



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

**The Rowan Hillson Inpatient Safety Award 2019
Best Inpatient Diabetes Educational Programme for Health Care Professionals**

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: 28.02.2019

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 1.1.2016.**

Your contact details:

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Trust name and address where work was undertaken: University Hospitals of Leicester NHS Trust

Additional contributors: Helen Atkins, Fiona Adlam, June James, Mike Bonar, Eleanor Meldrum

Title of entry (10 words maximum)

ITS Diabetes – Inpatient Diabetes Training & Support – implementing an educational strategy for frontline staff

Brief summary of entry

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

ITS Diabetes is a blended educational toolkit designed to deliver key safety messages to frontline staff in order to improve quality of care for inpatients with diabetes. The toolkit is accessible to medical, nursing and pharmacy staff. Components include face to face training, e-learning module, monthly newsletter, social media communications with competency document, flashcards and web-based handbook in production. Messages and topics covered are consistent across the resources available to ensure clear unambiguous messaging. Ethos of delivery and content is of multiprofessional team working, appropriate knowledge and skills and effective communication between the teams around the patient

being fundamental to safe care. Implementation of the education strategy/toolkit has been supported by our Executive team and resulted in demonstrable improvements in measures of quality of care. Feedback from attendees has been positive. This toolkit can be adapted for specific staff groups and could be implemented in any NHS trust at low cost.

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.

University Hospitals of Leicester NHS Trust (UHL) is a large acute trust with >1100 beds. With 3 hospitals bed occupancy for patients with diabetes is between 18.2 – 23.3%. There are between 4.5 – 9.7% patients with type 1 diabetes and 37.3% - 42% patients treated with insulin depending on site. NaDia 2017 data highlighted issues with both medication and insulin errors at all 3 sites in the trust.

	% of patients with diabetes who experienced a medication error	% of patients who experienced an insulin error
Leicester Royal Infirmary	39.1%	30.4%
Glenfield Hospital	36.5%	25.4%
Leicester General Hospital	45.8%	37.5%

In November 2017 the Care Quality Commission (CQC) issued a warning notice to our trust raising concerns around the safe use of insulin. A robust action plan was implemented across all clinical directorates focusing on supporting frontline non-specialist staff. Despite implementation of ThinkGlucose (toolkit directed at nursing staff) in 2014-16 the inpatient diabetes team had struggled to provide on-going regular education sessions. Data on medication errors highlighted an obvious gap in provision of education and training for doctors and pharmacists also. It was agreed that in order to make improvement all staff groups needed to be included in any educational strategy. Therefore implementation of a focused strategy to address educational requirement of frontline staff who prescribe, prepare or administer insulin was a key priority. The training offered needed to be accessible, relevant and focused on the key safety messages. Delivery across all 3 sites had to be sustainable and outcomes in terms of insulin management needed to be monitored.

UHL had agreed in 2017 that Insulin Safety training was essential to role for all staff who prepare, prescribe or administer insulin. However training was via an external e-learning package. However non-specialist staff feedback that this training was difficult to access, too detailed and contained content which was less relevant to the inpatient setting. Compliance with this training was poor.

Objectives (200 words maximum)

State clearly the objectives of the initiative(s).

Key objectives of this initiative:

- Develop and deliver an effective inpatient diabetes educational toolkit which would be applicable or adaptable to meet the needs of doctors, nurses and pharmacists within the trust.
- Ensure strategy was deliverable and sustainable with current workforce capacity in the diabetes team – develop consistent curriculum of key safety messages which could be delivered by other HCP, eg , Practice Development Nurse team.

- To increase compliance with Insulin Safety training.
- Agree outcome measures to monitor
- Evaluate user feedback
- Evaluate outcomes
- Evidence improvements in outcomes – insulin medication errors, non-insulin medication errors.
- Create a supportive positive reporting culture in which staff feel comfortable to identify and challenge poor care but also feel empowered to improve care in their areas.

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).

- Agreed key safety messages which were consistent across all training
- Defined and developed key elements of the toolkit
- Agreed and developed supporting resources
- Implemented face to face training for doctors and nursing staff across 3 hospitals – led by Consultant Diabetologist, Diabetes ANP, inpatient DSN and practice development nurses
- Implemented e-learning for doctors and non-medical prescribers
- Circulated a monthly educational newsletter
- Set up dedicated social media account (twitter) to share educational messages
- Developed competency documents for self assessment – doctors
- Planned an externally hosted web-based junior doctors inpatient diabetes handbook – accessible via all platforms (PC, ipad, smartphone, laptop, etc).
- Evaluated outcomes by monitoring compliance with training, using an abbreviated version of the NaDia audit (“mini-NaDia”) – data collected quarterly – and monitoring datix reporting and in-hospital DKA (and laterly NaDia Harms).

