Winners of the Rowan Hillson Insulin Safety Award 2016: Best joint pharmacy and diabetes team initiative to improve insulin and prescribing safety in hospital

Derby Diabetes Inpatient Improvement Projects (DIPs)

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CASE FOR CHANGE

Derby Teaching Hospital Foundation trust (DTHFT) has 1139 beds and 1.8 WTE DSN supporting inpatient diabetes care with 0.2 podiatry and 0.6 consultant time. They cover a population of 637,900, of which 35,003 have diabetes. The NADIA data from 2012 and 2013 showed that they were having significantly more medication errors, prescription errors, management errors, insulin errors and incidence of severe hypos compared to the national average. In addition to this, the trust were performing poorly in routine foot checks for patients with diabetes.

175 errors were identified through incident reporting in 2013 -2014, and, in addition, the trust had a never event in 2014, the cause of which was multifactorial.

WHAT DID THEY DO?

A multidisciplinary team was established in response to the never event and the near misses. It comprised of a lead DISN, senior pharmacist with special interest in diabetes, Head of Patient Safety, Quality and Improvement and a Consultant Diabetologist.

The overall aim of the team was to improve the standards of all aspects of inpatient diabetes care throughout the hospital. With this in mind, the team analysed all aspects of diabetes care using various sources of information including NADIA, incident reporting, analysis of episodes of hypoglycemia and hyperglycemia (using an Abbott point of care glucometer). They then ran a package of several mini projects to address the problems which were identified.

HOW DID THEY DO IT?

Mini project 1 :- Optimisation of Electronic Prescription and Medicines Administration (EPMA)

The introduction of EPMA in 2012 had helped to reduce prescription errrors from 33.9 % (NADIA 2012) to 14.9% (NADIA 2013) by avoiding never events such as the use of written abbreviations (U, IU). To adress its limitations and further improve safety, the team collaborated with pharmacy and the IT department and introduced the following changes:

1. In EPMA, drop down options especially for all short/rapid acting insulin and biphasic insulin were restricted to meal times.
2. Highlighted that the rapid/short acting insulins should be given with meals.
3. Alerts on electronic prescribing triggered to prevent prescription of 100 units of insulin (to avoid misinterpretation of 100U/ml as the dose)
4. Alerts when prescribing stat doses of Actrapid to prevent over prescribing.

5. Nurse input of blood glucose on EPMA, in addition to dose and time of insulin administration.

Mini project 2 :- Increased Staff awareness and education.

1. Strong ties were formed across the hospital through link nurses.
2. One Stop education for 'Safe Use of Insulin' was made an essential training for all nurses.
3. Insulin safety education was delivered to all grades of junior doctors in different settings including induction and their own teaching slots.
4. Credit card size information packages for insulin profiles, flow chart for hyperglycaemia and hypoglycaemia management guidelines for doctors and nurses.
5. Insulin profile charts with pictorial representation of the insulin pharmacokinetics on all drug trolleys and drug rooms.
6. Targeted education to specific wards and HCPs as needed.

Mini Project 3: Regular Quality Assurance

Even with the above solutions, the team continued to see errors especially with suboptimal management of hypoglycaemia and hyperglycaemia, and poor uptake of foot screening for patients with diabetes. This prompted the team to envisage a system which would ensure quality assurance. They included the following in the ward assurance audits done by senior nurses in all wards on a monthly basis:

1. Appropriate management of hypos
2. Appropriate management of hyperglycemia
3. Foot screening for all patients with diabetes

The momentum of the entire package of projects were driven by regular meetings with review of all the errors (DATIX and Hypo) and the progress of the projects.

WHAT DID THEY FIND?

The following were used to measure success:

1. Incident reporting
2. Monthly ward assurance
3. NADIA

The monthly meetings were used to keep track of the changes made and progress. The incident report showed a reduction in the total number of incident reports.

	2013-14	2014-15	2015-16
Total incident reports	175	144	133

Implementation of ward assurance improved the awareness of the importance of foot checks and appropriate management of hypoglycemia and hyperglycemia among the nursing staff and health care assistance. This has prompted more attendance in insulin safety training sessions.

The teams successes were highlighted in the NADIA 2015 results:

Area of Improvement	*2013 (%)*	*2015 (%)*
Medication errors	41.4%	27.1%
Prescription errors	14.9%	8.3%
Management errors	29.9%	19.8%
Insulin errors	20.7%	10.4%
Foot risk assessment during stay	17.1%	50.0%
% Severe hypo	9.8%	4.4%

These changes have led to increased awareness and motivation among hospital staff working with people with diabetes. Allied health care staff have initiated measures to make a difference to various aspects of inpatient diabetes care.

IMPACT AND ADAPTIBILITY

This initiative has substantially improved the quality of care for inpatients with diabetes in Derby hospital. It's success is reflected in the large improvements reported in NADIA 2015.

Remarkably this significant improvement in patient care has been delivered with minimal additional cost to the trust; through better utilisation of existing resources. The formation of a multidisciplinary inpatient group which was able to facilitate change is a realistic initiative for any hospital to achieve. The Insulin safety group (ISG) which included the pharmacist, DISN, head of patient's safety, quality and improvement team and the consultant Diabetolgist met regularly for an hour every month to monitor progress. The head of Patient Safety, Quality and Improvement team played a key role in facilitating the ISG action plans across the hospital.

LEARNING

1. The key learning point was that you can significantly transform the care provided for the better by thinking and working differently without additional resources.
2. Formation of a dedicated multi disciplinary In patient group which meets regularly is vital.
3. Involvement of key stakeholders from the management team such as the Head of Patient Safety Quality is important in rolling out a new initiative effectively across all directorates of the hospital.

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