

# Better reporting systems for clinicians can improve care of adult inpatients with diabetes

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## Article points

1. It is clear that appropriate, accurate and effective management plans must be implemented and undertaken. Diabetes and its management must be recognised as a major issue for acute trusts
2. The development of a local reporting and monitoring system began as an attempt to document evidentiary information resulting from clinical incidents.
3. The need for the continual evolution of diabetes education strategies for all healthcare professionals is evident, along with a shared responsibility to improve communication to ensure high standards of care.

## Key words

- Incident reporting information systems
- Clinical governance

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Clinical governance is a continually evolving concept within the NHS. This article reports on the implementation of a clinical incident reporting system by the Adult Inpatient Diabetes Specialist Nurse Service (AIP DSN). We present an analysis of nursing interventions for inpatients with diabetes along with the benefits, problems and limitations. Discussion of the care and management of adult inpatients with diabetes, including previous practice and resulting problems, will be addressed. The outcomes and evaluations of the clinical incident reporting system is examined. Particular emphasis is placed upon recognition of recurrent issues and themes within diabetes management and guiding future strategies for the care of adult inpatients with diabetes at Medway Maritime Hospital, Kent.

Diabetes is a serious chronic condition with the potential for many co-existing complications, resulting in a considerable health cost to the patient and financial cost to the NHS. There are 2.35 million people in the UK currently estimated to have diabetes, causing 2.4% of all deaths in England (NDST, 2006). The predicted rate of increase of diabetes is estimated as being 15% by 2010 when approximately 5% of the population may be diagnosed with diabetes (NDST, 2006). Consequently the incidence of a patient with diabetes requiring a hospital admission will be five times more likely (DoH, 2006). The National Service Framework for Diabetes advocates that

there has to be 'good quality consistent care' for inpatients with diabetes (DoH, 2001) provided by healthcare professionals with appropriate levels of knowledge and skill. Considering that there is one new diagnosis of diabetes made approximately every 10 minutes and that approximately 20% of people with diabetes may require admission to hospital each year, resulting in an NHS cost of £9.6 million per day (NDST, 2007), it is clear that appropriate, accurate and effective management plans must be implemented and undertaken. Diabetes and its management must therefore be recognised as a major issue for acute trusts.

