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NCEPOD

Peri-operative Management of Surgical Patients with Diabetes

National Confidential Enquiry into Patient Outcome and Death (NCEPOD)

REVIEWER ASSESSMENT FORM

CONFIDENTIAL

NCEPOD Number: ☐☐☐☐☐☐

How to complete the form:

Information will be collected using two methods; box cross and free text, where your opinion will be requested.

This form will be electronically scanned. Please use a black or blue pen. Please complete all questions with either block capitals or a bold cross inside the boxes provided e.g.

Was this appropriate?

☒ Yes ☐ No

If you make a mistake, please "black-out" the incorrect box and re-enter the correct information, e.g.

■ Yes ☒ No

Included in this case:

☐ Surgical questionnaire

☐ Anaesthetic questionnaire

☐ Notes from pre-assessment clinic (if applicable)

☐ Notes from hospital patient was admitted to

Note: please do not leave any questions blank

If the part of the record likely to contain the required information for you to answer a question has not been supplied, please mark the box "Insufficient Data" (ID) where provided.

If in your opinion a full set of notes has been provided and you think that information has not been written into the case notes, please mark the box "Not documented" (ND) where provided.

If you are unable to make a judgement or provide an opinion, please mark the box "Unknown" (UNK) where provided.

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PATIENT DETAILS

1. Age (at time of procedure) ☐☐☐ years

2. Gender ☐ Male ☐ Female

3a. Type of diabetes: ☐ Type 1 ☐ Type 2 ☐ Other (please state):

3b. Type of medication: ☐ Insulin ☐ Diet ☐ Oral hypoglycaemic agents
☐ Non-insulin injectable therapy ☐ Other (please specify): ☐ Unknown

4. How long ago was diabetes first diagnosed?
☐ 0-5 years ☐ 6-10 years ☐ > 10 years ☐ Unknown

5. Who normally looks after this patient's diabetes care? **(Please tick all that apply)**
☐ General practitioner ☐ Community diabetes specialist nurse ☐ Consultant diabetologist
☐ Other (please specify): ☐ Hospital diabetes specialist nurse ☐ Unknown

PRE-OPERATIVE ASSESSMENT

6a. Did the patient attend a pre-operative assessment clinic (POAC)* ☐ Yes ☐ No - go to Q8
*** Definitions on page18** ☐ ID ☐ Unknown

6b. If Yes to 6a, who did they see in the POAC?
☐ Doctor (please expand): ☐ *Consultant* ☐ *Non training grade* ☐ *Training grade*
☐ Diabetes specialist nurse ☐ Dietitian ☐ POAC nurse
☐ Other (please state:
☐ ID ☐ Unknown

6c. In your opinion had the patient seen all appropriate staff? ☐ Yes ☐ No

6d. If No to 6c, who should the patient have been seen by?
☐ Doctor (please expand): ☐ *Consultant* ☐ *Non training grade* ☐ *Training grade*
☐ Diabetes specialist nurse ☐ Dietitian ☐ POAC nurse
☐ Other (please state:

7a. Following attendance to the POAC were any changes made to the patient's diabetes management to optimise them for surgery? ☐ Yes ☐ No ☐ ID ☐ Unknown

7b. If Yes to 7a, what changes were undertaken?

7c. In your opinion were appropriate steps undertaken to control diabetes management pre-operatively?
☐ Yes ☐ No

7d. If No to 7c, what should have been done?

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8. Was the patient an elective referral? ☐ Yes - routine ☐ Yes - two week (rule) ☐ No

9a. Date of referral: ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy ☐ N/A

9b. Date of patient's last surgical outpatient review: ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy ☐ N/A

9c. Date the patient was placed on the waiting list: (including emergency patients) ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy ☐ N/A

10. Was the patient admitted whilst on an elective waiting list? ☐ Yes ☐ No - go to Q13 ☐ Unknown

11. Who made the referral?

☐ General practitioner ☐ District general hospital ☐ Tertiary centre

☐ Other (please specify): ☐ Managed pathway (e.g. physiotherapist)

12a. Was any information on the management of the patient's diabetes in the community available in the referral? ☐ Yes ☐ No

12b. If Yes to 12a, did it include: **(please select all that apply)** ***Definitions on page 18**

☐ Evidence of regular blood sugar measurement
☐ Patient co-morbidities
☐ Community diabetes specialist nurse assessment or notes
☐ List of current medication
☐ Evidence from the referral from primary care for surgery about the need to optimise the patient's diabetes mellitus
☐ Diabetes related complications
☐ HbA1c* (within the last 3 months)
☐ Urgency of referral
☐ BMI
☐ Blood pressure
☐ Estimated glomerular filtration rate (eGFR)
☐ Other (please state):

13a. Was a recent HbA1c* (3 months prior to surgery) available? ***Definitions on page 18**

☐ Yes ☐ No ☐ Unknown

13b. If Yes to 13a, was the HbA1c >8.5% or 69 mmol/L?

