



A guide to improving insulin safety
on discharge from hospital for older
adults with diabetes.

www.hin-southlondon.org

hin Health
Innovation
Network
South London

Foreword

The case for change

Insulin is recorded as a high risk medication with over 5,000 patient safety incidents reported between 2003 and 2009 in England and Wales alone (NPSA 2010). If insulin is not prescribed and administered in a safe and effective manner it can lead to significant patient harm, or even death. National data indicates that drug errors remain a significant risk area within the NHS.

During hospital discharge errors can occur if the process is not well planned and patients who are elderly or vulnerable may be especially at risk of harm, particularly if they are reliant on care staff and nursing staff to administer their medication.

This guide developed by the Health Innovation Network (HIN) sets out recommendations using validated tools to help improve insulin safety on discharge from hospital. It has been informed by a pilot project which involved 4 NHS trusts, spanning 7 South London Boroughs which took place in 2016. Although this guide is aimed at improving discharge for elderly and vulnerable patients, many of the key aspects and tools can be used in the discharge of all patients who use insulin to manage their diabetes.

We would like to thank:

- King's College Hospital NHS Foundation Trust
- Hounslow and Richmond Community Healthcare NHS Trust
- Kingston Hospital NHS Foundation Trust
- Guy's and St Thomas' NHS Foundation Trust

For their participation and involvement in this project



Dr Neel Basudev

Clinical Director, Diabetes.
Health Innovation Network

Contents

- 04** Background and Tools
- 05** Stage 1. Evaluation of current discharge processes
- 05** Stage 2. Decide on areas of improvement
- 06** Stage 3. Pilot areas of change
- 07** Stage 4. Embedding and sustaining change
- 07** Stage 5. Evaluation
- 07** Appendix 1. JDBS-IP educational checklist
- 08** Appendix 2 as adapted by Hounslow and Richmond Community Healthcare NHS Trust and Kings College Hospital NHS Foundation Trust
- 13** Appendix 3. Insulin safety resource list links
- 14** Appendix 4. Insulinpassport
- 15** Appendix 5. Patient survey template
- 16** Appendix 6. Staff survey template

Background and Tools

The Health Innovation Network is the Academic Health Science Network (AHSN) for South London, one of 15 AHSN's across England.

We connect academics, NHS commissioners and providers, local authorities, patients and industry to accelerate the spread and adoption of innovations and best practice using evidence based research. One of the HIN's clinical priorities is diabetes.

In 2015 many of our member organisations reported concerns about insulin safety on discharge stating there was no clear and consistent discharge policy or protocol in place. There was fear that this was leading to an increase of incidents, particularly among elderly and vulnerable patients who rely upon district nursing or carers to help administer insulin. Examples of concerns included community-based staff not being aware that insulin regimes had been changed and concerns around the right insulin administration devices not being available.

Qualitative and quantitative data substantiated these concerns, some trusts had evidence of serious incidents being reported in relation to discharge. A staff survey involving 90 participants from 5 different South London Boroughs revealed that only 64% of staff had ever received any kind of training related to insulin safety. In one hospital trust staff had not received any form of insulin safety training during their time with the organisation. At the other trusts insulin safety training was not listed as mandatory and some patients reported that they did not feel staff explained their new insulin regimens to them well enough prior to the point of discharge.

The survey also revealed that 82% of staff were unaware of the existence of insulin passports.

In October 2015 the Joint British Diabetes Society (JBDS) released new discharge planning guidance for adult inpatients with diabetes.

The HIN focused the project on three key areas for improvement:

- Encouraging the introduction of discharge checklists based on the **JBDS-IP discharge planning tool** for adult inpatients with diabetes available at: http://www.diabetologists-abcd.org.uk/jbds/JBDS_Discharge_Planning_Final_2015.pdf
(See appendix 2 for examples of templates adapted by local trusts).
- Improving access to insulin safety training for staff (See appendix 3 for resource list).
- Promoting the use of **insulin passports** to improve communication between services (See appendix 4 for example passport).

This guide is suitable for all acute and rehabilitation services. It is based on the learning from this project and is divided into 5 implementation stages

Stage 1 Evaluation of current discharge process

When planning your project the first steps to consider are who needs to be involved in your project and how long you have to work on the project. It is advised to allow six months to implement and complete the 5 stages of this project.