Clinical governance was introduced in the

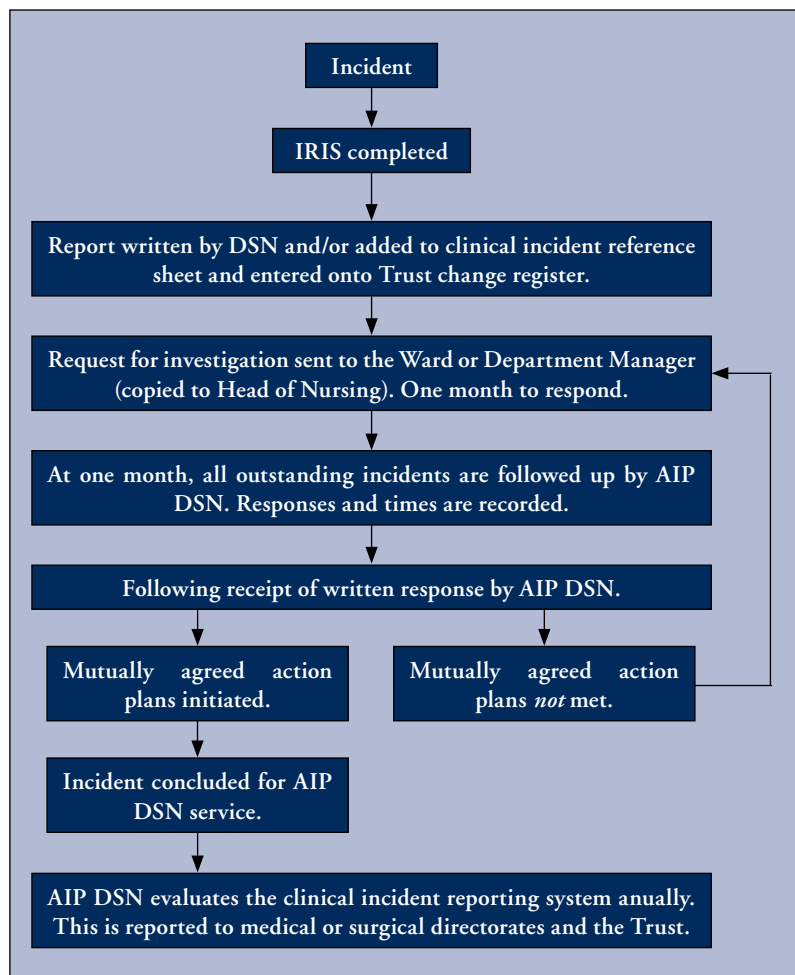


Figure 1. Flow diagram to illustrate a local reporting and monitoring system.

**Box 1. The clinical incident reporting system was devised to do the following.**

- Monitor post incident action plans and outcomes, following initial request for investigation by DSN.
- Record the details of the relevant IRIS – links into the Directorate/ Trust clinical governance systems.
- Establish and record timeframes/ deadlines for responses which are actively pursued.
- Identify all who are involved in the incident and investigation and to whom it has been reported.
- Document mutually agreeable actions and outcomes between investigator and DSN.
- Ensure a satisfactory conclusion at site of incident.

1998 consultation document *A First Class Service: Quality in the new NHS* (DoH) as an organisational framework for the continual improvement of quality within NHS services. Scally and Donaldson (1998) stated that in order to achieve this, an environment has to be created whereby clinical excellence can thrive.

**The way things were for Adult Inpatient DSNs**

Prior to March 2006, through many discussions between the AIP DSNs at Medway Maritime Hospital, it became apparent that many similar clinical incident related problems and concerns were being repeated, despite the introduction of

guidelines and education programmes over previous years. The Trust’s local initiatives for clinical incident reporting (Incident Reporting Information System, IRIS) allowed for the documentation of incidents, which were then incorporated into the Trust governance system. However, this did not allow for feedback for the person reporting and therefore no means of monitoring the themes, practitioners involved, or actions and outcomes taken post-event at the local level. While similar recurring problems could be identified from experience, there was no clear indicator or measurement by which the size and frequency of the problem could be gauged. There was no local documentation to assess improvement or deterioration of diabetes-related nursing care.

**Clinical incident reporting system**

The development of a local reporting and monitoring system began as an attempt to document evidentiary information resulting from clinical incidents (Figure 1). This system evolved from a simple form designed to contain all information in relation to a particular incident. Since then, the incident form with attached statements has progressed to provide a succinct chronological record of events, culminating in a satisfactory conclusion (see Box 1). Once a mutually satisfactory conclusion is reached, usually including relevant education sessions for those concerned and further support for the ward or department, the incident is marked as closed. Each incident reference number and relevant IRIS number is entered onto a clinical incidence reference form, which is then used to collate all relevant information. This is both qualitative and quantitative in nature and includes types of incidents, locations, designation of staff involved and outcomes of investigations with action plans. This data is evaluated yearly and reported to each directorate, while the IRIS forms are evaluated centrally by the Trust.

**Benefits, problems and limitations**

The clear and concise format of this

**Page points**

1. It has to be recognised that the introduction of a system like this into any workplace will have an impact on resources – particularly time.
2. As DSNs have to prioritise their caseload and focus on the patients with more complex health needs, general nursing staff and other HCPs must be upskilled to ensure patient safety in all areas.
3. It was very important to the success of the reporting system that staff understood the need to improve the quality of diabetes care and to appreciate the need for investigation requests and timely responses following the discovery of a clinical incident in their area

system provides a quick reference guide to identifying specific or general incident queries and themes. Each individual clinical incident form enables the AIP DSN service to highlight the need for specific education and support appropriate to the area concerned. Benchmarking the standard of care for people with diabetes can initially be assessed using this system – it also seems to be a valuable audit tool that can change in format and direction as required. The principal benefit is, of course, to improve patient care and management, through the assessment of current practice, highlighting areas of concern and ensuring that remedial actions are taken immediately, with the provision of follow-up support and further education as required.

