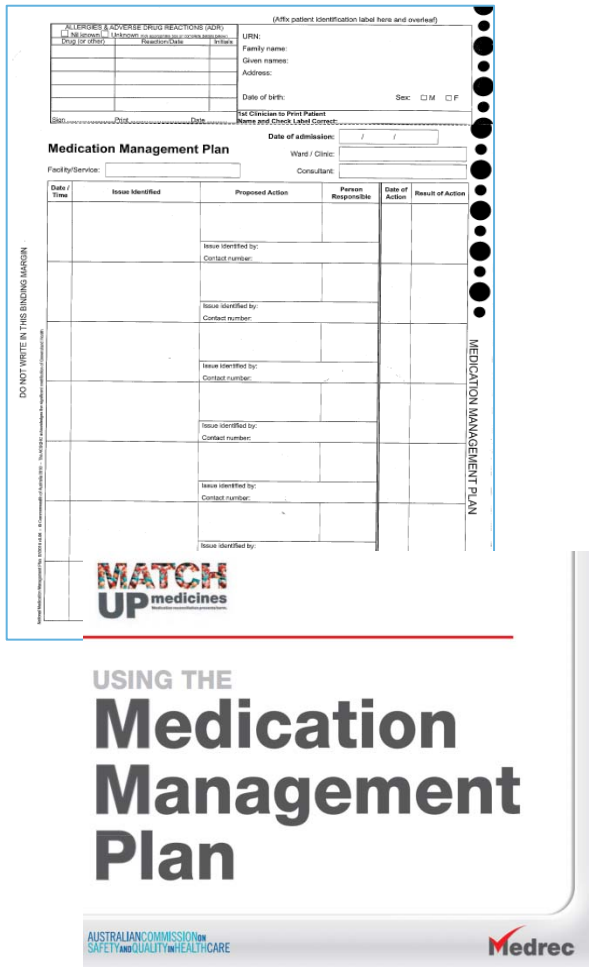

On average hospital rates are below absolute target of 0.3 unintentional discrepancies per patient

