Local report: Steps to reduce insulin incidents in Sandwell and West Birmingham Hospitals NHS Trust

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Sandwell and West Birmingham Hospitals (SWBH) NHS Trust employs around 7500 people to deliver care across two main hospital sites covering a bed base of 850 patients (Sandwell General Hospital and Birmingham City Hospital). There are more than 38 000 admissions each year, and at any given time as many as 1 in 3 admitted individuals have diabetes and nearly 20–30% of these will be treated with insulin. The National Patient Safety Agency (NPSA, 2011) highlighted a number of patient safety incidents relating to insulin errors with issues involving the administration, prescribing and omission of insulin all resulting in harm.

Results from the National Diabetes Inpatient Audit (NaDIA) 2013/2014 for SWBH highlighted poor results compared to results for England as a whole, particularly with regard to hypoglycaemia management by staff (SWBH, 2014). In 2014, there were 42 reported incidents relating to insulin prescription, administration or dispensing within the Trust (errors included wrong dose and timing of insulin, failure to prescribe insulin and the omission of insulin). There was also one "near miss" incident where a prescription used the abbreviation "U" rather than the word "unit" (but fortunately in this case it did not result in patient harm). Root cause analysis of diabetic ketoacidosis and hypoglycaemia cases in December 2014 highlighted additional problems including a significant lack of understanding, skill and diabetes knowledge amongst nursing staff and junior doctors – particularly regarding the safe use of insulin (despite considerable effort to up-skill and educate staff by our hospital inpatient diabetes specialist nurses).

The Virtual College online insulin safety module had been purchased by the Trust but uptake of this training module had been consistently poor. These findings provided the impetus for us to reflect on and improve inpatient diabetes service provision within our Trust.

New initiatives

To improve staff knowledge and understanding of insulin therapy and reduce insulin errors within the Trust, a number of initiatives were implemented:

1. In 2015 the PCDS, in association with TREND-UK launched "Six Steps to Insulin Safety", a free online e-learning module for all healthcare professionals who manage people on insulin, with the overall aim of improving knowledge and understanding of the many types of insulin, action profiles and timing (including hypoglycaemia, diabetic ketoacidosis and variable rate insulin management). Hospital staff were encouraged to complete this module.
2. An agreement that there would be formal discussion of all serious insulin- and drug-related hypoglycaemia incidents (reported by Hospital Risk department) in our monthly Quality Improvement directorate meetings (organised regularly since April 2015) and monthly junior doctor prescription error feedback – for reflection and discussion with their educational supervisors (via a hospital incident reporting system called SAFEGUARD).
3. A new insulin prescription chart with pre-printed units was introduced in May 2015.

Promotion of the Six Steps to Insulin Safety e-learning module

The Six Steps to Insulin Safety e-learning

"Even though we are in the early days of its implementation, we feel that the simple and effective online insulin safety module is essential baseline learning for all hospital staff directly involved with people who use insulin."

module has been introduced as an online module for all Junior Doctors in the Trust as part of mandatory training and we hope to introduce the same requirement for all registered nurses in SWBH from December 2015.

This new module is being promoted through staff communications, junior doctor induction and local Think Glucose champions' meetings and updates. Staff can access this module through the local Trust intranet on QUEST and are regularly being encouraged to do so.

Our Diabetes Inpatient Specialist nurses on both Trust sites are currently targeting wards with high insulin incidents and encouraging staff to complete the module with support from ward matrons.

Uptake of the insulin safety module

To date, 27 Trust Foundation Year doctors and 18 Core Medical Trainees in the Trust have completed the module (with 75% evaluating it as "very good" and "useful"). Pharmacists in the Trust are also being encouraged to complete the module. We have had discussions with our Clinical Commissioning Group (CCG), and this module has been recently introduced for residential and care home staff in our CCG. In the past 5 months, 73 staff members have completed the module, including 28 nurses.

Results and conclusion

Feedback from the insulin safety module has been positive, and has included the following comments: "important information about minimising risks to diabetes patients"; "[the module is a] good reminder and useful summary"; "very informative – learnt lots".

Within 6 months of introducing these initiatives, insulin incidents (e.g. wrong insulin, wrong dose and missed insulin doses) have fallen from 29 to 17.

Recent trust-wide online surveys on hypoglycaemia have provided very informative results. A survey of 73 staff nurses revealed that 20% of staff members were still unaware of the Trust's hypoglycaemia guidelines and 30% were only "somewhat confident" in managing hypoglycaemia. In a separate survey, 55% junior doctors felt they required more training and education to manage diabetic ketoacidosis.

It is encouraging that these initiatives appear to be improving awareness and confidence amongst staff in relation to insulin management and safety. There is still more to do in terms of up-skilling and training, and we shall be specifically targeting these gaps to improve things in future. Even though we are in the early days of its implementation, we feel that the simple and effective online insulin safety module is essential baseline learning for all hospital staff involved with people who use insulin, as well as those who have diabetes. We believe that this, alongside the other measures described will help to significantly reduce future insulin-related harm in hospitals. ■

National Patient Safety Agency (2011) *Patient Safety Alert NPSA: The adult patient's passport to safer use of insulin. NPSA, London.* Available at: http://bit.ly/28PiwrN (accessed 16.05.16)

Sandwell and West Birmingham Hospitals (SWBH) NHS Trust (2014) *Quality Account Appendix 2013/14.* SWBH, Birmingham. Available at: http://bit.ly/28NwiJl (accessed 16.05.16)

To access the free module online:

Visit the CPD centre at www.cpd.diabetesonthenet.com. The module will take approximately 1 hour to complete and, on successful completion of a short assessment, users will receive a downloadable certificate to put towards their CPD log.