Key topics covered in toolkit components

Type of diabetes and who needs insulin
 Common insulin errors (real-life scenarios)
 Safe use of insulin including prescription, preparation and administration
 Intravenous insulin (including peri-operative in surgical areas)
 Capillary blood glucose targets / monitoring inpatients with diabetes
 Hyperglycaemia
 Hypoglycaemia
 Recognition of a “NaDia Harm”
 Prevention and treatment of the diabetes emergencies / “NaDia Harms”
 Feet and feeds
 SGLT2-i and risk of DKA
 Reflection on own practice, changing practice, championing good practice, challenging poor practice and team working to keep patients with diabetes safe in hospital.

ITS Diabetes toolkit components	Doctors and non-medical prescribers	Nurses	Pharmacists
Powerpoint slide deck for face to face training	Since Sept 2017	Since March 2018	Pre-registration and junior pharmacy staff since 2016
ITS Diabetes Insulin safety e-learning	Since Sept 2018	Currently externally hosted module (since	Since Sept 2018 (pharmacy staff are

module (in-house)		2017) but swapping to in-house ITS diabetes e-learning module March 2019	required to complete the doctors and non-medical prescribers module)
ITS Diabetes web-based junior doctor handbook of inpatient diabetes care	Due to complete March 2019		
Flashcards for “mini-teach sessions”	Due to complete March 2019 – set will be appropriate for all staff groups		
ITS Diabetes key competencies for Junior doctors – self-assessment / reflective practice	Due to complete March 2019		
ITS Diabetes (Inpatient Diabetes Training & Support) Newsletter	Since Nov 2018		
ITS Diabetes (Inpatient Diabetes Training and Support) twitter account @ITS_diabetes_	Since Nov 2018		

Evaluation and results (400 words maximum)

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

At the inception of the implementation of this education strategy measures were agreed. It was agreed that we needed to evidence the effectiveness of our intervention. We also agreed we needed to measure outcomes which evidenced objective improvements in patient care as well as subjective feedback from staff. The following were evaluated:

- “mini-NaDia” data collection – collected quarterly from December 2017. Data collected on medication/insulin errors and collected by same small group of staff (Consultant, DSN, specialist diabetes pharmacist) each time to minimise variation between auditors and ensure consistency in approach to interpretation of patient data. At baseline percent of patients experiencing an insulin error was 45.5%. This reduced by 50% to 22.8% in December 2019. Improvements have been seen in 12 / 13 data fields. Full data given in supporting materials.
- In-hospital DKA – Jan 2018 we initiated an in-house review process of in-hospital DKA episodes as anecdotally we were aware of approximately one episode per month. Sept 2018 NaDia Harms continual audit commenced. Since Sept 2018 there have been no reported episodes of in-hospital DKA.
- Compliance with insulin training safety – in April 2018 insulin safety training was included in the electronic training dashboard for all medical, nursing and midwifery and pharmacy staff. This training is essential to role and renewable annually. Staff are required to attend face to face training initially and then at annual renewal may complete training either by face to face option or e-learning option. At baseline (May 2018) compliance for nursing staff was 56% and for medical staff 40%. This has progressively improved and in Feb 2019 figures were 81% for nursing staff and 62% for medical staff. Engaging medical staff remains a challenge however we are now able to issue automatic reminder emails to staff who are not compliant and so

are hoping this may prompt staff to complete training. Feedback from staff attending training is discussed later in application.

- Datix reporting – we hoped to see an increase in datix reporting (electronic incident reporting) as staff became more aware, confident to identify and report poor practice and knowledgeable regarding correct management. Our aim was to see an increase total reports but no rise in major harm incidents or serious incidents.

Results below:

Datix incidents involving:	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19 YTD
Keyword "Diabetes" Total incidents:	397	420	418	468	488	626
Keyword "insulin" Total incidents:	214	212	205	205	246	339
No harm	152	141	155	153	182	277
Mild	61	69	46	50	61	61
Moderate	0	2	4	2	2	1
Major	1	0	0	0	1	0

Impact (300 words maximum)