# WHO High 5s medication reconciliation measure



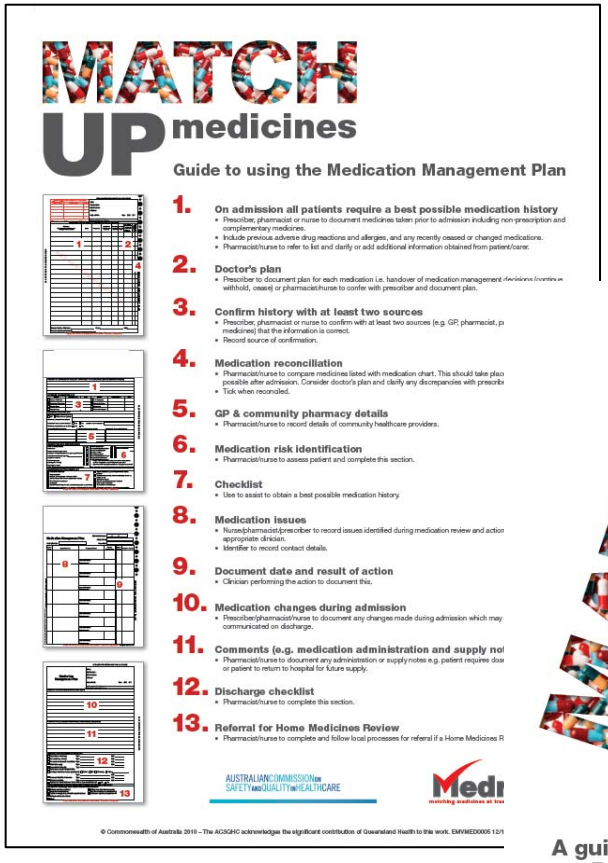

Armadale Health Service Data

# Medication reconciliation resources




**Medication management plan + implementation resources**

## MATCH UP Medicines Resources



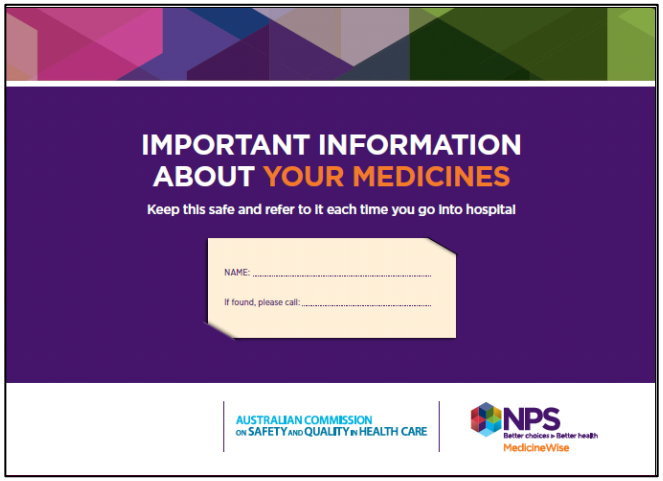


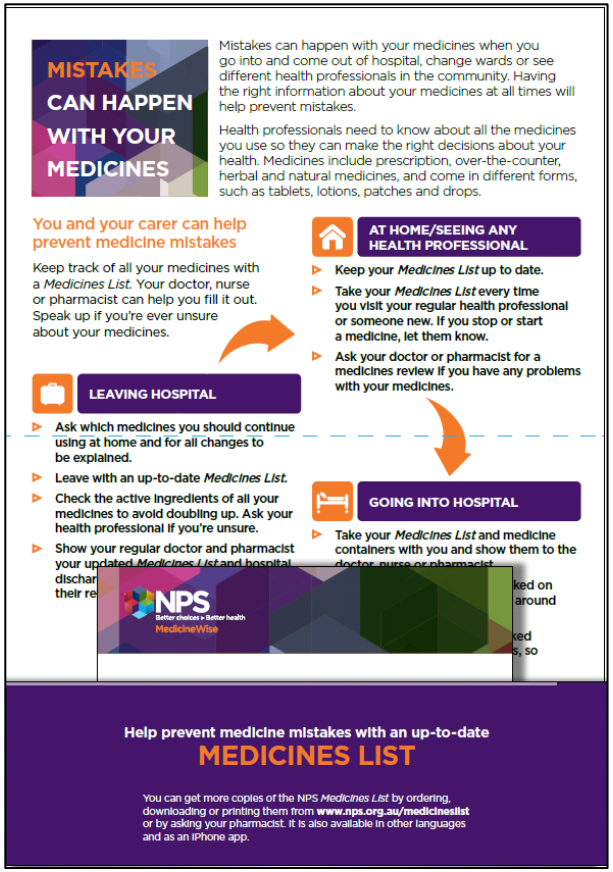

A guide to Medication Reconciliation.

Medrec
matching medicines at transitions of care

# Consumer resources

- Consumer wallet / information sheet
  - “Mistakes can happen with your medicines”
  - How to prevent them
  - Have a *medicines list*



# Consumer information

## MISTAKES CAN HAPPEN WITH YOUR MEDICINES

Mistakes can happen with your medicines when you go into and come out of hospital, change wards or see different health professionals in the community. Having the right information about your medicines at all times will help prevent mistakes.

Health professionals need to know about all the medicines you use so they can make the right decisions about your health. Medicines include prescription, over-the-counter, herbal and natural medicines, and come in different forms, such as tablets, lotions, patches and drops.

### You and your carer can help prevent medicine mistakes

Keep track of all your medicines with a *Medicines List*. Your doctor, nurse or pharmacist can help you fill it out. Speak up if you're ever unsure about your medicines.

### LEAVING HOSPITAL

- Ask which medicines you should continue using at home and for all changes to be explained.
- Leave with an up-to-date *Medicines List*.
- Check the active ingredients of all your medicines to avoid doubling up. Ask your health professional if you're unsure.
- Show your regular doctor and pharmacist your updated *Medicines List* and hospital discharge information so they can update their records.

### AT HOME/SEEING ANY HEALTH PROFESSIONAL

- Keep your *Medicines List* up to date.
- Take your *Medicines List* every time you visit your regular health professional or someone new. If you stop or start a medicine, let them know.
- Ask your doctor or pharmacist for a medicines review if you have any problems with your medicines.

### GOING INTO HOSPITAL

- Take your *Medicines List* and medicine containers with you and show them to the doctor, nurse or pharmacist.
- Your medicines should be checked on arrival and when you're moved around the hospital.
- For your safety, you may be asked questions about your medicines, so answer them honestly.

### HELP PREVENT MEDICINE MISTAKES WITH AN UP-TO-DATE MEDICINES LIST

Order, print or download an NPS *Medicines List* from **www.nps.org.au/medicineslist** or ask your pharmacist. It is also available in other languages and as an iPhone app.

### BE MEDICINEWISE

Find out how at **www.nps.org.au/medicinewise**

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AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

The role of the Australian Commission on Safety and Quality in Health Care is to lead and coordinate improvements in safety and quality in health care across Australia.



NPS Better choices > Better health MedicineWise

Independent, not-for-profit and evidence based, NPS enables better decisions about medicines and medical tests. We are funded by the Australian Government Department of Health and Ageing.





