

# Implementing self-administration of insulin in hospital: a journey of discovery and innovation. Part 2: Implementing change

VICKI L ROWSE

## Abstract

**Offering patients the choice to manage their diabetes in hospital and supporting them to do so is best practice but is not routine. Hospital processes around storage and concerns about insulin misuse coupled with custom and practice have led to increasing numbers of delayed and missed doses. Audits demonstrated the case for change and highlighted that patients were self-administering without proper processes and support. This paper describes a guide developed to help trusts through the change process required to implement patient self-administration of insulin and the experience of doing so in one trust. Dedicated project management and trust-wide involvement are key to success, and innovations to embed self-administration of insulin included electronic documentation of risk assessment, patient assessment by pharmacy technicians and simple bedside storage.**

*Br J Diabetes* 2018;18:ONLINE AHEAD OF PUBLICATION

**Key words:** insulin, inpatients, safety, culture

## Introduction

Self-care and empowerment are two aims of modern healthcare for patients with long-term conditions. Patients with diabetes who are dependent on insulin are educated and supported to manage their condition in their everyday lives, but when they are admitted to hospital we routinely take their insulin away from them, effectively removing their ability to self-care because of safety concerns about the misuse of insulin. This is the second of two articles about implementation of self-administration of insulin in hospital, a project undertaken by Wessex Academic Health Science Network (AHSN). In part 1 the case for change was explored and two main barriers were highlighted – culture and storage. This article

describes the development of an implementation guide and successful change in one organisation.

## A guide to implementing self-administration of insulin

The initial projects to implement self-administration of insulin were unsuccessful. The main reasons were lack of engagement throughout the trust, the diabetes team not having the time to undertake this complex change on top of their normal work, and a lack of experience of change management. To help trusts work through the stages of implementation a “Guide to Implementation of Self-administration of Insulin” was developed.<sup>1</sup> This guide is in two parts; part 1 provides a rationale of why self-administration is needed and part 2 has step-by-step guidance on implementation and outcome measurement. The guide can be found at: <http://wessexahsn.org.uk/projects/58/self-administration-of-insulin-in-hospital> if any further detail is needed.

Part 1 sets the case for change and lists examples of data, national guidance and priorities to enable tailoring a project to local needs.

Offering patients with diabetes the choice to self-care and administer their insulin is widely recommended by the National Institute for Health and Care Excellence<sup>2</sup> and NHS Diabetes Guidance,<sup>3</sup> as well as by Diabetes UK. To gain the local picture we undertook benchmark audits across all wards in one trust which showed that 50% of patients (17/34 patients on 36 wards) using insulin had their pen with them, usually on the locker or bed table, with no assessment documentation; nearly 80% of insulin in the fridges was unlabelled or for discharged patients (301/383 pens) at an estimated cost of £2,400 (£8 per pen), and nurse-administered insulin was an average of 52 minutes late at breakfast, with 57% of patients experiencing a delay. Patients who were self-administering were noted on this audit, and no delays were reported as the insulin was not locked away. A 12-month review of incident data showed that, of 122 reported incidents, almost 50% were related to administration. The data from these audits demonstrated that patients were already self-administering but there were no robust processes in place. There was significant wastage of insulin and the majority of incidents related to administration. These were powerful data for change and underpinned the rationale for the project.

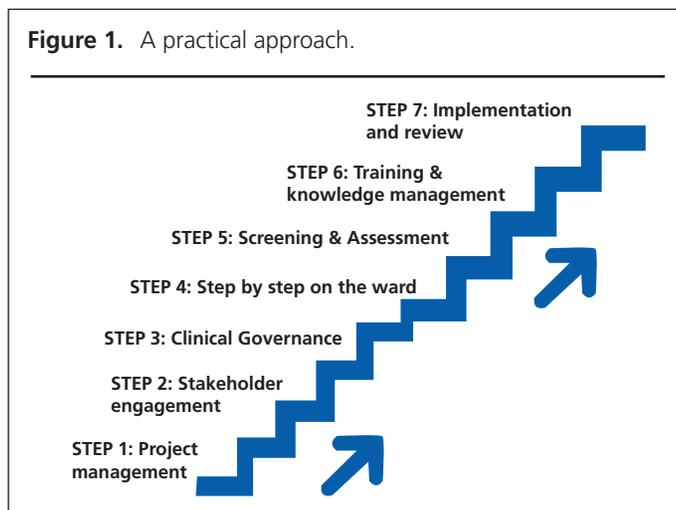
Part 2 provides guidance for implementing the change, setting the scene with a step-by-step approach (Figure 1).