☐ Yes ☐ No ☐ Unknown

13c. If Yes to 13b, was there an attempt to improve control before surgery by referral to:

☐ Diabetes team ☐ Primary care ☐ Admitted to secondary care for optimisation

☐ Dietitian ☐ None ☐ Unknown

☐ Other (please state):

13d. If None to 13c and if the patient's HbA1c was >8.5% or 69mmol/L, was a reason documented as to why not? ☐ Yes ☐ No ☐ Unknown

13e. If Yes to 13d, please provide the reason:

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13f. In your opinion were sufficient attempts made to control pre-operative diabetes? ☐ Yes ☐ No

13g. If No, what was omitted?

14a. Was this patient booked as a day case? ☐ Yes ☐ No ☐ Unknown

14b. Was this appropriate? ☐ Yes ☐ No

14c. If No to 15a, should or could the patient have been booked as a day case? ☐ Yes ☐ No

15. Was a generic pre-assessment proforma completed for this patient? ☐ Yes ☐ No ☐ Unknown

16. If surgery was considered more important than the need for diabetes optimisation and HbA1c was > 8.5% or 69 mmol/L was a variable rate intravenous insulin infusion* (VRIII - previously known as "sliding scale") commenced on admission?

***Definitions on page 18**

☐ Yes ☐ No ☐ Unknown ☐ N/A

17a. Was the patient first on the scheduled operating list? ☐ Yes ☐ No

187. If No to 17a, please state why not:

17c. In your opinion was the operation time scheduling appropriate? ☐ Yes ☐ No

17d. If No, please state why not:

17e. What time of day was the patient booked to be on the operating list: ☐☐ ☐☐ (hh:mm) ☐ Unknown

18a. For how long was the patient fasted pre-operatively? ☐☐ hours

18b. How many meals did the patient miss pre-operatively? ☐☐

19a. In your opinion did prolonged starvation result in a change in the patient's treatment? ☐ Yes ☐ No ☐ N/A

19b. If Yes to 19a, prolonged starvation resulted in a change in the patient's treatment, does this include:

(please mark all that apply)

☐ Start of VRIII ☐ IV fluids ☐ Other (please state):

19c. In your opinion, could this have been avoided? ☐ Yes ☐ No

19d. If Yes, how?

20. If the patient has diabetic ketoacidosis* (DKA) was this being treated pre-operatively? ***Definitions on page 18**

☐ Yes ☐ No ☐ N/A ☐ Unknown

21a. Did the patient go to a high care area prior to surgery for optimisation? ☐ Yes ☐ No ☐ Unknown

21b. If No to 21a, in your opinion, should they have been? ☐ Yes ☐ No

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ADMISSION DETAILS

22. Date and time of arrival to hospital: ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy ☐☐ ☐☐ hh:mm

23. Date and time of admission to hospital: ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy ☐☐ ☐☐ hh:mm

☐ N/A elective patient

24. First documented assessment by healthcare professional (excluding triage):

Date: ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy **Time:** ☐☐ ☐☐ hh:mm

Grade: ☐☐ **Specialty:** ☐☐☐ **(Grade and speciality codes on page 18)**

25. Where was the patient first assessed (excluding triage)? ***Definitions on page 18**

☐ Emergency department ☐ Specialist ward ☐ Medical assessment unit

☐ Level 2 (HDU)* ☐ Level 3 (ICU)* ☐ Surgical assessment unit

☐ Other (please state): ☐ Pre-operative admissions unit ☐ General ward

26. Please specify an admission category:

☐ Elective — A time agreed between the patient and surgical service

☐ Planned — Within 48 hours of referral/ consultation

☐ Emergency — Immediately following referral/ consultation, where admission is unpredictable and at short notice because of clinical need

27. What was the diagnosis for this patient on admission?

28. Please state the grade and specialty of the clinician deciding to admit the patient

Grade: ☐☐ **Specialty:** ☐☐☐ **Grade and speciality codes on page 18**

29a. Was the patient's mental health considered on admission? ☐ Yes ☐ No ☐ Unknown

29b. Did the patient have a known or newly diagnosed mental health condition on admission?

☐ Yes ☐ No ☐ Unknown

29c. If Yes to 29b, please state:

30a. Had this patient's admission been cancelled on a previous occasion? ☐ Yes ☐ No ☐ Unknown

30b. If Yes to 30a, on how many occasions? ☐☐

30c. If Yes to 30a, was it cancelled for any reason other than a clinical one? ☐ Yes ☐ No ☐ Unknown

30d. If Yes to 30c, please give details:

31a. In your opinion, did the time spent waiting for the operation affect the patient's outcome?

☐ Yes ☐ No ☐ Unknown ☐ N/A

31b. If Yes to 31a, please give details:

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32a. To what specialty was the patient first admitted? ☐☐☐ **Speciality codes on page 18**

32b. In your opinion, was this an appropriate specialty for the patient to be admitted to?

