Ballarat Health Services

Issue 4, Jan/Feb 2015

Medication Safety Newsletter

Medication Administration Protocol CPP0287

Medication Administration CPP0287 has been created. This new CPP replaces the following documents:

POL0050 - Peripheral Intravenous therapy by enrolled nurses
POL0043 - Medications - single administration at BHS
POL0046 - Intravenous drug administration by an RN
CPP0464 - Nurse initiated medications
CPP0089 - Medication Calculations

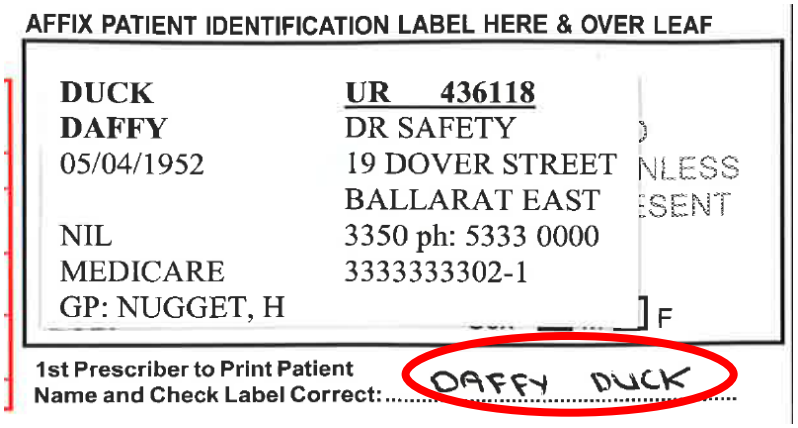
Major changes include:

- Independent Double Checking of Medications - 2 clinicians independently of each other perform each component of the medication administration process, including the calculation (when required). The medication must be checked to the patient's bedside.

The list of medications requiring double checking has been updated. These include: warfarin, insulin (all doses), all drugs of dependence (S8 & S4Ds), IV electrolytes (e.g. potassium, magnesium), neuromuscular blockers, IV anticoagulants (e.g. heparin infusions), clozapine, gentamicin, amphotericin, blood products and all medicines administered to a neonatal or paediatric patient. You should also double check any unfamiliar medication. Exemptions include neuromuscular blockers in "closed areas" such as theatre and ECT.

- S4D (new terminology) are 'medications of dependence' - known to be subject to misuse & trafficking. This includes S4 medications that have previously been called Schedule 11 or S11s
- Telephone Orders can now be taken by 2 ENs.
- Nurse Initiated Medications. An updated list of nurse initiated medications is available. The time frame for administering these medications has changed from once only to up to a 24 hour period. ENs can Nurse Initiate medications & document this on the NIMC, following discussion with a Registered Nurse or Midwife.

Handwrite the Name below the Bradma!



Look for the Blitz materials on your ward in January! In 2014 the NIMC audit highlighted that BHS only completed this in 24% of cases. This is well below the state average of 47%

First prescriber must write patient name underneath the label.

Correct identification is the responsibility of the prescriber.
The first prescriber must write the patient's full name underneath the Patient Identification Sticker (see above) as a means of double checking the correct sticker was chosen.
Attach the Patient Identification Sticker and verify that the correct sticker has been selected prior to writing anything else on the medication chart or prescription.
BHS is in the process of updating its forms so that all forms where medications are prescribed, administered or dispensed will require this important double check to be performed.
This safety measure is designed to reduce identification errors when the incorrect Patient Identification Sticker is placed on the NIMC.

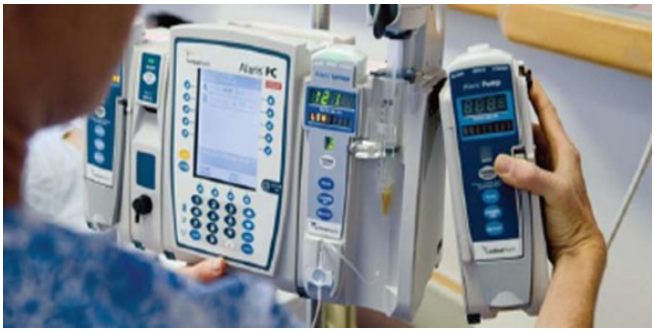
Newsletter Contact: BHS Pharmacy Department

Guardrails Introduction

In November 2014 the existing intravenous pumps were replaced by new Alaris 'smart' pumps, with *Guardrails. Guardrails* is the name patented by Alaris for the dose error reduction software This a major step forward in medication safety, and involved a significant financial investment by BHS.

