

Regional audit of Glucose Interpretive comments questionnaire
- summary of replies

This is a brief summary of results of a very complicated audit. If you require a more detailed summary please email me Linda.Smith@worsacutc.wmids.nhs.uk.

Question 1 Do you provide a basic reference range for plasma glucose e.g. fasting or random?

Yes	17
No	4

Very wide range of values for fasting and random glucoses were given:

- Lower limit of “normal” fasting glucose range 2.0 – 3.9 mmol/l
- Upper limit of “normal” fasting glucose range 5.5 – 6.0 mmol/l
- Several labs had an “impaired fasting glycaemia” range of 6.1 – 6.9 mmol/l (one lab 5.6 – 6.9 mmol/l)
- Most labs stated that at fasting glucose >6.9 mmol/l was consistent with DM (one lab gave a value of > 7.0 mmol/l)
- A range for random glucoses was given by 8 labs. The values ranged from 2.2 to 11.0 mmol/l

Question 2 Do you put interpretive comments on plasma glucose in addition to or in place of a basic reference range?

Yes	13
No	8

Question 3 If YES do comments appear on all glucose reports?

Yes	4
No	9

Question 4 If NO which type of glucose results do not have a comments?

- 4.1 • Fasting glucose < 6.0
Random glucose < 7.8
All inpatient and A&E glucose
- 4.2 • Glucose >2.9 (Specialist laboratory)
- 4.3 • Depends on who is validating and glucose results seen
 - Random glucose < 11.1
 - Glucose inside ranges quoted
 - glucose < 20
 - known diabetics

- results > 2.0
- fasting glucose \leq 6.0
- random glucose \leq 6.0
- non fasting glucose sample
- inpatient glucose < 11.0

Question 5 Do you have different comments for inpatient glucose?

Yes	3
No	10

Question 6 If YES what comments do you put on inpatient glucoses?

1 lab provided their comment (see below):-

- “WHO/ADA guidelines in a non-pregnant patient who is NOT ACUTELY ILL, DM is indicated by a confirmed fasting plasma glucose >6.9 mmol/l and is unlikely at a plasma glucose <5.6 mmol/l. In acute illness, interpretation of plasma glucose can be difficult. Please contact Clinical Biochemistry if advice is required. NB: Any comments assume that the patient is NOT a known diabetic or on any treatment that might affect the plasma glucose”.

Question 7 Do you differentiate between fasting and random glucose samples?

Yes	12
No	1

Question 8 Do you have any other categories of glucose request? (eg post prandial)

Yes	2
No	11

- 2 hr post prandial
- 2 hr glucose

Question 9 At what level of glucose if any do you consider diabetes to be excluded?

- Most labs stated that DM was unlikely rather than excluded at the level they used.
- “Diabetes unlikely” fasting glucoses <5.0 mmol/l to < 7.0 mmol/l
- “Diabetes unlikely” random glucose level values ranged from <5.5 - \leq 11.0 mmol/l

Question 10 At what level of glucose of any would you recommend a glucose tolerance test?

10 labs fasting glucose 6.0 – 7.0 mmol/l.
- 2 labs require a glucose at this level on 2 occasions

2 labs fasting glucose > 5.5 – 7.0

1 lab random glucose > 7.2 mmol/l

1 lab not currently recommending GTTs because of waiting time

1 lab look at glucose history

Most labs would do a GTT after discussion with the clinician even if the blood glucose was below the range at which a GTT would usually be recommended.

Question 11 Do you comment on random glucose results?

Yes	13
No	1

Question 12 If *YES* are your random glucose comments dependant on the glucose level?

Yes	9
No	3

Question 13 If *YES* please describe:-

- 6 labs commented that a random glucose >11.1 (or 11.0) was consistent with DM. 4 of these suggested repeating to confirm one lab suggested repeating or considering a GTT.
- 2 labs commented that glucose >7.8 and <11.1 suggested IGT.
- 2 labs suggested fasting glucoses when random >5.5 (1 lab) or 6.0 (1 lab)

Question 14 Do you comment of fasting glucose results?

Yes	13
No	0

Question 15 Are your fasting glucose comments dependent on the glucose level?

Yes	10
No	3

Question 16 If *YES* please describe:-

- 4 labs commented on impaired fasting glycaemia in glucose range 6.1 – 6.9 mmol/l
- 6 labs commented that the glucose was indicative of DM (at >6.9 mmol/l, [4 labs] >7.0 mmol/l)[2 labs] 5 of these labs suggest repeating to confirm and one also suggested considering a GTT.
- 1 lab commented that a glucose <5.6 mmol/l excluded DM.
- 1 lab recommended repeat if glucose \geq 7.0 – 8.0 plus HbA1C

Question 17 Do you comment on other categories of glucose result (eg post prandial)?

Yes	1
No	the rest

Question 18 If *YES* please describe:-

The one laboratory commenting on psot prandial glucoses used the following comments:-

“2 HR PP >7.8 <11.1 : RESULT SUGGESTS IMPAIRED GLUCOSE TOLERANCE. PLEASE SEND REPEAT TO CONFIRM OR CONISDER GTT.”

“2 HR PP >11.1 RESULTS SUGGESTS DM (BDA/WHO) CRITERIA. PLEASE SEND A REPEAT TO CONFIRM OR CONSIDER GTT.”

Question 19 Are your interpretive comments for glucose evidence based?

Yes	14
No	1

Question 20 If YES, please give sources.

Of the fourteen laboratories using evidence based comments:

- 12 labs cited WHO/ADA/BDA at various dates.
- 1 lab Diabetes Care 2003; 26 3160-3167.
- 1 lab “A group of clinicians got together and agreed these cut off values years ago”.

Question 21 Do you intend to add interpretive comments to glucose results in the future?

Yes	3
No	6

Question 22 Do you have phoning/critical limits for glucose?

Yes	21
No	0

Question 23 If YES are your limits the same for all patients including known diabetes?

Yes	12
No	9

Question24 Please list your phoning/critical limits.

The critical limits ranged from <2.0 at the lower end to >35.0 at the upper end.

Several laboratories had different phoning ranges for GP/OPD/inpatient requests as well as different ranges for diabetics and non diabetics, fasting or non fasting samples.