Joint British Diabetes Societies for In-Patient Care (JBDS-IP)

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

How to enter:

1. Email your completed entry to: Christine Jones, JBDS Administrator at christine.jones@nnuh.nhs.uk

   All entries must be emailed by: 31.01.17

2. Please submit any supplementary materials to support your initiative, as these will be considered as part of the judging process.

3. **Please note this competition is only for projects undertaken in the last 3 years i.e. since 1.1.2013.**

Your contact details:

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Post: Consultant

Trust name and address where work was undertaken: Royal Derby Teaching Hospital Derby teaching Hospitals NHS Foundation Trust

Additional contributors: Beverley Eaglesfield, Dominic Moore, Sandra Mir, Dr Emma Wilmot, Prof Frances Game, Dr Roger Stanworth.

Title of entry (10 words maximum)

Derby Diabetes Inpatient Improvement Projects (DIPs)

Brief summary of entry
Provide a short summary of your initiative in **no more than 200 words (The box will expand)**

Inpatient diabetes care in our service was suboptimal: our 2012 & 2013 NADIA results were below the national average and there had been a number of insulin related incidents and near misses reported. Things came to a head In 2014 when a never event occurred which was related to insulin administration. As a result of this, I along with my team of professional colleagues who were passionate about patient safety decided to form the Derby Insulin Safety Group to ensure that this would not happen again. The group comprised a lead DISN, Senior Pharmacist, Head of Patient Safety, Quality and Improvement and Consultant Diabetologist. We met monthly to analyse incident reports, any significant or never events and objective data from point of care testing, with the overall aim of improving key NADIA outcomes. A package of projects were designed with the aim of improving inpatient diabetes care. Notable developments included:

1. Modification of electronic prescriptions to minimise risks
2. Rolling out of staff education through different methods
3. Targeted education of specific wards
4. Including key diabetes parameters in the monthly ward assurance audit performed by senior nurses

Background/Situation analysis/Innovation (300 words maximum)

Briefly provide the background and rationale for the initiative. From this the judges should be able to understand why there was a need for the initiative to be undertaken. Explain what makes your initiative innovative or pioneering.

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. We cover a population of 637,900 , of which 35,003 have diabetes. Our NADIA data from 2012 and 2013 showed that we 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, we were performing poorly in routine foot checks for patients with diabetes.

We had 175 errrors identified through incident reporting in 2013 -2014, and ,in addition,we had a never event in our hospital in year 2014, the cause of which was multifactorial. A multidisciplinary team was established in response to the never events 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 presence of the Trust Head of Patient Safety, who has a nursing background, in the group was crucial in implementing the recommended changes in an effective and timely manner across the organisation. This combination of multi-disciplinary professionals made it possible to effectively deliver change at a number of different levels: including the nursing team, pharmacist and doctors in a wide variety of areas.

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, we 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). We ran a package of several mini projects to address the problems which were identified.

Objectives (200 words maximum)

State clearly the objectives of the initiative(s).

The objectives were to improve the standards of all aspect of inpatient diabetes care in our hospital. The initial steps of the ISG were to analyse baseline data including NADIA, Datix reports and the root cause analysis (RCA) from the never event. It became clear that we needed improvements in several areas and we prioritised and worked through each.

The RCA identified several potential sources of error including prescribing, dispensing of insulin and its storage, transport of medicines when patient moves wards, management errors in insulin administration and a lack of understanding about insulin pharmacokinetics.
The chief objectives were :

1. To reduce
    a. medication errors
    b. prescription errors
    c. insulin errors
    d. management errors
2. Improve staff knowledge through education
3. Improve foot checks for patients admitted with diabetes.
4. To prevent all serious events, never events and to reduce all diabetes related incidents.
5. To improve patient experience

Project plan/methods (400 words maximum)

Please outline the method(s) you used to achieve your objectives. The judges will also be looking for a clear rationale for your method(s).

The ISG intiated 3 mini projects in an effort to bring about improvements. These include:

<u>Mini project 1 :- Optimisation of Electronic Prescription and Medicines Administration (EPMA)</u>

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, we collaborated with pharmacy and the IT department and introduced the following changes: (Supporting Material)

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. We formed strong ties 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

Although we implemented many of the above solutions, we continued to see errors especially with suboptimal management of hypoglycaemia and hyperglycaemia, and poor uptake of foot screening for patients with diabetes. This prompted us to envisage a system which will ensure quality assurance. We decided to include 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.

Evaluation and results (400 words maximum)

Use this section to report the results and demonstrate how you measured the success of your initiative/project

We used the following to measure success :

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

We used our monthly meetings to keep track on the changes made and the progress we were making. The incident report showed reduced number of total incident reports.

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

Implementation of ward assurance has 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. There has been requests for targetted teaching regarding hypos for HCA, who generally tend to do the glucose monitoring. The ward assurance data is as follows.

The proof that our efforts were successful 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 led to increased awareness and motivation among the 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. For instance, a staff nurse from an oncology ward designed a poster stressing the importance of diabetes care in inpatients including foot checks in patients with diabetes and how to do it, displayed with the guidelines for hypoglycaemia and hyperglycaemia. This was displayed in a prominent part of the ward, fascilitating dissemination to other health care staff involved in diabetes inpatient care. (Supporting material) The improved awareness and pro active attitude of the staff was reflected on the very good ward assurance data for diabetes from this ward.