The Alaris system allows up to four IV drugs/fluids to be infused (via Large Volume Pump (LVP) and/or Syringe Pump (SP) which is attached to one Point of Care Unit (PCU) 'the brains' (see picture ONE). The name of the drugs/fluids are only visible when the relevant LVP or SP is added and that channel selected.

Picture ONE



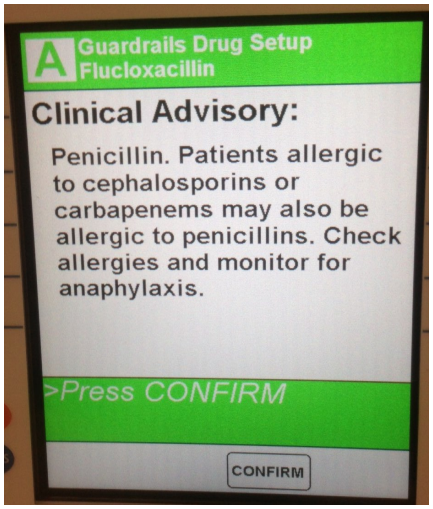
The LVP is used for most standard infusions, and also has the ability for a 60 mL syringe to be attached via a syringe adaptor to the top of the pump. This can be useful for drugs such as Prothrombinex which are to be given undiluted after reconstitution at a slow rate. The syringe pump is designed for lower volume infusions where accuracy is critical (e.g. insulin). A lower volume line is used and the syringe attachment has a much greater degree of accuracy compared to using a syringe with the large volume pump.

All pumps are loaded with *Guardrails* (parameters for each drug/fluid setting minimum and maximum doses, rates and concentration). The drug/fluid library for Guardrails was populated onsite taking into account BHS drug guidelines, CPPs, other standard drug references, nursing and medical involvement from each unit. When the set parameters are exceeded, warnings will display on the pump alerting the user that they are above/below standard dosing or that they cannot proceed. Clinical advisories alert the user to a variety of medication safety messages - see example.

Guardrails has also allowed the creation of different 'profiles' for different areas, which includes only drugs/fluids used in their area and/or their individual dosing differences e.g. Critical Care Adult, Critical Care Paediatric.

To maximise patient safety it is essential to administer all infusions via *Guardrails.* Bypassing the *Guardrails* system (by using basic infusion) increases the risk of error. Any drugs/fluids that cannot be found should be reported through the 'Change Request for *Guardrails* Form' that is available on the BHS Intranet Pharmacy page (Support Services menu). These requests will be reviewed and the dataset updated if required.

Guardrails also collects data on usage that will be utilised in the future to detect issues, monitor compliance (e.g. basic infusion being used, excessive air in line alarms, overrides etc.) and trend usage of medications.



Picture TWO

As part of the *Guardrails* Project a Working Party has reviewed the setup of infusion lines and configurations. The recommended changes will be included in the relevant Clinical Practice Guidelines.
Congratulations to Project Manager Peter McLennan, Pharmacists Belinda Lock and Renee Dimond and the Ward Champions for a successful implementation.

Patient Confidentiality and Medication Packaging

A quick reminder to all staff to ensure that medication packaging is discarded in a way that protects patient privacy. Always remove the patient's details or black out the patient's details before disposing. Paper packaging can be placed in a confidential waste bin.

Congratulations

Thank you to all the participants who completed and submitted a TGA ADR report to the pharmacy department over the months of October, November & December. Gabrielle Ford from Pharmacy was the winner of the $20 Coles Myer Voucher. During the competition a jump in TGA reports was observed which can hopefully be sustained. A TGA ADR report involves reporting adverse drug reactions to the Therapeutic Goods Administration so they can monitor side effects of medicines.

