

Diabetes UK Position Statements

Self-management of diabetes in hospital: a guideline from the Joint British Diabetes Societies (JBDS) for Inpatient Care group

D. Flanagan¹, K. Dhataria²  and A. Kilvert³ on behalf of the Joint British Diabetes Societies (JBDS) for Inpatient Care*

¹Plymouth Hospitals NHS Trust, Plymouth, ²Norfolk and Norwich University Hospitals NHS Foundation Trust, Norwich, UK and ³Northampton General Hospital NHS Trust, Northampton, UK

Accepted 12 May 2018

Abstract

The aims of these guidelines are to improve the inpatient experience and safety for people with diabetes through effective self-management. The guidelines are aimed primarily at healthcare professionals working in hospitals, although some aspects are relevant to staff involved in pre-admission preparation. The guidelines suggest an approach to providing patient information, the circumstances in which self-management is appropriate, the development of care plans and the elements needed for effective self-management. This document is an abridged and modified version of ‘Self-management of diabetes in hospital’ adapted specifically for *Diabetic Medicine*. The full version can be found online at: www.diabetes.org.uk/joint-british-diabetes-society or <https://abcd.care/joint-british-diabetes-societies-jbds-inpatient-care-group>.

Diabet. Med. 35, 992–996 (2018)

Introduction

All children, young people and adults with diabetes admitted to hospital, for whatever reason, should receive effective care of their diabetes. Wherever possible, they will continue to be involved in decisions concerning the management of their diabetes. These processes are defined in the Diabetes National Service Framework [1].

Historically, people with diabetes have often been prevented from managing their own diabetes while in hospital. This has exposed them to mismanagement of their diabetes as a result of errors in the administration of insulin [2], errors of diabetes management, inappropriate content and timing of meals, mistreatment of hypoglycaemia and misuse of variable rate intravenous insulin infusions.

At best, these errors lead to dissatisfaction, disempowerment and prolonged length of hospital stay; at worst, people with diabetes may suffer serious harm or even death [3,4]. The National Diabetes Inpatient Audit (NaDIA) has reported that people with diabetes experienced substantially longer hospital stays, poor glucose control, frequent medication errors and insufficient contact with the diabetes specialist

team [5]. All these factors contribute to the increased cost of caring for inpatients with diabetes. Allowing people with diabetes who have the appropriate skills to self-manage their condition is a key part of the strategy to improve insulin safety in hospital [6,7]. As with many aspects of inpatient diabetes care, there are few data to guide us in best practice. These guidelines therefore represent the consensus view of the relevant groups of clinicians.

Rationale for self-management

Insulin therapy remains a common cause of untoward incidents in hospital [7]. There are a number of aspects of insulin use that result in harm to people with diabetes. These include errors with insulin prescribing and administration, and problems with the timing of insulin in relation to food. A lack of experience among medical and nursing staff in managing diabetes contributes to these problems. Limited availability of specialist diabetes advice is also a factor.

Many people treated with insulin will have greater knowledge of their insulin regimen than the medical and nursing staff responsible for their care. They routinely monitor their capillary glucose and adjust the insulin dose depending upon the result. This process is referred to as self-management of diabetes and is advocated as best practice for people with diabetes out of hospital [8]. Self-management by

Correspondence to: Daniel Flanagan. Email: danielflanagan@nhs.net

*Members of the Joint British Diabetes Societies for Inpatient Care (JBDS-IP) group and Guidelines writing group are given under the heading Collaborators.

What's new?

- Many people with diabetes admitted to hospital find that clinical staff are reluctant to let them self-manage their diabetes during their inpatient stay.
- These guidelines outline a simple approach to developing a self-management strategy for people with diabetes and staff.
- Hospital clinical staff should be aware that many people with diabetes in hospital wish to self-manage and should ensure this need is met as far as possible.

people who are willing and able to do so is an important part of the strategy to improve the safety of insulin use in hospital. As a consequence, length of stay and re-admission rates should improve by avoiding treatment errors.