Before implementing any changes to current discharge pathways you are advised to gain an understanding of the main challenges in your local area. To achieve a full picture best practice is to gather qualitative and quantitative evidence to support the need for change. This can be done through a variety of sources including:

- **Patient surveys** (see [appendix 5](#) for example template)
- **Staff surveys** (See [appendix 6](#) for example template).
- **Audit**
- **Local incident reports**
- **Readmission rates**

NB This is not an exhaustive list, you may have other useful sources

Stage 2 Decide on areas for improvement

Implementing the discharge pathway

It may be that your service is performing well in some aspects of the discharge pathway and less well in others. Your data collection from stage 1 will help you identify where best to initially focus your time and resources.

Example

District nursing are not being properly informed of the discharge dates of patients who require help administering insulin. This has led to several readmissions and missed insulin doses. Focusing on implementing the JDDBS-IP discharge checklist could help prompt ward staff to communicate early with district nursing teams, informing them of the estimated discharge date. This in turn would help ensure nurses are able to visit the patient's home at the right time and help prevent missed/incorrect doses and readmissions.

Stage 3 Pilot areas of change

Once you have identified the key areas of concern in your organisation, it is recommended that you pilot the change required to improve the pathway in one or two wards or areas of your service. This will allow you to assess if the changes are effective and sustainable and allow you to make adaptations as necessary. At this stage you can refine and adapt aspects to better suit patient and staff needs before implementation on a wider scale.

Example 1.

During the pilot we trialled asking nursing staff to administer and discuss the use of insulin passports with patients at the point of discharge. This caused difficulty as they had to ensure a constant supply was available on each ward. It was then decided that insulin passports should be issued by the ward pharmacist when they gave the patient their medication to go home. This meant a supply of passports could be kept in the main pharmacy and sent up with the patient's medication at the point of discharge.

Example 2.

When we first implemented the JDPS-IP checklist on the pilot wards we realised that a few of the questions on the checklist were irrelevant to our patient cohort. Before rolling out across the whole hospital we removed these to prevent confusion amongst staff.

Stage 4 Embedding and sustaining change

To guarantee that staff are aware of the changes you have made and to ensure they become embedded into practice it is advisable to do some promotional work. The discharge protocol, training and insulin passports can be promoted in your organisation in a number of ways. Some effective methods of communication include:

- **Lunch and learn sessions**
- **Roadshows**
- **Promotion through staff bulletins and on screensavers**
- **As part of new staff inductions**
- **Team meeting presentations and discussions**
- **Attachments with payslips**

Promoting your work through an event such as Diabetes Week or at a patient safety event may help to draw a bigger audience and ensure that more staff are aware of the changes.

Stage 5 Evaluation

Continue to evaluate the changes you have made and assess if the original objectives have been met.

This can be done through the following methods:

- **Re-Audit** to look for improvement compared to the baseline audit
- **Staff surveys** to assess if satisfaction has improved
- **Patient surveys** to assess if satisfaction has improved
- **Reviewing incident reports** to look for a reduction in insulin related events
- **Reviewing readmission rates** to assess if there has been a reduction in insulin related readmissions.

Appendix 1

http://www.diabetologists-abcd.org.uk/jbds/JBDS_Discharge_Planning_Final_2015.pdf

Appendix 2

JDBS-IP Educational checklists as adapted by Hounslow and Richmond Community Healthcare NHS Trust (HRCH) and Kings College Hospital NHS Foundation Trust; for original please see table 5 of the JDBS-IP Discharge planning for adult inpatients with diabetes.

Diabetes safer discharge checklist

To be completed as soon as possible on admission.

- What is diabetes – type, pathophysiology, treatment
- Oral glucose lowering drugs – mode of action, dosing, frequency, side-effects, timing
- Glucagon-like peptide 1 (GLP 1) injectable – mode of action, dosing, frequency, injection technique, injection sites, side-effects, timing
- Food and nutrition – nutritional goals, outline of nutritional care plan i.e. principles of a healthy diet, adequate carbohydrate at the right times during admission, carbohydrate counting, weight management, nutritional supplementation
- Monitoring – indication and frequency, target range and reason for individual parameters, choice of glucose meter, practical aspects of testing and care of meter, sites for testing, alternative site testing, sharps disposal
- Blood ketone testing – indications, practical aspects of testing, frequency and interpretation of results
- HbA1c – what is it, relevance to care, target
- Insulin action – endogenous and exogenous effects on blood glucose, injection technique, storage of insulin, getting supplies of insulin, carbohydrate counting in relation to dose adjustments, glycaemic index and portion sizes
- Injection sites – rationale for rotation, lipodystrophy
- Choice of device – syringe and vial, disposable pens, re-useable pens with cartridges, pump
- Needle length – rationale for choice, injection technique, sharps disposal
- Hypoglycaemia – causes, types of hypoglycaemia, signs and symptoms, treatment, options of simple and complex carbohydrates with regard to the glycaemic index of foods, prevention strategies, use of glucagon if appropriate