Potassium Update

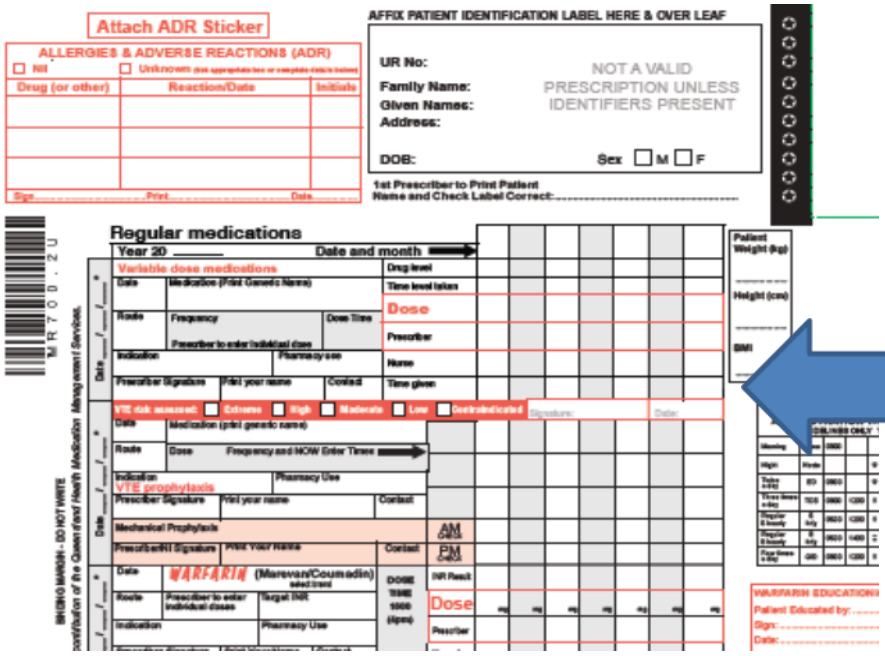
On the 5th January BHS implemented a new potassium ampoule management strategy. Two guidelines are now available: Potassium- intravenous infusion and enteral (general wards excluding pediatrics) DRG0044 and Potassium- intravenous infusion and enteral (Critical Care Areas excluding Paediatrics) DRG0043 are now available. The main changes include:

- Only pre- mixed solutions of potassium chloride are to be used in clinical areas.
- A larger range of pre-mixed potassium chloride bags are available.
- Potassium chloride ampoules will only be available in:
  - ED and CCU for haemofiltration and paediatric diabetic ketoacidosis. They must be stored in their designated container with a secure lid.
  - Resuscitation trolleys and MET bags. These ampoules must be stored in a red/orange zip lock bag with a label stating they are for ALS use only.
- If potassium acetate or potassium dihydrogen phosphate and dipotassium hydrogen phosphate infusions are required these must be approved by a consultant. The consultant's name must be endorsed on the order. In these situations the pharmacy department will prepare these solutions. After hours, contact the on call pharmacist.

The management of Adult Diabetic Ketoacidosis (CPP0450) has been updated to reflect these changes and now references pre mixed bags only.

VTE Prophylaxis

An update to the NIMC has been released. The NIMC now includes a venous thromboembolism (VTE) risk assessment section, location for mechanical prophylaxis (e.g. TEDS) and a double signature for the administration of warfarin.



It is expected that the VTE risk assessment will be completed by the prescriber for **all patients**, with VTE prophylaxis prescribed where applicable.

Guidance on the VTE risk assessment is available in CPG0022 Thromboprophylaxis.

Colchicine Toxicity Reminder

A recent South Australian Coroner's case highlighted the toxicity risks with colchicine. An elderly patient received multiple colchicine courses in a short period which resulted in fatal blood concentrations.
The recommended dose in the AMH for acute gout is 1mg orally then 500micrograms 1 hour later. Do not repeat course within 3 days and wait 12 hours before resuming prophylactic colchicine. This dose is preferred over that recommended in Therapeutic Guidelines and MIMS due to recent concerns of toxicity. Accumulation can occur when multiple courses are repeated within a short time frame, when colchicine is prescribed with other medications that inhibit its metabolism leading to accumulation or the dose is not adjusted appropriately in the elderly or in renal/hepatic impairment.
According to the Therapeutic Guidelines, NSAIDs should be used first line for acute gout. Colchicine should only be used when NSAIDs are inappropriate.

New Oral Anticoagulants Update

New anti-coagulants (NOACs) are becoming more widely prescribed as an alternative to warfarin and for the treatment and/or prevention of venous thromboembolism. They include dabigatran, rivaroxaban and apixaban.

They should be prescribed and administered with knowledge of their actions and adverse effects.