The fact that ISG was voted by hospital staff as winners of the Trust 'Celebrating Success award' is an indication of its success in increasing staff awareness.

Impact (300 words maximum)

Describe the impact of the initiative(s) for in patients with diabetes and how this was measured.

This initiative has substantially improved the quality of care for inpatients with diabetes in our hospital. It's success is reflected in the large improvements reported in NADIA 2015 and our local incident reporting as descibed above. This initiative has thrown the spotlight on gaps and areas of possible improvement in the service.

We were congratulated by the NADIA team for the significant improvement achieved.

The trust board was very appreciative of the work and our contribution in improving patient care. We won the 'Celebrating Success' award for the criteria 'Right first time"

I have been invited to speak in Diabetes UK 2017 conference to highlight the sucessess achieved and share best practice.

Adaptability, Cost and Sustainability (300 words maximum)

How easily could your initiative(s) be adapted to other hospital Trusts? Please state whether any other Trust(s) has adapted your initiative(s) and/or any steps you have taken to promote wider dissemination of your initiative(s).

Please demonstrate the sustainability of your initiative(s). Include the cost incurred and the source of funding i.e. acute trust or CCG or any other means. Describe the process by which the funding has been sought and the challenges experienced.

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.

The minor costs incurred for printing of the insulin profiles and credit card sized info for newly joined nurse / junior doctors were incurred by the hospital.

Our trust had already invested in electronic prescribing and EPMA was introduced in 2012. Making changes in EPMA was easily achievable once we had the high level management support. Our IT and pharmacy team worked closely with us.

We have implemented the point of care testing with an Abbott glucometer which can be monitored remotely by the DSNs for keeping a track on hypoglycaemia and hyperglycaemia.

The time for One Stop Safe insulin training is in now built in the job plan of lead DISN.

All the time of the consultant lead was outside job plan / SPA time.

For the sustainability of the changes and further improvement we need more DISN time and dedicated time for the consultant lead. We have applied for the NHS England Transformation Bid with the STP submitting the application on our behalf.

Learning (300 words maximum)

One of the main aims of the competition is to enable learning and sharing of initiatives for the benefit of inpatients with diabetes. Use this section to outline any learning(s) that can be taken from the initiative(s) and/or challenges faced along the way that could be transferred to other Trusts looking at introducing similar initiatives.

There are several learning points from this initiative :

1. The key learning point was that we 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.
4. All the mini projects we have implemented is reproducible
    a. Electronic prescription and its optimisation.
    b. Point of care hypoglycaemia / hyperglycaemia analysis and it's proactive management. At present we do not have DISN time to deliver this on a daily basis and target wards. Instead we run hypo reports on a 1-2 monthly basis and identify problem wards and target education in these wards.
    c. Insulin profiles sheets in all medication trolleys

d. Clinical guidelines and insulin profile in intranet.
e. Credit card size pocket guide for all new nurses an junior doctors.
f. Active teaching of FY1, FY2 and CTs, quite early on in their training.
g. Availability of commonly used insulins in key wards.
h. Safe use of insulin - an essential training to all nurses.
i. Link nurse training
j. Inclusion of foot checks/ management of hypos and hypers in the monthly ward assurance for wards.
k. Analysis of incident reports, root analysis and implementing solutions.
l. Weekly pharmacy newsletter highlighting the errors.
m. Included Insulin as a critical medicine in the trust.
n. Value of foot examination was highlighted and promoted through screen savers in the trust computers.
o. We have conducted questionnaire surveys to evaluate knowledge and identify gaps.
p. We have introduced hospital menus stating carbohydrate counts.

Feedback from staff and patients (300 words maximum)

Please include a summary of any patient feedback and evaluations of the initiative(s). It will be helpful if you can provide (as supporting materials) the tools used to gather this information. If available please include summary of staff feedback to demonstrate their perspective on the initiative(s)' impact on the care of inpatients with diabetes in relation to improved insulin and prescribing safety.

Locally in our hospital, the ISG was recognised for its contribution towards improving the NADIA results. We got an email from trust board and medical director congratulating us and thanking us for the improvements.

We were winners of the 'Celebrating Success' Trust award for the category 'Right First time'. Celebrating Success is an annual event to reward staff who have made a real difference, showcasing the excellent work and achievements of our Trust. After the initial shortlisting, the winners are selected through popular voting.

We received an email congratulating us from the NADIA team for the improvements in NADIA 2015.

Our group has increased the awareness of diabetes care across the hospital. We have managed to motivate non specialist staff nurses to proactively improve the care of patients with diabetes. One such example is the initiative from one of oncology staff nurses in creating a poster to improve the awareness of foot checks, trust guidelines for hypoglycaemia nd hyperglycaemia and reduce errors in their ward. (See Supporting material). This has reflected on the improved ward assurance data.

We have noticed an increase uptake of the 'One stop education module' for insulin safety.

We were mentioned in the report presented in Westminster by Dr Gerry Rayman.

I have been invited by Dr Gerry Rayman to showcase what we have achieved through DIPS at Diabetes UK conference.

Supporting materials