☐ Yes ☐ No ☐ Unknown

33a. Was the patient transferred to another speciality? ☐ Yes ☐ No ☐ Unknown

33b. If Yes to 33a, was there a delay in the process of transfer? ☐ Yes ☐ No ☐ Unknown

33c. If Yes to 33a, please state reason for delay:

ASSESSMENT FOLLOWING ADMISSION

34. Please state the grade and specialty of the clinician who first assessed the patient following admission?

Grade: ☐☐ **Specialty:** ☐☐☐ **Grade and speciality codes on page 18**

35. What was the presumed diagnosis following the initial assessment?

36. Date and time of first consultant review: ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy ☐☐ ☐☐ hh:mm

37. If the patient was not expected to survive, was an end of life care pathway initiated?

☐ Yes ☐ No ☐ Unknown ☐ N/A

INPATIENT PRE-OPERATIVE CARE

38a. Was a referral made to the inpatient diabetes nurse specialist during the current inpatient admission?

☐ Yes ☐ No

38b. If No to 38b, in your opinion, should they have been? ☐ Yes ☐ No

38c. Was the inpatient diabetes specialist team consulted during the current inpatient admission?

☐ Yes ☐ No ☐ N/A

38d. If No to 38c, in your opinion, should they have been? ☐ Yes ☐ No

39a. Date and time referred to diabetes team: ☐☐ ☐☐ ☐☐☐☐ DD/MM/YYYY HH:MM ☐☐ ☐☐

39b. Date and time first seen by diabetes team: ☐☐ ☐☐ ☐☐☐☐ DD/MM/YYYY ☐☐ ☐☐

40a. Who was the patient seen by during the current inpatient admission?

☐ Consultant diabetologist ☐ Diabetes specialist nurse ☐ Core trainee in diabetes

☐ Other (please state):

☐ None of the above

40b. In your opinion, who should have seen the patient?

☐ Consultant diabetologist ☐ Diabetes specialist nurse ☐ Core trainee in diabetes

☐ Other (please state):

☐ None of the above

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41a. Was there a multi-disciplinary review meeting by the inpatient diabetes service?

☐ Yes ☐ No ☐ Unknown ☐ N/A

41b. If No to 41a, in your opinion should there have been? ☐ Yes ☐ No

41c. If Yes to 41a, who attended this?

☐ Consultant surgeon ☐ Consultant anaesthetist ☐ Consultant diabetologist

☐ Diabetes specialist nurse ☐ Consultant in intensive care ☐ Other (please state):

41d. In your opinion, who should have attended?

☐ Consultant surgeon ☐ Consultant anaesthetist ☐ Consultant diabetologist

☐ Diabetes specialist nurse ☐ Consultant in intensive care ☐ Other (please state):

42. Was a dietitian consulted during the current inpatient admission? ☐ Yes ☐ No ☐ Unknown

43a. Was a MUST* score calculated during the current inpatient admission? ☐ Yes ☐ No ☐ Unknown

***Definitions on page 18**

43b. In your opinion, was nutritional assessment adequate? ☐ Yes ☐ No

43c. If Yes to 43a, what was the score? ☐ 0: Low risk ☐ 1: Medium risk ☐ 2>: High risk

44a. What supplementary nutrition did the patient receive during the current inpatient admission?

☐ Parenteral nutrition ☐ Enternal feeding ☐ Normal diet

☐ Other (please state): ☐ Unknown ☐ None

44b. In your opinion, was nutritional treatment given sufficient? ☐ Yes ☐ No

PERI-OPERATIVE CARE

45. Was the pre-operative capillary blood glucose between 6-10 mmol/L? ☐ Yes ☐ No

46. Was a recent (within the last month) electrocardiogram (ECG) available? ☐ Yes ☐ No

47. On admission was there any record of: **(please mark all that apply)**

☐ Blood ketone measurement ☐ Urine ketone measurement ☐ None ☐ Unknown

48a. Was there senior multi-disciplinary input in the decisions around the peri-operative management of this patient?

☐ Yes ☐ No

48b. If Yes to 48a, please indicate who was involved?

☐ Consultant surgeon ☐ Consultant anaesthetist ☐ Consultant diabetologist

☐ Consultant in intensive care

48c. In your opinion, were all appropriate staff involved? ☐ Yes ☐ No

48d. If No to 48c, who should have been involved?

☐ Consultant surgeon ☐ Consultant anaesthetist ☐ Consultant diabetologist

☐ Consultant in intensive care

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49a. On admission to hospital was a pre-operative assessment of risk made? ☐ Yes ☐ No

49b. If Yes to 49a, which of the following were used:

☐ P-POSSUM ☐ SORT ☐ ASA ☐ American College of Surgeons risk assessment

☐ Other (please specify):

49c. If ASA used, please state the patient's ASA grade immediately pre-operatively:

☐ ASA I - A normal healthy patient

☐ ASA II - A patient with a mild systemic disease

☐ ASA III - A patient with severe systemic disease

☐ ASA IV - A patient with severe systemic disease that is a constant threat to life

☐ ASA V - A moribund patient who is not expected to survive the operation

49d. In your opinion was pre-operative risk assesssment adequate? ☐ Yes ☐ No

49e. If No, please provide reason why:

50. Was a pre-operative risk of post-operative nausea and vomiting carried out? (e.g. apfel score)

☐ Yes ☐ No ☐ Unknown

51a. Following admission was there any further delays in order to optimise the patient's condition for surgery?