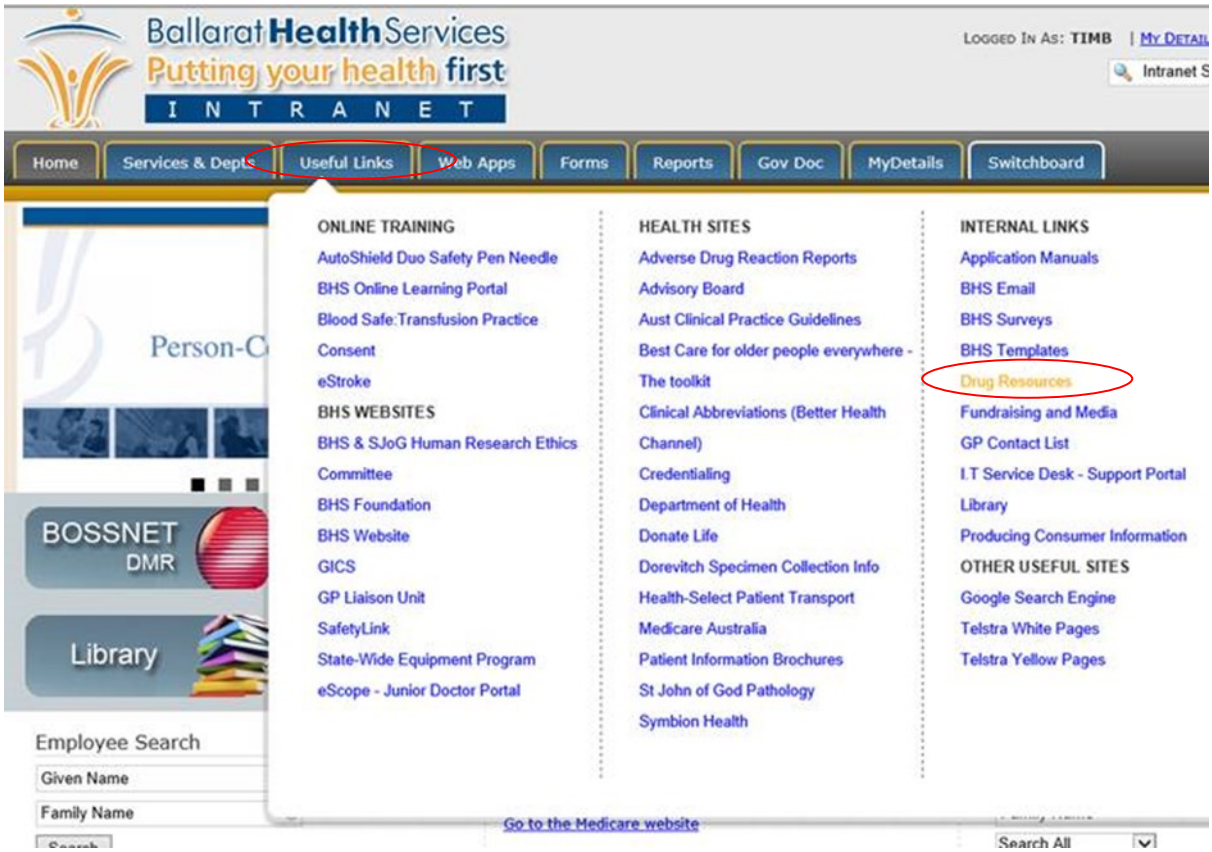
NOACs are renally cleared, thus patients' renal function should be checked prior to commencement and monitored throughout treatment. If the patient has renal impairment the medication should be reviewed with the dose reduced or the medication ceased, depending on the level of renal impairment.

NOACs levels are not routinely measured, in comparison to warfarin's effect which is easily measurable using the INR. Once administered NOAC's cannot easily be reversed.

NOACs have fewer drug interactions than warfarin, but can be more difficult to monitor its effects due to the lack of therapeutic levels.

NOACs should not be used in patients who are pregnant or breastfeeding.

Drug Resources



An audit from the library showed that staff often find it difficult or cumbersome to locate decision support tools on the intranet i.e. MIMS, AMH). A drug resource link has been added to the BHS intranet home page (in yellow in the picture). Clicking on this will take you directly to the available electronic drug resources.

RiskMan Reports

A Riskman report in November highlighted the importance of an independent double check as per CPP0287 Medication Administration. It reported an incident where two nurses had checked an intravenous order and administered 10mmol of magnesium in 100ml of normal saline over 1 hour. After change of shift when a new nurse went to administer the second order it was noted that the order had been written incorrectly, omitting the name of the additive "Magnesium".

Although no harm to the patient occurred, and the correct drug was administered, it highlighted that two nurses had checked the prescription that did not contain the additive details.

This highlights the important role of an independent double check in medication safety.