Wessex Academic Health Science Network, The Innovation Centre, Chilworth, Hampshire, UK

**Address for correspondence:** Ms Vicki L Rowse

Senior Programme Manager Medicines Optimisation and Atrial Fibrillation Programmes, Wessex Academic Health Science Network, The Innovation Centre, 2 Venture Road, Chilworth, Hampshire SO16 7NP, UK  
Tel: +44 (0)2382 020840  
E-mail: [vicki.rowse@wessexahsn.net](mailto:vicki.rowse@wessexahsn.net)

<https://doi.org/10.15277/bjd.2018.159>

**Figure 1.** A practical approach.

### Steps 1 and 2: Project management

The lack of progress made initially with the diabetes team trying to fit the project in with their day job made us decide that a dedicated project manager with time, the right skills and connections/relationships in the trust was vital to the success of the project. Wessex AHSN funded some project manager time for two days a week. The role was to develop the assessment documentation, undertake training, audits and pilots, engage stakeholders and lead the steering group. Because insulin was the key focus, the pharmacy team – and in particular the diabetes lead pharmacist – were the project owners. A steering group was formed to ensure buy in, collaborative thinking and momentum, and included the project team, Deputy Director of Nursing, patient engagement lead and Wessex AHSN programme manager. Presentations were delivered to Infection Control, Governance, Education, Medicines Safety and Quality Improvement committees at various times during the project to raise awareness and gain necessary approvals.

### Step 3: Governance

Most trusts have self-administration of medicines policies, but these are often broad and do not focus on a trust-wide approach. Policies and guidance that support cross-trust implementation and standardisation are key to driving change. Information for nurses about accountability and what their regulatory body says is vital in changing the beliefs of nurses that they can't support patients to self-administer, as is endorsement from matrons and chief nurses. Commonly, nurses believe they will be disciplined if a patient makes a mistake under their care. On each ward the nursing teams were made aware of the Nursing and Midwifery Council (NMC) Standards for Medicines Management<sup>4</sup> and their responsibilities, and it was highlighted that they are not responsible for a patient's mistake provided the patient has had a documented assessment and is supported. We invited the Deputy Director of Nursing to join the steering group and, as lead for both quality and patient experience, she was able to support the change of thinking on the wards and provide access to senior nursing forums to ensure everyone was aware of the change and correct information.

Storage is a vital part of implementing self-administration of insulin for patients. Storage at the patient bedside is considerably safer than storage in the fridge, as the right insulin is with the patient. Some trusts are now reviewing their risk assessments and piloting storage at the bedside, out of sight. It is vital that any process allows equal access for all patients assessed as able to self-administer their insulin, so Patient's Own Drugs (POD) locker storage is not, in most trusts, a solution.

Audits of current practice found that over 50% of patients on insulin had their pens in their locker, which provided evidence that practice was not what the trust thought was happening. Additionally, there had been no incidents of insulin misuse by other patients, a fear that was frequently cited. There was widespread misconception that insulin should always be kept in a fridge, when in fact it keeps for around 28 days out of a fridge. The case was made for storage in a plastic box, which was then put in the locker. This was agreed by all relevant committees and instigated. Later in the project it was agreed that all patients' insulin would be stored in POD lockers to reduce wastage and wrong insulin errors. Wastage has reduced by 54%, saving over £1,700 in two months. This saving is being invested in the additional pharmacy technician time. Near-miss reporting in relation to insulin has increased.

### Step 4

Step 4 outlines a process for self-administration on a ward. This is designed to be tailored to local requirements but includes risk assessment for self-administration, patient information and responsibilities, equipment, review parameters and planning for discharge. We have been made aware of the impact on care in the community of older patients who are admitted able to administer their own insulin but discharged no longer able to do so. Support and encouragement to regain the skill before discharge is important for both their empowerment and their diabetes control.

A risk assessment document was developed using Plan-Do-Study-Act cycles.<sup>5</sup> This was loaded onto the electronic prescribing system and an alert system developed to ask nurses at each drug round to verify that the patient was still suitable for self-administration.