Observing people self-managing their diabetes provides an opportunity to identify and rectify gaps in their knowledge, thereby increasing independence and decision-making on discharge, and to identify people who have difficulties administering insulin, e.g. poor eyesight or dexterity.

Hospitals should have a policy for diabetes self-management. This should be clear and person-centred, but flexible enough to deal with changing clinical situations. Written information explaining staff responsibilities in the process of agreeing self-management should be provided for medical and nursing staff. The key principle is that people with diabetes should be primarily responsible for making the decision about whether they should self-manage.

The role of the diabetes specialist team

All hospitals should provide a specialist diabetes team to support inpatients with diabetes and the staff caring for them. Input from the diabetes specialist team is essential to ensure that people with diabetes are managed safely and effectively during their hospital stay [9]. Availability of diabetes specialist input varies between hospitals and the role of the inpatient diabetes team will also vary depending upon the size of the team. The diabetes specialist team should be involved in the development and implementation of local self-management policies and provide staff with education in the use of self-management policies.

Ideally, elective inpatients should have discussed safe self-management before admission to hospital. The diabetes team may need to provide specific individual patient training and should be involved in investigating any untoward incidents that arise as a result of self-management. It is possible that the person with diabetes and the ward staff may disagree about the level of self-management. In these circumstances, the diabetes specialist team should be available to support the process of decision-making.

Criteria for self-management

People who manage their diabetes prior to admission must be assumed competent to continue to self-manage during the admission unless the clinical situation prevents this. The role of the registered nurse (or doctor) is to discuss the person's wishes and agree and document the circumstances in which self-management will not be possible, e.g. post anaesthesia.

The clinical situation may change during the admission and the person may become temporarily or permanently unable to self-manage. Clear guidance should be provided to allow for changes in responsibility for diabetes management depending on the clinical circumstances. This guidance needs to be individualized; the diabetes team may help with this.

Some people with diabetes may not wish to self-manage and for others self-management may be inappropriate. These include people deemed unable to participate due to lack of capacity as defined under the Mental Capacity Act (2005); people at risk of self-harm; people admitted as a result of poor glycaemic control (until assessed by the diabetes specialist team); or people who will not be self-medicating upon discharge.

It is important not to exclude people who are confused on admission if they are expected to manage their own medicines when they go home. It may be possible to establish a safe routine before they are discharged. The above criteria will need review if the clinical condition changes while in hospital.

Staff responsibilities

Clinical staff are responsible to the person with diabetes for provision of safe and effective care.

The role of ward staff (nursing and medical) is to regularly assess the clinical condition of the person with diabetes to determine whether this may impair their ability to self-manage. Whenever possible, this person should be involved in decisions and, as with all other aspects of their care, should be allowed to make the final decision about self-management. If there is doubt about the person's ability to self-manage, the diabetes specialist team should be involved. Written agreement from the person with diabetes is required prior to self-administration of medicines in hospital.

On admission to hospital, nursing staff should discuss self-management of diabetes with the person. This should involve providing them with an information leaflet to support the discussion and completing an 'agreement to self-manage' form. This should explain the responsibilities people with diabetes have when self-managing insulin, e.g. disposal of sharps; safe and secure storage of insulin. They must agree that blood glucose results and insulin doses need to be documented. In addition, staff need to ensure safe and secure storage of the insulin with access for the individual with diabetes. The self-management plan needs to be discussed at

nursing handover, especially if the person with diabetes is transferred between wards.

Planning elective admissions

If an elective admission is planned, diabetes care needs to be included in the plan [10]. People with diabetes should be involved in the planning of diabetes management for all stages of an elective admission from pre-admission to post-discharge. People should be asked if they wish to self-manage during the admission. An explanation of when self-management may not be possible (e.g. after an anaesthetic) should be given. The process for agreement to self-manage should be explained (e.g. a patient information leaflet, agreement to self-manage form). Details of the self-management plan (i.e. blood glucose monitoring, recording of insulin doses) should be agreed, and if the diabetes specialist team need to be involved they should be contacted in advance (e.g. insulin pump therapy). Guidelines should be available for when to involve the diabetes specialist team. Outcomes of self-management of diabetes in elective admissions should be audited and include patient satisfaction questionnaires.