- Hyperglycaemia – causes, signs and symptoms, acute effects, long-term effects, medication adjustments, when to escalate for admission avoidance
- Pregnancy – women of child-bearing age, pre-conceptual care, planned pregnancy, care during pregnancy, contraception
- Sick day rules – safe management of diabetes during intercurrent illness, insulin dose adjustment, monitoring
- Exercise – effect on glycaemic control, effects on cardiovascular outcomes, principles of dose adjustment, national recommendations
- Acute complications and avoidance of same – DKA, HHS, hypoglycaemia
- Chronic complications – microvascular, macrovascular
- Alcohol – effect on glycaemic control, national recommendations
- Smoking – effect on glycaemic control, national recommendations, smoking cessation
- Shift work – food intake, monitoring and adjustment of medications such as insulin
- Driving – legalities of DVLA reporting, hypoglycaemia management, restrictions, insurance
- Special occasions & cultural issues – managing diabetes safely for celebrations, religious occasions such as Ramadan
- Eye Care – impact of diabetes on eyes, need for retinal screening, expected care provision
- Foot care – daily foot care, access to podiatry, emergency care
- Written instructions – literature to supplement discussions, education and care plan
- Sex – erectile dysfunction, treatments, counselling
- Psychology support or psychiatric support – community psychiatric nurse (CPN) if needed
- Travel – preparation, vaccination, travel letter, adjusting insulin when crossing time zones, impact of extremes of temperature on blood glucose monitoring, storage of insulin during travel
- Identification – ID card, medical alert jewellery, insulin passport
- On-going follow up – clear understanding of diabetes care provider, appointments, prescriptions and assistance as required
- Prescriptions
- Contact details for diabetes care provider and emergency occasions
- Patient information given as required.

Any actions required:

Podiatry review:

(For Appointment Tel: 020 8614 5435)

Retinal Screening:

(Contact number 0333 456 0223)

Date of Specialist Review if needed:

Correspondence sent to GP

Copy to patient:

Signed

Date of completion:

The reviewing nurse should ensure all patients have the following:

- Appropriate formulation of insulin supplied in line with patient's needs and discharge plan must be provided
- Provision of a 14 day supply of insulin syringes/pen devices/cartridges
- 10ml vial of insulin (if required)
- Disposable pen with safety needle (if required)
- Blood glucose meter and/or ketone meter, strips and lancets
- Sharps bin
- Insulin passport/insulin safety card
- Patient information leaflets
- Contact number of DSN involved in patient's care during the inpatient stay or community DSN if transferring to intermediate care

If the patient and/or carer are not able to self-manage insulin injections and requires District Nursing input, the ward nurse is responsible for ensuring the following:

- Referral to District Nursing team with clearly defined and specified level of support required documented
- Copy of discharge summary to be faxed to the District Nursing team sent 48 hours before discharge wherever possible to reduce risk of post-discharge discrepancies
- Ensure early referral to the diabetes specialist team to resolve any equipment issues in a timely manner
- Medication administration record completed if insulin to be administered by Community Nurses.
- Medication administration chart to include Hypoglycaemia treatment eg. Glucogel and any corrective doses of insulin to be given in event of hyperglycaemia where needed.

Date of completion:

Signed:

Diabetes discharge checklist for ward staff

Staff Nurse to complete prior to discharge.
Completed form to be scanned to EPR

Surname: **First Name:** **Hosp No:**

The reviewing nurse should ensure all patients have the following:

Patients New to Insulin or Sulphonylureas

- Seen by Diabetes Specialist Nurse for Education
- Diabetes Specialist Team aware of Discharge

Patients who have had changes to insulin regime/tablets or other concerns re blood glucose control

- Patient reviewed by Diabetes Specialist Team
- Patient aware of changes
- Diabetes Specialist Team aware of discharge

Diabetic Foot Disease

- Antibiotics checked
- Confirm ____ days' worth of dressings provided
- District Nurse referral for dressings
- Podiatry appointment
- Diabetic Foot Clinic

All Patients with Diabetes

- Electronic Discharge Summary (EDS) to GP (to include medication changes and follow-up plan)
- Discharge counselling for patient (especially on altered meds doses)
- If further specialist Diabetes support required - GP requested to refer to Intermediate Care Services on EDS
- EDS to Diabetes Care Provider and District Nurse if appropriate
- All discharge medication including return of patient's own medications

