

Advisory Note

Western Australian Medication Safety Group (WAMSG)

SAFETY ALERT: HIGH CONCENTRATION INSULIN

Most insulin formulations available in Australia are a standard concentration of 100 units/mL in the form of insulin pen or vial.

There are two highly concentrated insulin products now available in Australia.

- 300 units in 1 mL glargine, trade name Toujeo® (registered by the Therapeutic Goods Administration but not subsidised under the Pharmaceutical Benefits Scheme)



- 500 units in 1mL, trade name Humulin R-500 KwikPen® (available under the Special Access Scheme)



These products are 3 to 5 times the concentration of standard preparations currently available in Australian hospitals. **There is a high risk of prescribing, dispensing and administration errors due to confusion between product strengths.**

High concentration insulin preparations are not listed on the Statewide Medicine Formulary and will require an Individual Patient Approval from the local Drug Therapeutics Committee (DTC) before initiation in a WA public hospital. The majority of patients will be commenced on these high concentration insulin pens in primary care. There is a need for clinicians to be aware that these products exist and how to manage and store patient's own supply safely.

If high concentration insulin is clinically required, WAMSG recommends an individual risk assessment is made for each patient; ideally, high concentration insulin products are discontinued whilst the patient is in hospital, and alternative standard treatment prescribed.

WAMSG recommends that WA hospitals preferentially use individual patient supplied insulin pens and discourage the use of vial supply options of any high concentration insulin.

If the decision is made by the DTC to commence high concentration insulin inpatient therapy, careful attention to reducing the risk of medication incidents should be considered.

Patients prescribed high concentration insulin products in the community may bring their own supply into the hospital. A process of storage (prescription, and administration- if appropriate) of these products needs to be in place to assist in the safe management, during hospitalisation.

Recommendations for safe use of high concentration insulins

- Concentration of insulin and brand name must be clearly annotated on prescription orders so the correct concentration is chosen for dispensing and administration. Ensure clinical staff are aware of the availability of Toujeo[®] insulin/ Humulin R U-500[®] insulin and the difference in relation to 100 units/mL insulins.
- Utilise the clinical handover process to communicate that the patient is receiving high concentration insulin and to alert clinical staff to the uncommon insulin treatment.
- High concentration insulin should NEVER be removed from a disposable injector pen.
- Ensure storage enables separation from other lower concentration insulin preparations.
- Introduce labelled warnings throughout the supply chain from dispensing through to administration (e.g. iPharmacy, fridge shelving, patient pens).
- Patients who are using high concentration insulin should self-administer insulin doses, whenever possible.
- In the event a patient is to be converted from Toujeo[®] insulin to Lantus[®], a dose reduction is required as they are not bioequivalent.

In all cases, clinicians must give clear guidance to the patient on discharge depending on any decision to change or continue treatment during hospitalisation.

Health services are urged to circulate this alert to relevant medical, nursing and pharmacy staff and consider options for safe prescribing, dispensing, administration and storage of high concentration insulins to mitigate risks of clinical incidents and ensure safe patient care.

Signed by:
Neil Keen
Chair, WAMSG