☐ Yes ☐ No ☐ Unknown

51b. If Yes to 51a, how long was the delay? ☐☐ hours ☐☐ days

51c. If Yes to 51a, was this related to: ☐ Diabetes control ☐ Co-morbidities

51d. If co-morbidites, please describe:

52a. Following admission was the patient seen by an anaesthetist on the day of surgery? ☐ Yes ☐ No

52b. If Yes to 52a, please state anaesthetist's grade: ☐☐ **Please use grade codes on page 18**

53a. Was this pre-operative assessment documented? ☐ Yes ☐ No

53b. If Yes to 53a, was a peri-operative diabetes management plan documented? ☐ Yes ☐ No

53c. If Yes to 53b, was this appropriate? ☐ Yes ☐ No

53d. If No to 53c, why not?

53e. If No to 53b, should a management plan have been documented? ☐ Yes ☐ No

53f. If Yes to 53a, were the patient's co-morbidities related to their diabetes documented in this assessment?

☐ Yes - macrovascular disease* ☐ Yes - microvascular disease* ☐ No

***Definitions on page 18**

53g. If Yes to 53a, were the patient's diabetes medications documented as part of this assessment?

☐ Yes ☐ No

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54a. Which diabetes medicines was the patient on pre-operatively?

☐ None - diet controlled

Insulin

☐ Once daily ☐ Twice daily ☐ 3 times a day ☐ 4 times a day ☐ 5 times a day

Oral hypoglycaemic agents **(please see page 19 for medicine references)**

☐ Meglitinides ☐ Biguanides ☐ SGLT-inhibitors ☐ Sulphonylureas ☐ DPP IV inhibitors

☐ Alpha glucosidase inhibitors ☐ Thiazolidinediones (gliztazones)

Other injectable therapy

☐ GLP-1 (analogues)

54b. In your opinion, were diabetes medicines managed appropriately? ☐ Yes ☐ No

54c. If No to 54c, please state reason why:

54d. In your opinion, was adequate medicine reconciliation performed on admission by:

i) Medical staff ☐ Yes ☐ No ☐ ID ☐ Unknown

ii) Pharmacy ☐ Yes ☐ No ☐ ID ☐ Unknown

55a. Was the patient part of an Enhanced Recovery Programme? ☐ Yes ☐ No ☐ Unknown

55b. If Yes to 55a, did they undergo pre-operative carbohydrate loading? ☐ Yes ☐ No ☐ Unknown

55c. If Yes to 55b, what was used?

☐ Pre-load ☐ Pre-op nutrition and carbohydrate loading ☐ Other (please specify):

55d. If Yes to 55b, was pre-operative carbohydrate loading given (please tick **two** that apply):

☐ The night before surgery ☐ 2 hours before transfer to theatre

☐ The morning of surgery (>2 hours before transfer to theatre)

55e. If Yes to 55a, should pre-operative carbohydrate loading have been given? ☐ Yes ☐ No

55f. If No to 55e, please state reason why:

56. Were capillary blood glucose measurements taken after pre-operative carbohydrate loading?

☐ Yes (please state): ☐☐ mmol/L ☐ No

57a. Was a WHO surgical checklist performed? ☐ Yes ☐ No ☐ Unknown

57b. Was diabetes management discussed as part of the WHO checklist? ☐ Yes ☐ No ☐ Unknown

58. Was there documented evidence that the patient was given instructions regarding the peri-operative management of their diabetes prior to surgery?

☐ Yes ☐ No ☐ ID ☐ Unknown

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59a. Which peri-operative IV fluids were administered?

☐ Hartmanns ☐ 0.9% saline ☐ 4% dextrose saline in 0.18% saline ☐ 5% dextrose
☐ Dextrose saline in 0.18% ☐ 5% dextrose in 0.9% saline
☐ 5% dextrose in 0.45% saline ☐ Other (please state):

59b. In your opinion, was this appropriate? ☐ Yes ☐ No

59c. If No to 59b, please state reason why:

60. Was urine output monitored? ☐ Yes ☐ No ☐ Unknown

61a. Were capillary blood glucose measurements recorded peri-operatively? ☐ Yes ☐ No ☐ Unknown

61b. If Yes to 61a, was this recorded hourly? ☐ Yes ☐ No ☐ Unknown

61c. If Yes to 61a, were all the peri-operative capillary blood glucose measurements between 6-10mmol/L?

☐ Yes ☐ No ☐ Unknown

i) If Yes to 61c, what was the lowest peri-operative capillary blood glucose? ☐☐☐ mmol/L

ii) If Yes to 61c, what was the highest peri-operative capillary blood glucose? ☐☐☐ mmol/L

61d. In your opinion, was blood glucose measured sufficiently frequently?

61e. If No to 61d, please state reason why:

62a. Was any subcutaneous insulin administered peri-operatively? ☐ Yes ☐ No ☐ Unknown

62b. If Yes to 62a, please state reason why?

ANAESTHESIA

63a. What type of anaesthesia was used?

☐ Local only ☐ Regional only ☐ Regional and sedation
☐ General only ☐ General and regional ☐ General and local infiltration

63b. If GENERAL was used:

i) Was the patient's trachea intubated? ☐ Yes ☐ No ☐ Unknown

ii) Had consideration been given to performing the procedure using local/ regional anaesthesia alone?