All Insulin Treated Patients

- Appropriate formulation including pen device of insulin supplied (7 day supply)
- Referral to District Nurse Team referral if indicated
- Copy of discharge summary to be faxed to District Nursing Team 48h before discharge where possible

Always ensure early referral to the Diabetes Specialist Team to resolve any issues in a timely manner

Appendix 3

Insulin safety resource list links

Disclaimer: Some of these resources have been developed as part of insulin programmes in a particular area. Information may not be exhaustive or relevant for your area – please check before using them. Health Innovation Network cannot endorse resources developed by other organisations and therefore individuals and organisations take full responsibility for any use that they undertake of these resources.

Resource link	Details
https://www.diabetes.org.uk/Professionals/News--updates/New-free-online-insulin-safety-course-launched/	Six steps to Insulin Safety -Diabetes on the net 1 hour online training module
https://www.diabetes.org.uk/About_us/News/Insulin-delegation-guide/	diabetic caseload management quality improvement document for community nursing - Diabetes UK accredited improvement tool
http://www.londonscn.nhs.uk/wp-content/uploads/2016/01/dia-toolkit-012016.pdf	Building the right workforce for diabetes care toolkit
http://d-net.idf.org/en/home.html	International diabetes federation insulin safety modules
http://www.cdep.org.uk/	Cambridge diabetes education programme -Links to multiple resources (£25 cost)
https://arms.evidence.nhs.uk/resources/qipp/1008647/attachment	Think Glucose toolkit
http://www.virtual-college.co.uk/search.aspx?q=insulin%20safety	Safe use of insulin training - Virtual college-(Organisation must have purchased access to patient safety learning suite)

Insulin Safety Guidelines

http://www.diabetologists-abcd.org.uk/JBDS/JBDS_Discharge_Planning_Final_2015.pdf

<http://pathways.nice.org.uk/pathways/diabetes>

<http://www.trend-uk.org/documents/FIT%20Recommendations%20Page%20view.pdf>

<http://www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID=74324&>

Details

JBDS-IP Discharge planning for adult in patients with diabetes

NICE diabetes pathway overview

safe injection technique guideline (2nd eds) **TREND UK**

NPSA Safe administration of Insulin

Appendix 4

Insulin passport

<http://www.nrls.npsa.nhs.uk/alerts/?entryid45=130397>

Appendix 5

Patient Survey

Patient discharge telephone survey template

Hello my name is and I am calling from as you recently expressed an interest in taking part in our telephone survey reviewing your recent stay in hospital.

1. What hospital were you an inpatient at recently?
2. How long was your hospital stay and when were you discharged/come home?
3. Do you receive help from paid care workers or community nursing regularly?
4. Do your care workers or community workers help you with the administration of insulin or medication, or remind you to take your medication?
5. Did staff make any changes to your insulin or medication whilst you were in hospital?
6. If so were you informed about these changes and the reasons for the change?
7. Did you feel you could ask ward staff questions about your diabetes and/or medicine changes?
8. If you had a change to your medication or insulin did you receive the correct medication from your GP and Pharmacy when you returned home?
9. Did you feel that you could ask staff on the ward about your diabetes or diabetes medication?
10. Was everything in place correctly when you returned home? For example: was your GP aware you had been discharged, did you receive care or nursing support straight away and at the correct times.
11. Do you currently use and have a diabetes insulin passport?
12. Was your family/carer offered advice and information about your diabetes?
13. Do you have any questions or anything else you would like to add?

Appendix 6

Staff survey template

Staff Survey on Insulin Safety

This survey is to be completed by staff that prescribe or administer insulin only. Responses are anonymous and will not be shared.

1. What Trust do you work for?
2. What is your role?
3. Do you feel confident in administering/prescribing insulin?
 Yes No
4. If not, what would make you feel more confident?
5. Have you had any training around insulin safety? (This can either be online or classroom based)
6. If yes, what format did the training take?
7. If yes, how long ago was the training?
 2 months 6 months 1yr 2yr longer
8. How regularly would you like to receive refresher training/update?
9. Do you feel it would be beneficial for insulin safety training to be included in the Trusts mandatory training for prescribers and administrators?
10. Are you aware of the NHS insulin passports?
11. Do you issue NHS insulin passports to patients?
 Yes No
12. Do you ask to look at patients insulin passports on a regular basis?
 Yes No
13. Do you have any other comments?