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

Introduction of an Insulin Safety education strategy, aimed at training frontline staff, and using a cohesive toolkit - ITS (Inpatient Diabetes Training & Support) Diabetes has resulted in significant improvements in patient care in UHL. We can evidence improvements in objective measures as well as numbers trained and subjective feedback. We have halved the percentage of patients experiencing an insulin error, and percentage of patients experiencing a non-insulin error has fallen to one quarter of baseline value. Key safety messages have been kept simple, relatable to clinical ward practice and frequently repeated via a number of different training resources or media. There appears to be a real improvement in avoidable harm in the form of in-hospital DKA with no reported incidents between Sept 2018 and Feb 2019. Uptake of training has improved over the period of implementation and feedback is positive (see section below). Giving staff training options has improved uptake as has creating an in-house e-learning module which is easier to access and allows monitoring of completion/compliance. Data collected on datix reporting supports our view that by training, supporting and empowering staff and delivering training in a relevant format staff become more confident in recognising poor quality care. Reporting of incidents involving "diabetes" and "insulin" have increased since introduction of the education strategy but there has been no increase in moderate or major harms reported. An open positive supportive reporting culture facilitates improvements in patient care.

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.

Any trust could model an education strategy on ITS Diabetes. Once we have completed development of the complete toolkit we would be happy to share the concept and resources with trusts to adapt. Majority of material is in line with JBDS guidance and so transferable between trusts. Currently no other trust has adapted as far as we are aware. The ITS Diabetes twitter account is an open account and any healthcare professional can follow the account. ITS Diabetes has been discussed briefly at a recent JBDS meeting at which we stated we would be happy to share via any national forum.

This initiative is sustainable as the materials and resources can in the majority be accessed electronically or via e-learning module. Feedback from staff is that they very much value the face to face training (interactivity, opportunity to ask questions, adapt to staff in room, etc). Sustaining face to face training is dependant on capacity within inpatient diabetes team and relies on support from wider teams (Exec team, practice development nursing team). With Executive team high level buy-in sustaining manpower resources to deliver face to face training without compromising direct clinical contact time is possible. No funding required to develop e-learning as in-house team used. Funding was sought to develop the branding and web-based junior doctors handbook – this has been funded via NHSE transformation project (total cost tbc on completion).

Main challenges have been staff time to develop and deliver training however UHL has supported this work as a priority and staff have been released to complete this work. Frontline staff have also been supported to attend training.

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.

Shared learning from this initiative:

- Engage and gain support from senior executive medical and nursing leads as well as nursing and medical education leads
- Present your local data and highlight the harm which is occurring in your trust
- An education strategy must include doctors, nurses and pharmacists as well as other staff groups who have patient facing roles. A strategy that focuses on one particular professional group (eg, nurses) will not tackle the issues adequately.
- Be open to training multidisciplinary groups – there are benefits in terms of developing teams and good communication
- Agree the key safety messages which are important in your trust
- Be prepared to adapt your training based on feedback/review of clinical incidents
- Make the training clinically relevant – staff want to have something to take back to

their clinical practice, eg, a piece of new knowledge which will help them most days, a new idea to improve care on their ward

- Think about who can help you (eg, practice development nurses, pharmacists) in delivering the training
- Use a variety of resources to suit different learners
- Agree how you are going to evaluate and monitor compliance and outcomes
- Keep going – some days are better than others – but over time you will see the benefits evidenced in the measures.

Remember – ITS diabetes, ITS doctors, ITS nurses, ITS pharmacists, ITS patients, ITS together

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 the prevention and management of hypoglycaemia.

Feedback forms are provided at the end of every ITS Diabetes face to face training session. Two hundred and thirteen feedback forms were collected from a total of 442 attendees. Average scores (maximum score = 4) for each section on feedback form were: relevance 3.7, organisation 3.9, presentation 3.8, interest 3.7). Freehand comments from staff have been given in supporting materials. Adhoc email feedback on the e-learning module for prescribers – “I’m Mxxx, an SHO working over at GH this year. I just wanted to drop you an email to say that the diabetes and insulin elearning is a fantastic package, it covers everything that I am commonly asked to do as an SHO and is empowering to make sensible decisions from the information provided.

Thanks for putting all of this together!” “I did the online module and I would say it’s actually really easy to follow and really good. I particularly like the videos and I think it is overall very useful”

Supporting materials

The judges' core assessment of your initiative will be based on this entry form. However, we do recommend that you **support your entry** with relevant materials, as these will be made available to the judges and are often the deciding factor in short listing the finalists.

Supporting materials could include: IT based programmes, pamphlets, booklets, audits, events, reports, journal articles, evaluation documentation, websites etc.

Supporting materials along with your entry form should be submitted by email to christine.jones@nnuh.nhs.uk.

Closing date: 28.02.2019

The winners of the Rowan Hillson Insulin Safety Award 2018: “Best Inpatient Diabetes Educational Programme for Health Care Professionals” will be published on the Association of British Clinical Diabetologists (ABCD) and Diabetes UK website and will appear and be referred to in future journal articles. By submitting your entry, you will be consenting to your initiative being used for these purposes.