☐ Yes ☐ No ☐ Unknown

iii) Was total intravenous anaesthesia or inhalational anaesthesia used to minimise post-operative nausea and vomiting?

☐ Inhalational anaethesia ☐ Total intraveous anaesthesia

64. What grade of anaesthetist administered the anaesthetic? ☐☐ **Please see grades on page 18**

65. Was the anaesthetist who administered the anaesthetic the same as the one who saw the patient pre-operatively?

☐ Yes ☐ No ☐ N/A (patient not seen by anaesthetist pre-operatively)

66. Was dexamethasone administered peri-operatively? ☐ Yes ☐ No ☐ Unknown

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67a. At induction of anaesthesia, were any blood tests known to be abnormal?

☐ Yes ☐ No ☐ Unknown

67b. If Yes to 67a, which were abnormal?

68a. Did the patient arrive in theatre with a VRIII* set up? ☐ Yes ☐ No ☐ Unknown

68b. If Yes to 68a, was this appropriate? ☐ Yes ☐ No

68c. If Yes to 68a, was this stopped: ☐ Prior to the operation ☐ During the operation ☐ Not stopped

68d. If stopped, when was VRIII re-started? ☐☐ hours later ☐ N/A not stopped

69a. Was VRIII commenced intra-operatively? ☐ Yes ☐ No ☐ N/A

69b. If Yes to 69a, please state reason why:

70. If VRIII was used peri-operatively, was it recorded on the anaesthetic chart?

☐ Yes ☐ No ☐ N/A

71a. Which peri-operative fluid was administered as part of VRIII?

71b. In your opinion was VRIII used appropriately? ☐ Yes ☐ No

71c. If No to 71b, please state reason why:

72. Was invasive cardiovascular monitoring used peri-operatively? ☐ Yes ☐ No

73. Did the patient develop any of the following diabetes complications peri-operatively?

☐ Hypoglycaemia* requiring treatment (<4mmol/L) ☐ Diabetic ketoacidosis* (DKA) ☐ No

☐ Hyperosmolar hyerglycaemic state* (HSS) ☐ Over-administration of insulin

☐ Other (please state):

***Definitions on page 18**

74a. Were intra-operative urea and electrolytes recorded as part of arterial blood gas measurements? ☐ Yes ☐ No

74b. If Yes to 74a, were they abnormal? ☐ Yes ☐ No

74c. If Yes to 74b, please provide further details:

75. Were there any episodes of peri-operative hypotension? ☐ Yes ☐ No

76a. Were there any peri-operative untoward events? ☐ Yes ☐ No

76b. If Yes to 76a, please state:

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OPERATION

77a. Were there any delays caused by poor control of diabetes between admission and the operation?

☐ Yes ☐ No

77b. If Yes to 77a, how long was surgery delayed by? ☐☐☐ days ☐☐ hours

77c. In your opinion, could pre-operative management on diabetes have been improved? ☐ Yes ☐ No

77d. If Yes, please state how:

78a. Were there any other avoidable delays? ☐ Yes ☐ No

78b. If Yes to 78a, please state:

79. Please classify urgency of the procedure:

☐ Immediate — Immediate life, limb or organ-saving intervention – resuscitation simultaneous with intervention. Normally within minutes of decision to operate

☐ Urgent — Intervention for acute onset or clinical deterioration of potentially life-threatening conditions, for those conditions that may threaten the survival of limb or organ, for fixation of many fractures and for relief of pain or other distressing symptoms. Normally within hours of decision to operate.

☐ Expedited — Patient requiring early treatment where the condition is not an immediate threat to life, limb or organ survival. Normally within days of decision to operate.

☐ Elective — Intervention planned or booked in advance of routine admission to hospital. Timing to suit patient, hospital and staff.

80. What operation was undertaken?

81. Please state the diagnosis established at operation (if different from admission)

82a. Were there any unanticipated intra-operative problems? ☐ Yes ☐ No ☐ Unknown

82b. If Yes to 82a, please specify:

83. What type of theatre was the procedure conducted in?

☐ Dedicated emergency theatre ☐ Elective theatre ☐ Specialist theatre

☐ Other (please state): ☐ General theatre

84a. What was the grade of the most senior operating surgeon (as distinct from surgeons present in an assisting or supervisory capacity) at the start of this case?

Grade: ☐☐ **(Grade codes on page 18)**

84b. Was this grade appropriate for the complexity of this case? ☐ Yes ☐ No ☐ Unknown ☐ ID

85. What level of supervision did the primary operator have if they were not a consultant?

☐ Supervised scrubbed ☐ Unsupervised in theatre ☐ Unsupervised in hospital

☐ Other (please state):

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86a. Did the patient receive a blood transfusion during surgery? ☐ Yes ☐ No ☐ Unknown

86b. If Yes to 86a, how many units were given? ☐☐ units of blood

POST-OPERATIVE MANAGEMENT

87. Following theatre recovery, where did the patient go?

☐ Discharge lounge ☐ Day surgery unit ☐ Medical ward ☐ Surgical ward ☐ Critical care

88a. Who managed the patient's diabetes in the post-operative period:

☐ Patient ☐ Diabetes team ☐ Diabetes specialist nurse
☐ Other (please state): ☐ Anaesthetic team ☐ Surgical team

88b. In your opinion was this appropriate? ☐ Yes ☐ No

88c. If No to 88b, who should have managed the patient's diabetes in the post-operative period?

