SAFETY WHEN GIVING INSULIN

A Rapid Response Report by the National Patient Safety Agency outlines how risks associated with insulin administration can be minimised to prevent harm.

Why do we need to change practice?
Using insulin is generally safe. However, there is a potential for serious harm if it is not administered and handled properly.

Diabetes affects about 2.3 million people in the UK; the National Service Framework for Diabetes (2003) estimates that 15% of people with diabetes in England have type 1 disease.

Common errors are inaccurate dosing and administration of insulin, which can lead to too much circulating glucose (hyperglycaemia) or too little circulating glucose (hypoglycaemia).

The National Patient Safety Agency (NPSA) received 3,881 wrong dose incident reports involving insulin between August 2003 and August 2009. These included one death and one severe harm incident caused by tenfold dosing errors that had resulted from abbreviating the term “unit.” The abbreviation “U” for units can be misread as “0,” which can lead to 10 times the required dose of insulin being given; “1 U” can be read as a requirement for “10” units. Similarly, “IU” can be read as either “1 U” or “10” units.

Three deaths and 17 incidents reported were the results of an intravenous syringe being used instead of an insulin syringe to measure and administer insulin.

In June 2010, the NPSA issued a Rapid Response Report (RRR) on the risks of administering insulin, with the aim of making practice safer. The report is aimed at all healthcare professionals who are involved.

FIVE THINGS TO MAKE PRACTICE SAFER IN YOUR HOSPITAL

1. Never use intravenous syringes to give insulin. Use an insulin syringe or commercial pen device to measure regular and single insulin doses. The use of intravenous syringes is an error-prone method that has resulted in patient deaths.

2. Don’t use an IV syringe to measure insulin for IV infusion. Use an insulin syringe to measure and prepare insulin for an intravenous infusion.

3. Always use the term “unit” – and write it out in full. Use the term “unit” in all situations. Abbreviated forms of unit, such as “U,” “IU” can be misread – for example, 10U could be read as 100. Abbreviations should never be used to avoid dosing errors.

4. Know what you’re doing. Ensure that you have had sufficient training to enable you to administer insulin safely.

5. Test equipment regularly. Ensure that all automated blood glucose monitoring equipment is subject to regular testing and calibration.

WHAT SHOULD MY TRUST BE DOING?

The NPSA rapid response report identified key actions for organisations and frontline staff to make practice safer.

The NPSA has asked your organisation to:

- Ensure that all clinical areas and community settings have adequate supplies of insulin syringes and subcutaneous needles, and that these can be obtained at all times;
- Ensure that a training programme is in place for all healthcare staff who are expected to prescribe, prepare and administer insulin;
- Review policies and procedures for the preparation and administration of insulin and insulin infusions to ensure compliance with the recommended actions. This should include considering the supply and use of infusion products that are ready to administer.
ISULIN IN HOSPITAL

with the prescribing, preparation and administration of insulin. Nurses are the most likely profession to be involved in the final process of insulin administration and so play a vital role in ensuring the recommendations of the report are implemented in practice.

Serious reported incidents include: Intravenous syringes have graduations in ml, unlike insulin syringes which have graduations of units of insulin. Errors have arisen from the use of intravenous syringes for insulin administration. Here are some examples of text from incident reports:

- Patient given 0.8ml of Novomix 30 insulin instead of 8 units. Nurse thought 1 ml syringes were the same as insulin syringes.
- When setting up GKI infusion used wrong syringes and added incorrect amount of insulin – 1.2ml instead of 12 units.

Errors also occurred because abbreviations such as "U" or "IU" for units were added to the intended dose. This led to misreading and a wrong dose being given:

- Patient fitted with hypoglycaemic event, became agressive and confused. Blood glucose 3.1. Patient had been given 44u Insulatard in the morning instead of 4u as prescribed. Dagmar Luettel, clinical reviewer; Anna Bischler, senior pharmacist, NPSA

HOW TO USE THE RAPID RESPONSE REPORT TO CHANGE PRACTICE

Susan Stokley, lead diabetes specialist nurse, Surrey and Sussex Healthcare Trust, explains why the RRR is right to focus on improving education to reduce errors.

"Insulin is a lifesaving medication used widely among hospital patients. If prescribed or administered inaccurately, that has the potential to produce real harm. We aim to ensure that insulin administration is given paramount importance.

"It is so important for us to ensure that training and education is in place. Education is rightly the focus of the RRR on insulin administration.

"We are promoting e-learning at our trust and supporting staff to complete the NHS Diabetes e-learning course in insulin administration, as recommended in the RRR. We have set aside specific times in the training rooms when staff can log in and complete it without being interrupted. We are also looking at whether e-learning should be a part of mandatory training.

"The issue of insulin administration is highlighted in all training sessions, such as insulin handover, for all staff including doctors and pharmacists. We have ThinkGlucose champions on each ward and also run the Management of Diabetes in Hospital Clinical Areas course, accredited by the University of Warwick, which promotes the knowledge of diabetes among all health professionals. We are prioritising insulin syringes, and insulin pens are to complete the course this year.

"The hospital intranet has slides for training which are easily available at tinyurl.com/diabetes-inpatient-audit.

"We have a specific storage cupboard for diabetic equipment. On the inside of the doors are posters that promote the knowledge of diabetes, including the Management of Diabetes in Hospital Clinical Areas course, which is accredited by the University of Warwick. The cupboard has helped us to keep a handle on stock levels and has really improved accessibility to insulin syringes and other equipment.

"Our drug charts are already specific about units that should not be used rather than any abbreviation, and we have decided to provide staff with pre-filled, fast acting insulin (for sliding scales), as recommended by the RRR. Presently, staff must draw up 50 units of insulin and add this to 50ml of saline. Taking away one of these steps reduces the window for error.

"The report highlights the importance of looking at other ways to reduce errors in insulin administration and this has helped us address issues that have been on the back burner for years, such as patient self-administration. We have moved much nearer to putting plans into action."

EVERY REPORTED INCIDENT COUNTS

Following the announcement of the abolition of the NPSA, it remains important for all NHS organisations in England and Wales to continue reporting patient safety incidents through the National Reporting and Learning System. Every patient safety incident counts and can be used to identify and address problems that could be prevented in the future.

DID YOU KNOW?

- A forum has been set up to provide an opportunity to share examples of best practice and discuss ideas to promote insulin safety. Do you want to find out more? Do you have something that you can share to help others tackle this safety issue? You can access the forum thread from tinyurl.com/npsaguidance.
- You can also access additional resources related to insulin safety and listen to recorded webinars from the Patient Safety Focus Week at the above link.
- The second National Diabetes Inpatient Audit will be carried out at the beginning of November 2010. Further information is available at tinyurl.com/diabetes-inpatient-audit.