It has to be recognised that the introduction of a system like this into any workplace will have an impact on resources – particularly time. Initially, the completion of relevant documentation would have taken a relatively substantial proportion of time, not only for the DSNs but also for the person requested to investigate; however, as the system has been developed and refined, the length of time spent completing paperwork has shortened and the process is now integral to DSN working practice.

Limitations exist when the clinical incident reporting system is used as an accurate Trust-wide audit system, particularly in view of

the AIP DSN service being referral-based and that all incidents have been discovered through these referrals only. Some areas and consulting teams rarely refer patients to the AIP DSN service for reasons that are often unclear; consequently the potential number and type of clinical incidents occurring in these areas remain questionable. As DSNs have to prioritise their caseload and focus on the patients with more complex health needs, general nursing staff and other HCPs must be upskilled to ensure patient safety in all areas. With this in mind, regular education programmes have been implemented and are open to all AIP nurses, clinical support workers and other HCPs, to promote good management and care of patients with diabetes.

Upon introduction of the clinical incident reporting system it became evident that consideration had to be given to how this system would be received by the ward or department managers and heads of nursing, to ensure adherence to and best use of this system. It was very important to the success of the reporting system that staff understood the need to improve the quality of diabetes care and to appreciate the need for investigation requests and timely responses following the discovery of a clinical incident in their area. This system is also unusual as, previously, managers had been instructed to investigate incidents by their senior management, not by specialist nurses. Reassurance was also readily given to all involved that the clinical incident reporting system was *not* designed to apportion blame, but to advocate the need for education and support instead. This is particularly important to note as the Healthcare Commission reported that a culture of blame is still prevalent within the NHS (Healthcare Commission, 2006). The Director of Nursing, Heads of Nursing (Medical/Surgical) and the Head of Governance have understood the benefits that this system has to offer and have fully supported and actively encouraged the use of the clinical incident reporting system within the medical and surgical directorates.

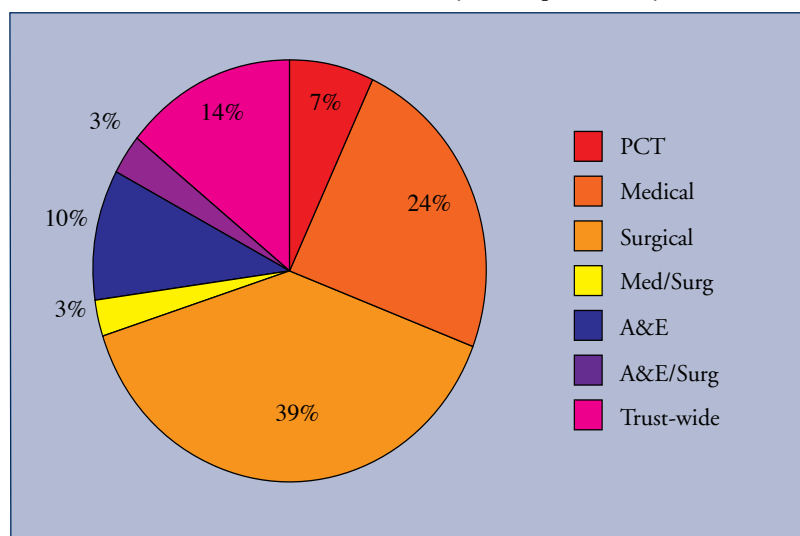


Figure 2. Location of reported clinical incidents 2006/7.

## Evaluation

Evaluation of the clinical reporting system for 2006/7 was based on 29 documented clinical incidents out of 368 patient referrals. Potentially there could have been 25% more incidents discovered within the year, as the DSN staffing level was reduced for six months to accommodate maternity leave.

Locations of reported incidents varied across the hospital, with 39% occurring in surgical wards, 24% in medical wards and 10% in A&E (see *Figure 2*). Types of reported incidents included hospital-induced diabetic emergencies with 39% being hyperglycaemia/diabetic ketoacidosis (DKA) and 22% being hypoglycaemia. Other incidents included prescription errors, guidelines not followed with no appropriate rationale provided, poor equipment management, poor attendance at training sessions, poor discharge planning, community based medication error, and poor equipment systems management Trust-wide (*Figure 3*).