☐ Patient ☐ Diabetes team ☐ Diabetes specialist nurse
☐ Other (please state): ☐ Anaesthetic team ☐ Surgical team

89a. If the **diabetes team,** how frequently was the patient reviewed?

☐ Daily ☐ Twice daily ☐ On referral ☐ Before discharge ☐ Other (please state):

89b. In your opinion was this appropriate? ☐ Yes ☐ No

89c. If No to 89b, how frequently should the patient have been reviewed by the diabetes team?

☐ Daily ☐ Twice daily ☐ On referral ☐ Before discharge ☐ Other (please state):

90. Was dexamethasone prescribed as an antiemetic? ☐ Yes ☐ No

91. Was multimodal analgesia prescribed? ☐ Yes ☐ No

92. Were nonsteroidal anti-inflammatory drugs part of the post-operative analgesia regimen?

☐ Yes ☐ No ☐ Unknown

93a. Was the patient started on VRIII within the first 48 hours post-operatively? ☐ Yes ☐ No

93b. If Yes, was this appropriate? ☐ Yes ☐ No

94a. Was the patient's blood glucose measured every hour? ☐ Yes ☐ No

94b. In your opinion, was post-operative blood glucose measurement satisfactory? ☐ Yes ☐ No

94c. If No to 94b, please give reason why:

94d. What was the lowest blood glucose measurement: ☐☐ mmol/L

94e. What was the highest blood glucose measurement: ☐☐ mmol/L

95. If the patient had Type 1 diabetes, how long after their first post-operative dose of subcutaneous insulin was the VRIII stopped?

☐☐ hours ☐☐ days ☐ N/A patient did not have Type 1 diabetes

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96. What arrangements were made to ensure the patient returned safely to their normal diabetes medication?

☐ Diabetes post-operative pathway ☐ Anaesthetic notes ☐ Surgical notes
☐ Diabetes team review ☐ Other (please state):

97. In your opinion, were there clear instructions documented as to how the patient should return to their normal diabetes medication?

☐ Yes ☐ No ☐ Unknown ☐ ID

98a. In your opinion was post-operative diabetes medicine management adequate?

☐ Yes ☐ No ☐ Unknown

98b. If No to 98a, please state reason why:

99a. Was there any input regarding nutrition at any time in the patient's operative pathway?

☐ Yes ☐ No ☐ Unknown

99b. If Yes, was this for:

☐ Management of oral intake ☐ Optimisation of glycaemic control
☐ Consideration of enteral nutrition ☐ Consideration of parenteral nutrition

100. Did the patient see a dietitian post-operatively? ☐ Yes ☐ No

101a. Was a MUST* score calculated post-operatively? ☐ Yes ☐ No ☐ Unknown

101b. If Yes to 101a, what was the score? ☐ 0: Low risk ☐ 1: Medium risk ☐ 2>: High risk

102. What supplementary nutrition did the patient receive post-operatively?

☐ Parenteral nutrition ☐ Enternal feeding ☐ Normal diet
☐ Other (please state): ☐ Unknown ☐ None

102b. How long was this given for? ☐ N/A none given ☐☐☐ days

102c. When was nutrition started: ☐ N/A none given ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy

103. Was an early warning score* used post-operatively? ***Definitions on page 18** ☐ Yes ☐ No

104a. Who reviewed the patient post-operatively? **(please tick all that apply)**

☐ Surgeon ☐ Diabetes team ☐ Diabetes specialist nurse ☐ Physiotherapist
☐ Anaesthetist ☐ Occupational therapist ☐ Other (please state):

104b. In your opinion, was the patient seen by all appropriate staff post-operatively? ☐ Yes ☐ No

104c. If No to 104b, who should they have been reviewed by? **(please tick all that apply)**

☐ Surgeon ☐ Diabetes team ☐ Diabetes specialist nurse ☐ Physiotherapist
☐ Anaesthetist ☐ Occupational therapist ☐ Other (please state):

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105. Please describe any post-operative complications

106. How were compliations identified?

107. How were complications managed?

108a. Did the patient experience any specific diabetes complications? ***Definitions on page 18**

- ☐ Diabetic ketoacidosis* (DKA)
- ☐ Hypoglycaemia* needing treatment
- ☐ Other (please specify):
- ☐ Hyperosmolar hyperglycaemic state* (HSS)

108b. If Yes to 108a, was appropriate action taken? ☐ Yes ☐ No ☐ Unknown

108c. If Yes to 108a, was this avoidable? ☐ Yes ☐ No ☐ Unknown

108d. If Yes to 108c, please give details:

DISCHARGE

109. Who was involved in the patient's discharge planning? **(please tick all that apply)**

- ☐ Diabetes team
- ☐ Surgeon
- ☐ Diabetes specialist nurse
- ☐ Rehabilitation
- ☐ Physiotherapy
- ☐ Occupational therapy
- ☐ Dietitian
- ☐ Other (please specify):

110. Date of discharge: ☐☐ ☐☐ ☐☐☐☐ dd/mm/yyyy

111. Final diagnosis at discharge:

112a. Were arrangements made for the patient's diabetes care? ☐ Yes ☐ No ☐ Unknown

112b. If Yes to 112a, what arrangements were made? **(please tick all that apply)**

- ☐ Diabetes team follow-up
- ☐ Self management
- ☐ General practitioner follow-up
- ☐ Other (please specify):

113a. In your opinion, were appropriate discharge arrangements made? ☐ Yes ☐ No

113b. If No to 113a, please give reason why:

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114a. Was the patient re-admitted within 30 days after discharge? ☐ Yes ☐ No ☐ Unknown

114b. If Yes to 114a, what was the reason for the re-admission?