Patient education

People with diabetes must be given a patient information leaflet in an appropriate language prior to commencing self-management. It is good practice to ask the person what they understand after reading the leaflet. If diabetes-specific educational needs are identified, the person should be referred to the diabetes specialist team. People who are not self-administering insulin should be given education on the dose, timing and injection technique every time insulin is administered. Information should be provided on the action of insulin, the person's role in the administration process and the potential to take greater control over the administration of their insulin during their hospital stay. People not currently self-managing but expected to be independent at discharge should be referred to the diabetes specialist team well before discharge and provided with written information including details of glucose-testing equipment, a glucose diary, contacts details and follow-up arrangements.

All people taking insulin should be provided with an information leaflet advising on the safe use of insulin and an insulin passport documenting the name of the insulin they are taking and the type of administration device in line with National Patient Safety Agency (National Reporting and Learning System) guidance [7].

Dispensing and storage of insulin

The individual's own insulin can be used for self-administration if they have consented to use his/her own medications while in hospital, the medication is within expiry date and the devices are clearly labelled. This issue may also arise if

the insulin is not on the hospital formulary or is not readily available.

Appropriate storage of insulin can be problematic. The person with diabetes should be provided with a secure cabinet for insulin storage and is responsible for ensuring the key is kept secure at all times. If the ward is unable to provide a locked cabinet this should not be a barrier to self-administration of insulin provided that the person is made aware of the potential risks of leaving insulin or equipment within reach or sight of others. Consideration needs to be given to the risks relating to other people in the same area (e.g. the acutely confused or those at risk of self-harm).

Checking and recording patient self-administration of medicines

The registered nurse is responsible for confirming at every drug round whether the person has self-administered insulin and the dose they have taken. This should be recorded on the prescription chart. If a person becomes unable or unwilling to administer insulin, nursing staff must take over responsibility. All drug errors (e.g. an incorrect dose or a missed dose) should be reported using the normal incident-reporting method. Minor discrepancies, e.g. variation in timing, must be discussed with the inpatient. If there is disagreement between the person with diabetes and ward staff about the appropriateness of the person's decision the diabetes specialist team should be asked for advice.

People who are self-managing their diabetes should be able to test their blood glucose using their own equipment. The results of tests need to be available to nursing staff for inclusion in the inpatient record. Testing needs to be at regular intervals (a minimum four times per day, usually before meals and before bed for those taking insulin) to allow hospital staff to assess the level of control. Hospitals that have quality control policies mandating the use of hospital-provided glucose meters should develop local policies which allow the person with diabetes to retain control of blood glucose monitoring and diabetes management.

People who are new to self-monitoring should receive education and support from the diabetes specialist team

Management of hypoglycaemia and hyperglycaemia

If the person becomes hypoglycaemic (blood glucose < 4.0 mmol/l) they should be treated according to the local inpatient hypoglycaemia guidelines, and referred to the diabetes specialist team if hypoglycaemia is recurrent or severe (i.e. requiring third-party assistance). If they become hyperglycaemic (i.e. blood glucose levels > 14 mmol/l) the person should be asked what they would normally do in this situation. If they are self-managing, they should decide what action is needed. If they are not self-managing but are well,

advice should be sought from the diabetes specialist team or from medical staff.

If the person is unwell and hyperglycaemic, the urine or blood should be checked for ketones and medical staff informed of the results. Use of a variable rate intravenous insulin infusion should be considered. Local guidelines for the management of hyperglycaemia should be referred to, if available.

Content and timing of meals

Hospitals should ensure that the content and timing of meals is appropriate for people with diabetes. Those who are self-managing should be able to take their insulin with their meal. The carbohydrate content of meals should be clearly stated in the menus. People should be allowed to make their own food choices. Guidance from a dietitian may be needed to ensure these choices are appropriate.

Self-management of insulin pumps (continuous subcutaneous insulin infusion) during hospital admission

Insulin pumps may be used by people with Type 1 (and occasionally with Type 2) diabetes to optimize blood glucose control. Pump users undergo careful education and training in the use of the pump by the diabetes specialist team. Inpatients using insulin pumps should self-manage if they wish to and are well enough to do so. All people using an insulin pump who are admitted to hospital should be referred to the diabetes specialist team.