So is it a nursing-only issue? Further analysis

proved the answer to be no: for example, prescription errors were made by consulting teams, resulting in poor nursing interpretation and culminating in poor patient care, along with poor diabetes management plans, resulting in incidents of hyperglycaemia/DKA or hypoglycaemia.

### Reasons for clinical incidents

A common theme that emerged from the evaluation of the clinical incidents is the definite lack of understanding about diabetes among hospital staff. This sentiment is echoed through a recent patient survey undertaken by Diabetes UK where a patient is quoted as saying 'when in hospital, keep your wits about you as the ignorance of diabetes by a lot of staff is verging on criminal' (Diabetes UK, 2007). It has become increasingly apparent that there is a real lack of diabetes knowledge and understanding, occasionally causing an apparent lack of concern from some hospital staff about the effects on the patient of poor diabetes control. There is widespread lack of expertise from a multitude of healthcare

### Page points

1. There is widespread lack of expertise from a multitude of healthcare professionals regarding the impact that diabetes can have upon the physiology and psychology of a patient, particularly when in conjunction with other medical conditions, occasionally resulting in hospital-induced DKA or acute hypoglycaemia.
2. A common theme that emerged from the evaluation of the clinical incidents is the definite lack of understanding about diabetes among hospital staff.

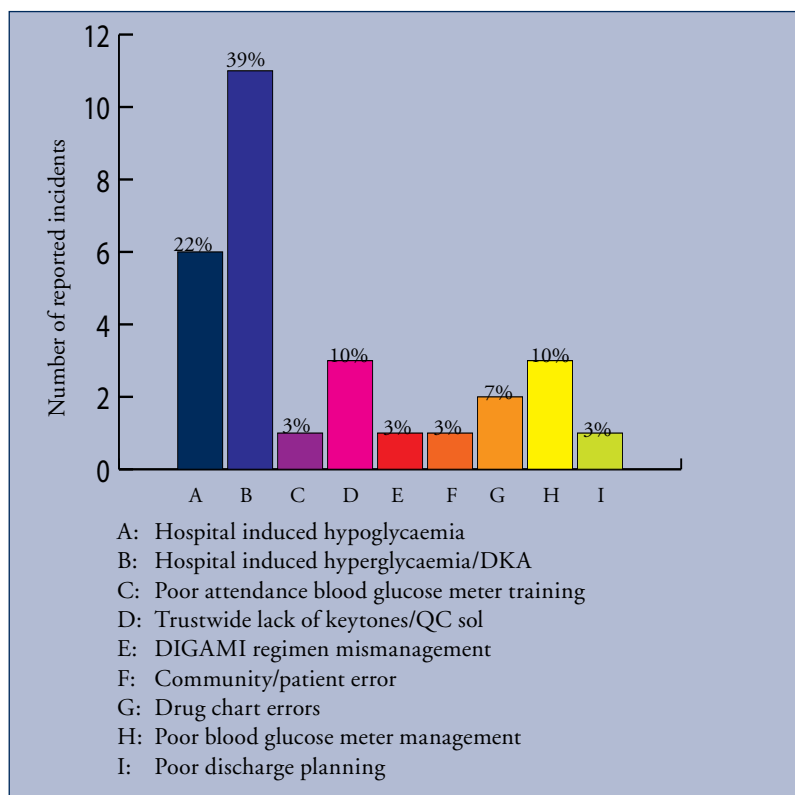


Figure 3. Types of clinical incidents reported during 2006/7. Percentages show reported incidences out of a total of 29.

professionals regarding the impact that diabetes can have upon the physiology and psychology of a patient, particularly when in conjunction with other medical conditions, occasionally resulting in hospital-induced DKA or acute hypoglycaemia (see Figure 3).

Another major theme was the lack of

relevant education received by medical and nursing staff about diabetes inpatients. Medical and nursing staff appeared to have a lack of opportunity for self education because of time constraints and perhaps a lack of awareness of education on offer. It may not be recognised by consulting teams, nurses or other HCPs, that the management of diabetes within the acute setting differs greatly from the management of diabetes in the community when the patient is otherwise well.

