



Diabetes Guidelines and their Implementation

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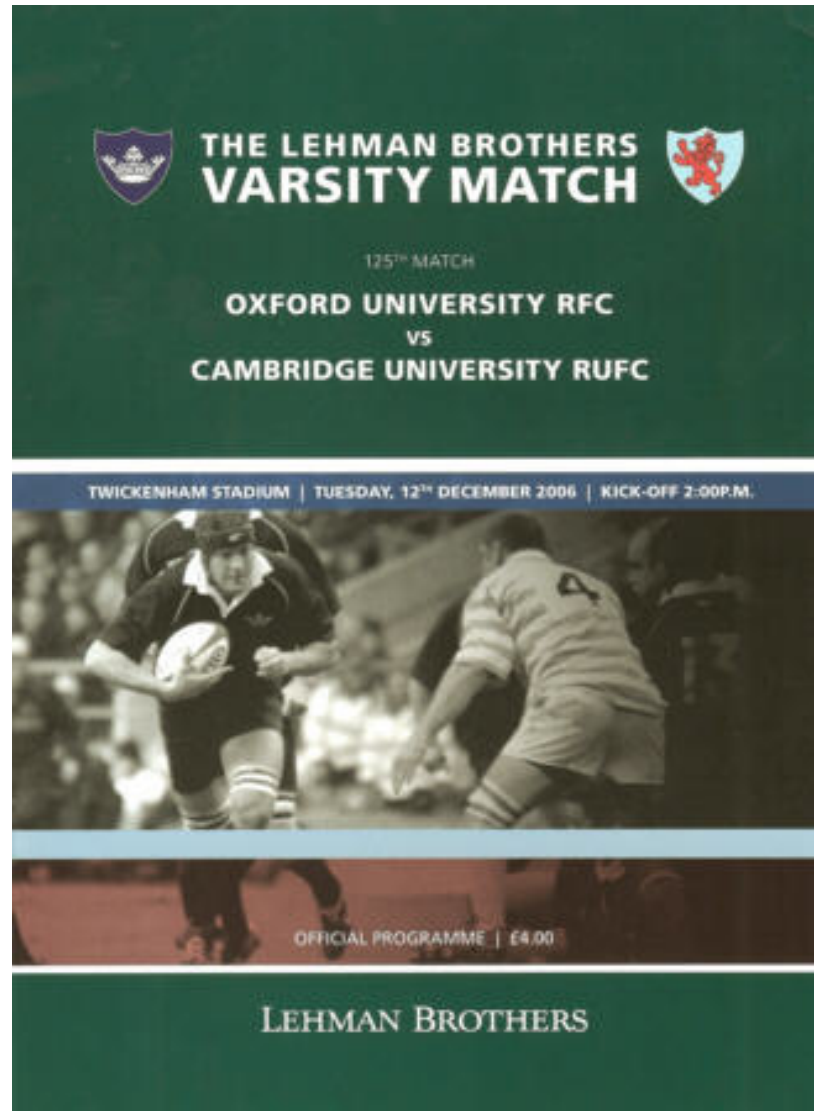
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Who is This Strange Man?

- I qualified in 1991
- I trained in D&E and GIM in South Thames
- I did general practice for 2 years
- I did ITU / anaesthetics for a year
- I did research at Mayo Clinic
- I have been in Norwich since 2004
- Currently my national roles are
 - ABCD meetings secretary
 - Secretary of the SCE in D&E
 - JBDS – IP Group member (inpatient diabetes guidelines)
 - Peri-operative, DKA, Hypo, HHS, enteral feeding, self management, e-learning on safe use of IV insulin, etc, etc, etc

How Did I Get into Guidelines?



Diabetic ketoacidosis

Saline should be used for fluid replacement rather than Hartmann's solution



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Diabetic ketoacidosis is a life threatening condition caused by insulin deprivation or inadequate use of insulin in people with type 1 (or occasionally type 2) diabetes mellitus. Precipitants include deliberate insulin omission, intercurrent illness, surgery, trauma, alcohol, late presentation of previously undetected type 1 diabetes, and the use of drugs that alter carbohydrate metabolism.¹ People with diabetic ketoacidosis need swift intervention by specialists because of the substantial morbidity and mortality arising from the acid-base imbalance, profound fluid loss, and electrolyte disturbances.

Current guidelines written by diabetes specialists from the United States and the United Kingdom recommend initial replacement of fluids and electrolytes and intravenous insulin.¹⁻² The fluid advocated in these guidelines is 0.9% saline. However, people may be treated by emergency and intensive care doctors as well as diabetes specialists, and the type of fluid used can vary.

During the first few hours of hospital admission many people with diabetic ketoacidosis are treated by emergency or intensive care doctors who com-

monly prefer to use Hartmann's solution (sodium lactate intravenous infusion).³ Subsequent care is usually delivered by the diabetes team, who prefer to use 0.9% saline. The conflict arises because guidelines for fluid replacement in the acute setting are written by diabetes specialists,¹⁻² whereas no widely accepted guidelines have been written by emergency or intensive care doctors for fluid replacement in diabetic ketoacidosis.

For decades, 0.9% saline has been the fluid of choice for diabetic ketoacidosis, and its use continues to be advocated in modern textbooks on diabetes.⁴ Early studies on diabetic ketoacidosis in the 1970s used 0.9% saline,⁵ and this approach was reinforced a decade later.⁶ However, giving patients large amounts of chloride can cause a hyperchloraemic metabolic acidosis,³⁻⁷ so administration of 0.9% saline for diabetic ketoacidosis could potentially worsen the metabolic acidosis. Thus, 0.9% saline may be the fluid of choice simply because evidence for the efficacy of other fluids is lacking. The question of which fluid replacement is optimal in patients with acute diabetic ketoacidosis is, therefore, still unanswered.