☐ Unrelated to previous admission

☐ Diabetes complication (please specify):

☐ Surgical complication (please specify):

☐ Other (please specify):

115. Did the patient die during this admission? ☐ Yes ☐ No

If Yes please continue to Q116 If No please continue to Q118

116. Date of death: ☐☐ ☐☐ ☐☐☐☐ d d / m m / y y y y

117. Please state the cause of death as written on the medical certificate of cause of death (MCCD) or as determined by the coroner?

1a. _____

1b. _____

1c. _____

2. _____

AUDIT

118a. Was there a critical incident relating to the patient's diabetes management during this admission?

☐ Yes ☐ No ☐ Unknown

118b. If Yes to 118a, please describe:

118c. If Yes to 118a, was this reported using the local hospital reporting system?

☐ Yes ☐ No ☐ Unknown

119. Was the incident discussed at a formal multi-disciplinary review/ audit/ mortality and morbidity meeting?

☐ Yes ☐ No ☐ Unknown

120. Were there any incidents:

a) In the prescription of insulin ☐ Yes ☐ No ☐ ID ☐ Unknown

b) In the administration of insulin ☐ Yes ☐ No ☐ ID ☐ Unknown

c) In the prescription of oral medication or insulin ☐ Yes ☐ No ☐ ID ☐ Unknown

d) In the administration of oral medication or insulin ☐ Yes ☐ No ☐ ID ☐ Unknown

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OVERALL SUMMARY

121a. In your opinion were there any areas were there was potential for improvement in the care of the patient?

☐ Yes ☐ No

121b. If Yes to 121a, please select all that apply:

☐ Poor timing and assessment of blood glucose and HbA1c in primary care
☐ Poor timing and assessment of blood glucose and HbA1c in secondary care
☐ Poor pre-assessment(s) prior to surgery
☐ Poor optimisation of glycaemic control pre-surgery
☐ Poor communication between patient and primary care
☐ Poor communication between clinicians
☐ Adverse event in administration
☐ Adverse event in prescribing
☐ Other (please specify below):
☐ Delays in the process
☐ Delays in referral procedures
☐ Poor discharge planning
☐ Poor medication management
☐ Poor management of nutrition and fluids
☐ Poor diabetes management planning

122a. Please indicate what your overall view is of the case. Practice was:

☐ 1 - Good Practice: A standard that you would expect from yourself, your trainees and your institution
☐ 2 - Room for improvement: Aspects of CLINICAL care that could have been better
☐ 3 - Room for improvement: Aspects of ORGANISATIONAL care that could have been better
☐ 4 - Room for improvement: CLINICAL AND ORGANISATIONAL aspects of care that could have been better
☐ 5 - Less than satisfactory: SEVERAL ASPECTS OF CLINICAL AND/OR ORGANISATIONAL care that were well below a standard you would expect from yourself, your trainees and institution
☐ 6 - Insufficient data

122b. If you select an option between 2 and 5, please expand upon your answer:

123a. Are there any issues from this case that you feel should be highlighted in the final report?

☐ Yes ☐ No

123b. If Yes, please give details

123a. Please check this box if you think we should consider this as a case study/ vignette in the report ☐

End of reviewer form

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CODES FOR GRADE

01 – Consultant
02 – Staff grade/Associate specialist
03 – Trainee with CCT
04 – Senior specialist trainee (ST3+ or equivalent)
05 – Junior specialist trainee (ST1&ST2 or CT equivalent)
06 – Basic grade (FY1/ FY2 or equivalent)
07 – Specialist nurse (nurse consultant, nurse practitioner, clinical nurse specialist
08 – Senior staff nurse,enrolled nurse
10 – Non-registered staff (HCA etc.)