If the person is not well enough to self-manage the pump or is unconscious/incapacitated, the pump should be discontinued, and a variable rate intravenous insulin infusion should be commenced immediately. An insulin pump should never be discontinued without immediate substitution of insulin via an alternative administration route. Insulin pumps should only be adjusted by the person with diabetes or a member of the diabetes specialist team. If an insulin pump is discontinued it should be stored safely until the person with diabetes is ready to recommence pump use and the place of storage should be documented. If the person is unable to self-manage but continued intravenous insulin is not necessary, the diabetes specialist team should be asked to advise on a subcutaneous insulin injection regimen. When an insulin pump is recommenced, the intravenous insulin infusion should not be discontinued until a mealtime bolus dose of insulin has been given via the pump.

Self-administration of other diabetes medication

People with Type 2 diabetes are likely to take tablets, with or without insulin to treat their diabetes. Hospitals may have local policies in place for self-management of all medication; oral diabetes medication would fall within the scope of these

documents. There are some specific considerations for the self-administration of oral diabetes agents relating to the timing of the dose in relation to food. Metformin must be taken with food to reduce the incidence of gastrointestinal side effects. Sulphonylureas (e.g. gliclazide, glimepiride) and dipeptidyl peptidase (DPP)-4 inhibitors (e.g. sitagliptin, vildagliptin, saxagliptin, linagliptin, alogliptin) should ideally be taken ~ 30 min before food. Pioglitazone, repaglinide and nateglinide may be taken just before eating. The use of glucagon-like peptide (GLP)-1 analogues (e.g. lixisenatide, liraglutide, exenatide, dulaglutide) may need to be reviewed on admission to hospital.

Summary of key recommendations

1. Trusts should provide written information to explain the responsibilities of self-management to people with diabetes and to hospital staff.
2. The responsible nurse and the person with diabetes should agree, on admission, the circumstances in which the person should self-manage. An agreement form should be signed by both the person and a registered nurse.
3. For elective surgical admissions, a care plan should be agreed at the pre-operative assessment clinic to establish whether the person with diabetes wishes to self-manage and the circumstances in which this may not be possible.
4. During the admission, the clinical circumstances should be assessed regularly to ensure that the person's ability to self-manage their diabetes has not been compromised by their clinical condition.
5. The diabetes specialist team should be involved if there is disagreement about the person's ability to self-manage or if there are difficulties with diabetes control. Diabetes specialist nurse staffing levels should be sufficient to support this role.
6. People with diabetes should be able to self-monitor their blood glucose but should make the results available to hospital staff.
7. The insulin dose administered by the person with diabetes should be recorded on the prescription chart.
8. The hospital should ensure that the timing and content of meals are suitable for the person with diabetes.
9. Facilities should be available for the safe storage of insulin in the ward environment.

Collaborators

A. Scott (Sheffield Teaching Hospitals NHS Foundation Trust), A. Roberts (Cardiff and Vale University NHS Trust), B. Allan (Hull and East Yorks Hospital NHS Trust), C. Walton (Hull and East Yorks Hospital NHS Trust), D.

Stanisstreet (East and North Hertfordshire NHS Trust), G. Rayman (The Ipswich Hospitals NHS Trust), J. McKnight (NHS Lothian), J. Thow (York Teaching Hospital NHS Foundation Trust), J. James (University Hospitals of Leicester NHS Trust), K. Richie (Southern Health and Social Care Trust, Northern Ireland), L. Stuart (The Pennine Acute Hospitals NHS Trust), M. Hammersley (Oxford University Hospitals NHS Trust), P. Winocour (East and North Hertfordshire NHS Trust), R. Malik (King's College Hospital NHS Foundation Trust), R. Hillson MBE.

Funding sources

None.

Competing interests

None declared.

Acknowledgements

We are grateful to Maggie Watkinson (Taunton and Somerset Hospital NHS Trust) for her work in developing these guidelines.

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