# NPS Medicines list

## Keep your Medicines List up-to-date

**List ALL medicines currently used, including: prescription medicines, over-the-counter medicines, herbal and natural medicines.** Medicines come in many forms, including: tablets, liquids, inhalers, drops, patches, creams, suppositories and injections.

My name: .....  Date to have all my medicines reviewed: .....

| Name of medicine<br>Active ingredient or brand name | Strength | What is the medicine for? | How much do I use and when? | Special instructions or comments | Date started | When to stop or review |
|---|---|---|---|---|---|---|
| Active ingredient: Paracetamol<br>Brand: Panadol | 500mg tablets | Pain from arthritis | 2 tablets, every 6 hours | Doctor recommends taking regularly, rather than as needed for pain | 18.09.12 | 18.12.12 |

### MEDICINES LIST

NPS
Better choices. Better health.
MedicineWise

**IMPORTANT THINGS TO KNOW ABOUT YOUR MEDICINES**

**To help you get the best results from your medicines, there are important questions you can ask your doctor, pharmacist or health professional including:**

Why do I need to take this medicine?
How should my medicine work?
When will my medicine start to work?
How should I take my medicine? With water or food?
When should I take my medicine and for how long?
Do I need to avoid any other medicines, foods or drinks when I am taking this medicine?
What should I do if I miss a dose?
Do I need regular check ups or tests while taking the medicine?
What are the side effects of taking this medicine?
What should I do if a side effect occurs?
How should I store my medicine?

**Write down any other questions you may have:**

_____

_____

If you need more space to write your medicines, visit our website at www.nps.org.au to print more *Medicines List* pages or to order extra copies. Keep all your pages together.

# National Safety and Quality Health Service Standards – Standard 4: Medication Safety

Criterion 2: The clinical workforce accurately records patient's medication history and this history is available throughout the episode of care

Criterion 4: The clinician provides a complete list of a patient's medicines to the receiving clinician and patient when handing over care or changing medicines

Criterion 5: The clinical workforce informs patients about their options, risks and responsibilities for an agreed medication management plan

# Medication Safety Accreditation Standard

| | Actions required | |
|---|---|---|
| | **4.6.1** A best possible medication history is documented for each patient<br>**4.6.2** The medication history and current clinical information is available at the point of care<br>**4.7.1** Known medication allergies and adverse drug reactions are documented in the patient clinical record | **Core** |
| | **4.8.1** Current medicines are documented and reconciled at admission and transfer of care between healthcare settings | **Developmental** |
| | **4.12.1** A system is in use that generates and distributes a current and comprehensive list of medicines and explanation of changes in medicines<br>**4.12.2** A current and comprehensive list of medicines is provided to the patient and/or carer when concluding an episode of care<br>**4.12.3** A current and comprehensive list of medicines is provided to the receiving clinician during clinical handover<br>**4.12.4** Action is taken to increase the proportion of patients and receiving clinicians that are provided with a current comprehensive list of medicines during clinical handover | **Core** |

# Medication Safety Accreditation Standard

| | Actions required | Core/Developmental Action |
|---|---|---|
| | **4.14.1** An agreed medication management plan is documented and available in the patient's clinical record.<br><br>**4.15.1** Information on medicines is provided to patients and carers in a format that is understood and meaningful.<br><br>**4.15.2** Action is taken in response to patient feedback to improve medicines information distributed by the health service organisation to patients | **Developmental** |

## Conclusion

A formalised process of medication reconciliation involving patients and/or family/carers minimises medication errors at transitions of care.

It is a complex process that requires cooperation among health practitioners within, and between, healthcare settings and benefits from the active involvement of patients and carers.

Patients and their families can play a crucial role by keeping an up to date and accurate medicines list, bringing this into hospital along with their medicines containers, being honest about the medicines they are taking and speaking up if they suspect an error has occurred.

# Acknowledgements

Armadale Health Service (WA) for their slides
Australian High 5s hospitals

**The High 5s Project, established by WHO in 2007, is an international collaboration carried out in seven countries: Australia, Germany, France, the Netherlands, Singapore, Trinidad & Tobago and the United States of America, and coordinated by the WHO Collaborating Centre on Patient Safety, The Joint Commission. Its mission is to facilitate implementation and evaluation of standardized patient safety solutions within a global learning community, to achieve measurable, significant and sustainable reductions in high risk patient safety problems. www.high5s.org**

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**Resources are available at**
**www.safetyandquality.gov.au**

**or**

**contact Helen Stark, Senior Project Officer at**
**helen.stark@safetyandquality.gov.au**

# Thank you


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