SPECIALTY CODES

SURGICAL SPECIALTIES

100 = General Surgery
101 = Urology
103 = Breast Surgery
104 = Colorectal Surgery
105 = Hepatobiliary & Pancreatic Surgery
106 = Upper GI Surgery
107 = Vascular Surgery
110 = Trauma & Orthopaedics
120 = Ear, Nose & Throat (ENT)
130 = Ophthalmology
140 = Oral Surgery
145 = Oral & Maxillo-Facial Surgery
150 = Neurosurgery
160 = Plastic Surgery
161 = Burns Care
170 = Cardiothoracic Surgery
172 = Cardiac Surgery
173 = Thoracic Surgery
180 = Accident & Emergency
190 = Anaesthetics
192 = Critical/Intensive care medicine

MEDICAL SPECIALTIES

300 = General Medicine
301 = Gastroenterology
302 = Endocrinology
303 = Clinical Haematology
306 = Hepatology
307 = Diabetic Medicine
314 = Rehabilitation
315 = Palliative Medicine
320 = Cardiology
326 = Acute internal medicine
330 = Dermatology
340 = Respiratory Medicine
350 = Infectious Diseases
360 = Genito-Urinary Medicine
361 = Nephrology
370 = Medical Oncology
400 = Neurology
410 = Rheumatology
430 = Geriatric Medicine
500 = Obstetrics & Gynaecology
502 = Gynaecology
800 = Clinical Oncology
810 = Radiology
820 = General Pathology
823 = Haematology

DEFINITIONS

Diabetic ketoacidosis (DKA)	Consistently high blood glucose levels can lead to a condition called diabetic ketoacidosis. This happens when a severe lack of insulin means the body cannot use glucose for energy, and the body starts to break down other body tissue as an alternative energy source. The diagnosis is made with a pH <7.3, bicarbonate concentration <15mmol/l and a glucose of >11 (or a history of diabetes), and ketosis (urine ketones more than ++ and/or blood ketone level >3mmol/l)
Early warning score (EWS)	A simple scoring system in which a score is allocated to physiological measurements already undertaken when patients present to, or are being monitored in hospital. Six simple physiological parameters form the basis of the scoring system: (1) respiratory rate, (2) oxygen saturations, (3) temperature, (4) systolic blood pressure, (5) pulse rate, (6) level of consciousness
HbA1c	HbA1c (also referred to as A1c or haemoglobin A1c) refers to glycated haemoglobin. It develops when haemoglobin, a protein within red blood cells that carries oxygen throughout te body, joins with glucose in the blood, becoming 'glycated'. By measuring glycated haemoglobin (HbA1c), clinicians are able to get an overall picture of what the average blood sugar levels have been over a period of weeks/months. For people with diabetes this is important as the higher the HbA1c, the greater the risk of developing diabetes-related complications
High dependancy unit (HDU)	Level 2 (HDU) – Patients requiring more detailed observation or intervention including support for a single failing organ system or post operative care, and those stepping down from higher levels of care (NB: When basic respiratory and basic cardiovascular support are provided at the same time during the same critical care spell and no other organ support is required, the care is considered to be Level 2 care)
Hyperosmolar hyperglycaemic state (HSS)	HSS is a complication of diabetes mellitus (predominantly type 2) in which high blood sugars cause severe dehydration, increases in osmolarity (relative concentration of solute) and a high risk of complications, coma and death. It is diagnosed with blood tests. A glucose >30 mmol/L, an osmolarity of 320 mOsml/L with dehydration
Hypoglycemia	Hypoglycemia occurs when blood glucose levels fall below 4 mmol/L (72mg/dL)
Intensive care unit (ICU)	Level 3 (ICU) – Patients requiring advanced respiratory support alone or basic respiratory support together with support of at least two organs. This levels includes all complex patients requiring support for multi-organ failure. (NB: Basic respiratory and basic cardiovascular do not count as two organs if they occur simultaneously – see above under level 2 care – but will count as level 3 if another organ is supported at the same time)
Malnutrition universal screening tool (MUST)	MUST is a 3 step screening tool to identify adults, who are malnourised, at risk of malnutrition, or obese. It also include management guidelines which can be used to develop a care plan
Macrovascular disease	Disease of the large blood vessels, including the coronary arteries, the aorta, and the large arteries in the brain and in the limbs. This sometimes occurs when a person has diabetes for a long time.
Microvascular disease	Disease of the finer blood vessels in the body, including the capillaries. The microvascular complications of diabetes such as neuropathy can lead to loss of sensation and the development of foot ulcers.
Pre-operative assessment clinic (POAC)	The pre-operative assessment clinic is a nurse-led clinic that specialises in preparing patients for their planned surgery.
Variable rate intravenous insulin infusion (VRIII)	The infusion of intravenous insulin at a variable rate according to regular capillary blood glucose measurements with the aim of controlling serum glucose levels within a specified range. The VRIII is usually accompanied by an infusion of fluid containing glucose to prevent insulin-induced hypoglycaemia

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ORAL HYPOGLYCAEMIC AGENTS

Biguanides
Metformin IR
Metformin SR

Meglitinides
Repaglinide
Nateglinide

Sulphanylureas
Amaryl (glimepiride)
Daonil (glibenclamide)
Diamicron (gliclazide)
Diamicron MR (gliclazide)
Glibenese (glipizide)
Minodiab (glipizide)
Tolbutamide

Thiazolidinediones (glitazones)
Avandia (rosiglitazone)
Actos (pioglitazone)
Rezulin (troglitazone)

Alpha glucosidase inhibitors
Miglitol
Voglibose
Acarbose

SGLT-2 inhibitors
Forxiga (dapagliflozin)
Invokana (canagliflozin)
Jardiance (empagliflozin)

Dipeptidyl peptidase IV inhibitors
Vildagliptin
Saxagliptin
Sitagliptin
Linagliptin

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