A further innovation was to include the initial risk assessment in the Medicines Reconciliation undertaken by the ward pharmacy technicians. Medicines Reconciliation has to be completed within 24 hours of admission, and asking a patient on insulin if they wished to self-administer and then using the risk flow chart was a natural extension to their role. They received training, and following this were happy to include the assessment in their work. Once familiar with the process it took an additional five minutes, and keeping pharmacy technicians updated is simpler than keeping nurses updated as there are fewer of them. Their feedback has been that they enjoy this extension to their role. The ward pharmacist reviewed patients on high dose steroids or with acute kidney injury as their insulin requirements are less stable. Nurses found the prompt to review a patient's suitability to self-administer, which popped up on the Electronic Prescribing System on every medicines round, helpful in reminding them that the patient was on insulin.

### Steps 5–7

Steps 5–7 consist of outline assessment, training for the ward staff, implementation and review of the project on each ward.

The project manager undertook two-week pilots on a medical ward, a surgical ward, the acute assessment unit and a vascular ward to ascertain if there were any peculiarities in specialities. The pilots included training for nurses and pharmacy technicians. Nurses were surprised to hear that they were acting outside the NMC standards<sup>4</sup> in allowing patients to self-administer without assessing, documenting the assessment and regularly reviewing and supporting patients. However, once the new process was implemented they were happy with electronic documentation at each drug round and bedside storage of the insulin as it reduced the time they had to spend walking around the ward, releasing their time to care.

Steering group meetings were held six-weekly and the project manager attended trust infection control, governance, patient experience and matrons' meetings as part of the project roll out.

### Appendices

The Appendices include examples of documentation that have been developed by trusts including the assessment pathway, patient checklist, storage risk assessment, issues log and prescribing and administration aid.

We conclude with some frequently asked questions. The most common question was "What happens if a patient with dementia takes the pen from another patient?". We assert that this should not be a barrier to self-administration. Storage and setting ground rules with the patient is key, and it is unlikely that a person with dementia would be able to attach a needle, dial up and maliciously administer a dose. Another concern is that "Regulators such as the CQC stop us doing self-administration". The CQC chief pharmacist has said they support patients administering their medicines and look for good risk assessments and processes to support them to do so.

### Final thoughts

Self-administration of insulin is known to be safer for patients when it is properly implemented and robustly managed across all wards. The self-administration of insulin guide has helped project managers to develop the case for change, follow a staged process and measure the impact of the project. The early outcomes are timely insulin injections; safer, happier patients; and nurses' time released to care. One of the strengths of this project has been the collaboration between pharmacy and nursing, and adapting existing processes to support self-administration rather than introducing more paperwork or tasks.



### Key messages

- Implementation of self-administration of insulin is complex and requires dedicated project management and trust wide engagement.
- Incorporating assessment and documentation into current processes increases the likelihood of embedding the change
- Storage of insulin at the bedside reduced wastage and wrong insulin picking from the fridge, as well as saving nurses time.
- Collaboration between pharmacy and nursing in the management of this project enabled innovative thinking.

The guide is available at <http://wessexahsn.org.uk> and is linked from the Diabetes UK website Professionals' Shared Practice pages.<sup>6</sup> It is free to use and we would appreciate any feedback.

**Conflict of interest:** None

**Funding:** The development of the guide was a collaboration between Wessex AHSN and a quality improvement consultant from Lilly uk. There was no funding.

### References

1. Wessex Academic Health Science Network. Self-administration of insulin in hospital: a guide to support trusts through the implementation process. 2017. <http://wessexahsn.org.uk/projects/58/self-administration-of-insulin-in-hospital> (accessed 22 September 2017).
2. National Institute for Health and Care Excellence. Diabetes in adults. Quality Standard [QS6]. 2011 (updated 2016). <https://www.nice.org.uk/guidance/qs6> (accessed 22 September 2017).
3. Joint British Diabetes Societies for Inpatient Care Group. Self-management of diabetes in hospital. March 2012. <https://www.diabetes.org.uk/professionals/position-statements-reports/specialist-care-for-children-and-adults-and-complications/self-management-of-diabetes-in-hospital> (accessed 22 September 2017).
4. Nursing and Midwifery Council. Standards for medicines management. 2007 (updated 2010). <http://www.nmc.org.uk/standards/additional-standards/standards-for-medicines-management/> (accessed 22 September 2017).
5. Institute for Healthcare Improvement. <http://www.ihl.org/resources/Pages/default.aspx> (accessed 22 September 2017)
6. Diabetes UK. Diabetes inpatient and hospital care. <https://www.diabetes.org.uk/professionals/resources/shared-practice/inpatient-and-hospital-care> (accessed 22 September 2017).