What is a Guideline?

- Any guide or indication of a future course of action

Why Are They Needed?

- To standardise the care people receive
- A bit of history.....
- It used to be the incoming registrars' job to 'rewrite the DKA guideline'

How it Used to Be Done

- ABC
- Lots of normal saline
- Stat intravenous insulin followed by constant or variable rate intravenous insulin infusion
- A few other things (potassium, phosphate, \pm bicarbonate, etc.)

Because every hospital did something slightly differently this lead to variations in care

THE MID STAFFORDSHIRE
NHS FOUNDATION TRUST
PUBLIC INQUIRY

Chaired by Robert Francis QC

**Report of
the Mid Staffordshire
NHS Foundation Trust
Public Inquiry
Executive summary**

HC 947

The Story So Far

- ABCD / DUK / DISN all came together under the auspices of NHS diabetes to form JBDS

List of Published JBDS Guidelines (so far)

- Management of hypoglycaemia
 - Management of DKA
 - Management of adult patients with diabetes undergoing surgery or procedures
 - Management of enteral feeding
 - Management of HHS
- Both of these were updated and released in October 2013

www.diabetologists-abcd.org.uk/JBDS/JBDS.htm

A List of Those to Come Very Soon

- Admissions avoidance
- Discharge planning
- VRIII use for medical inpatients
- VRII for inpatients with acute coronary syndromes and diabetes
- The management of steroid induced hyperglycaemia

Assessing Their Impact

- Survey monkey was sent out at the end of 2012 via the ABCD and UK DISN group asking the following questions
 - Were you aware of the guidelines?
 - If so, have you adopted them for local use?
 - If so, did you get support from your Trust?
 - If so, what do you think of them (quality, usefulness, cost, patient safety)?
 - Have you audited the results of their implementation?
 - If you have not adopted them, why not?
 - If you have not adopted them, what do you now feel about their quality?

Awareness

		Awareness
Hospital management of hypoglycaemia	107/107	100%
The management of DKA	96/96	100%
Self management of diabetes in hospital	72 /82	87.8%
Glycaemic management & enteral feeding in stroke	67 /89	84.8 %
Management of HHS	69 /77	89.6 %
Peri-operative diabetes care	84/92	91.3%

Overall Impact

- JBDS – IP guidelines seem to have been distributed actively (>21,000 hard copies, excluding downloads) with 85 – 100% of responding teams aware of guidelines
- > 90 % adoption in 118 UK Trusts for older guidelines, approaching 50% for 2012 guidelines so far
- Non adoption usually due to lack of time OR local guidelines already concordant with JBDS – IP guidelines

Overall Impact

- Rated highly in terms of patient safety, overall quality and clinical value with very few adverse comments – lots of unhappiness with Trust processes
- Costs (hypo) and professional resistance (DKA, self management) commoner issue for some
- The peri-op guideline has the lowest uptake because of the large number of professional groups involved

What can you do?

- Audit their use
- Look at inpatient care
- Work together in your regions to get data
- Publish!!!!

**Data Collection Tool for
Audit of Primary Care Referrals to Surgery for Patients with Diabetes across East
Anglia**

Please tick the relevant boxes

NHS Trust..... Hospital number

Gender Female Male Ageyears

1. Referral speciality (please tick) a) General surgery b) Orthopaedic
 c) Gynaecology d) Other (please state)
.....

2. Please state anticipated procedure

3. Is the diagnosis of diabetes mentioned in the referral letter? Yes No

4. Type of diabetes	<input type="checkbox"/> a) Type 1	<input type="checkbox"/> b) Type 2	<input type="checkbox"/> c) Not provided
5. Place of usual diabetes care	<input type="checkbox"/> a) Primary	<input type="checkbox"/> b) Secondary	<input type="checkbox"/> c) Not provided

6. Duration of diabetes	8. BMIkg/m ²	9. BP ___/___ mm Hg
<input type="checkbox"/> months / <input type="checkbox"/> years	<input type="checkbox"/> Not provided	<input type="checkbox"/> Not provided
<input type="checkbox"/> Not provided		
7. Comorbidity		10. HbA1c (within the last 3 months)
a) <input type="checkbox"/> IHD	d) <input type="checkbox"/> Foot disease	a)% or mmol/mol <input type="checkbox"/> Not provided
b) <input type="checkbox"/> ↑BP	e) <input type="checkbox"/> Neuropathy	b) Date of HbA1c
c) <input type="checkbox"/> Renal disease	f) <input type="checkbox"/> Not provided	11. eGFR <input type="checkbox"/> Not provided

Diabetes Treatment. Please tick the drugs that the patient is on Not known

<input type="checkbox"/> a) Acarbose	<input type="checkbox"/> e) Glibenclamide	<input type="checkbox"/> i) Linagliptin	<input type="checkbox"/> m) Nateglinide	<input type="checkbox"/> q) Sitagliptin
<input type="checkbox"/> b) Dapaglifozin	<input type="checkbox"/> f) Gliclazide	<input type="checkbox"/> j) Liraglutide	<input type="checkbox"/> n) Pioglitazone	<input type="checkbox"/> r) Tolbutamide

Please return to: Dr Dhatariya c/o Norfolk & Norwich University Hospital NHS Foundation Trust
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This is an example of an audit form designed for surgeons to assess the quality of the referral letters sent by GP's to the surgeons

Drive, Commitment and Collaboration



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www.norfolkdiabetes.com