Patient-centred care should always be the main focus for any healthcare professional, yet, occasionally, professional courtesy between consulting teams (who are not specialists within diabetes) has been considered more important than improving the management of the patient's diabetes, with suggested treatments or alterations to diabetes regimens by DSNs often being delayed or omitted until discussions between teams could occur. The incident reporting system highlighted that poor communication between consulting teams often resulted in minimal or no documented reference to the patient's diabetes within the medical notes by either team. This lack of clear direction from consulting teams resulted in confusion of the patient's diabetes management and consequently sub-standard care was delivered by nursing staff and other HCPs.

### Educational outcomes

Previous education strategies have been developed in response to individual clinical incidents and the annual clinical incident reporting system evaluation. Education sessions set up by the AIP DSN service are currently offered to all nursing staff, clinical support workers, nursing and medical students, and junior doctors (F1 – House Officer/F2 – Senior House Officer). Throughout these sessions, the need for clear and concise communication and documentation between all healthcare professionals is highlighted. Nurses are being actively encouraged to challenge medical teams with regard to diabetes and to ask the

Box 2. Calculation for clinical incidents and cost to trust.	
Total Adult Admissions to Wards (Patients with Diabetes) (Includes A&E/MAU/SAU/Booked)	= 4 090
7.9% of DM admissions likely to be reported incidents (percentage based on clinical incident findings 2006/7)	= 323
323 x £250/day (cost based on 1 day extra stay resulting from incident)	= £80 750
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Total A&E/MAU attendees (Adults)	= 88 273
Of these approx 20% DM patients	= 17 654
7.9% of DM admissions/attendees likely to be reported incidents (percentage based on clinical incident findings 2006/7)	= 1 395
1395 x £250/day (cost based on 1 day extra stay resulting from incident)	= £348 750

*'This system has proven to be a vital commodity to the future direction of the AIP DSN service, by highlighting poorly informed practice and proving the need for essential diabetes inpatient education strategies.'*

question 'what is the plan for management of this patient's diabetes, doctor?' to act as a reminder of the need to assess and provide effective treatment to obtain better diabetes control. Examples of clinical incidents are analysed within these sessions to demonstrate how practice could have been improved and unnecessarily complicated and prolonged mismanagement of diabetes could have been avoided, with the benefits to the patient and the trust explained.

#### Financial cost of clinical incidents

Calculating exact financial costs resulting from this type of clinical incident is extremely difficult. When attempting to calculate the financial cost, there are many variables to consider, for example:

- does the extent of the incident result in extra length of stay for the patient and if so, for how long?
- does the extent of the incident require acute treatments?
- what are the costs (including cost of extra specialist input)?

Another variable is the extent to which poor control of diabetes can result in serious complications. Consequently, the following calculations are based on the assumption that each clinical incident results in one day extra stay. The percentage of potential Trust-wide clinical incidents (excluding psychiatry, paediatrics and midwifery) is based on the percentage of clinical incidents found from the referrals received (7.9%). The average cost of a 24-hour stay (not including medical costs) is approximately £250, according to current Trust finance data.

In 2006/7, there were 4090 adult admissions to the wards for patients with diabetes, of which 7.9% of these admissions could result in a clinical incident (n = 323). If each clinical incident resulted in one day extra stay in hospital for the patient, the potential cost to the Trust would be £80 750 pa.

If this calculation is applied to all 88 273 Accident & Emergency and Medical Assessment Unit attendees (resulting in 4090 subsequent admissions), of which it is estimated that 20%

would have diabetes, the potential cost to the Trust would be £348 750 p.a. (Box 2).

#### Conclusion

The AIP DSN clinical incident reporting system has demonstrated that it is detrimental to both the patient and the Trust when healthcare professionals do not fully understand the impact that diabetes can have on all areas of care and the patient's well being. This system has proven to be a vital commodity to the future direction of the AIP DSN service, by highlighting poorly informed practice and proving the need for essential diabetes inpatient education strategies. Despite the implementation of the clinical incident reporting system initially being aimed at nursing management for patients with diabetes, it has become apparent that some doctors also display a lack of knowledge regarding the effective management of adult inpatients with diabetes. The need for the continual evolution of education strategies for all healthcare professionals is evident, along with a shared responsibility to improve communication to ensure high standards of care. Empowering healthcare professionals will result in an excellent patient experience. ■

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