

On behalf of:

Clinical Commissioning Group

Toolkit to support CCGs considering rationalising prescribing of Blood Glucose Testing meters, Insulin pen needles and lancets

# Background

***Self-monitoring of blood glucose***

The NICE guideline on type 2 diabetes (which is being updated; publication expected August 2015) gives recommendations on the place of self-monitoring of blood glucose in people with type 2 diabetes. The guideline recommends that it should be used only if it is going to be an integral part of the person’s self-management education, and the continued benefit of self-monitoring should be assessed in a structured way each year. NICE recommends that self-monitoring of blood glucose is appropriate in some people with type 2 diabetes, and should be available:

• to people on insulin treatment

• to people on oral glucose-lowering medications to provide information on hypoglycaemia

• to assess changes in glucose control resulting from medication and lifestyle changes

• to monitor changes during intercurrent illness

• to ensure safety during activities, including driving.

Healthcare professionals should also be aware of DVLA recommendations on the monitoring of blood glucose to best advise people about their own particular requirements.

A Cochrane review (CD005060) found the overall effect of self-monitoring of blood glucose on glycaemic control in people with type 2 diabetes who were not using insulin was small up to 6 months after initiation, and disappeared after 12 months. There was no evidence that self-monitoring of blood glucose affects patient satisfaction, general wellbeing or general health-related quality of life.

**This toolkit is intended to support CCGs in recommending to primary care prescribers which blood glucose testing systems available on the UK market offer comprehensive and accurate blood glucose monitoring whilst being cost effective. Successful implementation depends upon the involvement and support of HCPs across the Health economy (medical/nursing/Pharmacy) and the added value of obtaining patient involvement, perspective and support is considerable.**

## Blood Glucose Meters and Test Strip Options

Blood glucose monitoring requires the use of appropriate equipment. The aim is to limit the use of a wide variation of different blood glucose testing equipment across a locality. Advantages are; consistency, reduced risk of errors due to unfamiliarity with equipment, limited unnecessary prescribing, and cost effectiveness.

* Blood glucose testing should be used as part of a care plan for the management of Diabetes following structured patient education which includes the purpose of testing
* The decision to change meters should be used as an opportunity to review the purpose of testing and the interpretation of results
* If a change in prescribed test strips is required, patients should be encouraged to use their current supply of test strips first as long as the strips have not reached their expiry date and the current meter is in working order
* Regular review of blood glucose monitoring use, needs and expected benefits is recommended.
* Patients should be reminded to use control solutions/calibrate machines in line with manufacturer recommendations

**Criteria for selection**

|  |  |  |  |  |  |
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| **Quality Indicator** | Considerations |  |  |  |  |
| ISO 2013 conformance to standards | This International Standard is intended for blood-glucose monitoring systems used by lay persons. The primary objectives are to establish requirements that result in acceptable performance and to specify procedures for demonstrating conformance to this International Standard. | **There are 5 criteria –**Lab & User accuracy- Clinical accuracy- Haematocrit evaluation-Interferences - Contra-Indications | The standards which govern blood glucose monitoring are now under a transition period which will end in October 2016 by which time all machines must comply. |
| Enzyme system | Where the measuring system uses the enzyme glucose oxidase then although manufacturers claim that stable oxygen levels have little effect, ‘rapid’ changes in blood oxygen have been shown to have a large effect on the accuracy of the results produced. Therefore systems using glucose oxidase should not be used where the patient is on oxygen therapy. |
| Contra-indications | Some contraindications are common to all capillary sample glucose estimations; capillary samples should not be used in cases of:-ShockDehydrationHyperosmolar states (including DKA)Patients with poor peripheral circulation. | None of the systems should be used to diagnose Diabetes and none is suitable for use on neonates. |
| Haematocrit range | Anaemic patients will give falsely high results and haemoconcentrated patients give falsely low results- a useable range will be stated for each system |
| Interferents | Check the range of possible interfering substances which include bilirubin, uric acid, paracetamol, ascorbic acid, cholesterol, triglycerides, maltose, galactose, lactose, xylose  |
| Additional considerations(patient factors) | Set up required?Coding required? | Test strip shelf life once opened | Sample size, under fill detection | Measurement time, back light, display size | Memory capacity |
|   | Weight and size of product | Measurement range, ability to flag control results, pre and post prandial results? | Operating temperature range | Device and strip storage conditions | Alarm reminders? |
|  | Meter free to patient, batteries free to patient, control solution free to patients | PC download available | Ketone warning if glucose high | Patient helpline, educational material supplied | Ability to self-eject strip (hands free once used) |

**Insulin Pen needles**

Using the correct injection technique and right needle length can minimize the risk of injecting intramuscularly, and reduce day-to-day variation in insulin absorption.

No patients should require 12mm, consider rationalising onto **8mm or less (6mm or less for children and adolescents)** and choose product with universal compatibility, established safety and quality track record, and competitive price structure. Recent research assuages concerns regarding shorter needle length, demonstrating that 4 to 5 mm insulin pen needles enter subcutaneous tissue with minimal risk of intramuscular injection and no additional leakage, even in obese patients.

Consider the place of safety needles with auto retract for needle stick injury protection of HCPs administering insulin.

See Current drug tariff:

<http://www.ppa.org.uk/edt/February_2015/min> or RDTC Cost comparison charts: http://rdtc.nhs.uk/sites/default/files/cost\_comparison\_charts\_-\_april\_2015.pdf

**Lancets**

**http://rdtc.nhs.uk/sites/default/files/cost\_comparison\_charts\_-\_april\_2015.pdf**

[**http://www.ppa.org.uk/edt/February\_2015/mindex.htm**](http://www.ppa.org.uk/edt/February_2015/mindex.htm)

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| **Finger Prickers and Compatible Lancets** |  |
|   | **Autolet Lancet** | **Autolet Impression** | **Glucolet Dual S** | **Microlet** | **Monojector** | **Penlet II** | **Prestige Smart System** | **Soft Touch** | **Vitrex Compact** | **UNIVERSAL** |
| **Apollo Twist** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** |  |
| **Glucoject Lancets Plus** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** |  |
| **Glucoject No-dol** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** |  |
| **Unilet ComforTouch** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** |  |
| **Unilet Eco** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** |  |
| **Unilet GP Superlite** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** | **•** |  |
| **BD Microfine +** | **•** | **•** |   | **•** | **•** | **•** | **•** | **•** | **•** |   |
| **Microlet** | **•** | **•** |   | **•** | **•** | **•** | **•** | **•** | **•** |  |
| **Thin Lancets** | **•** | **•** |   | **•** | **•** | **•** | **•** | **•** | **•** |   |
| **Vitrex Soft** | **•** | **•** |   | **•** | **•** | **•** | **•** | **•** | **•** |   |
| **OneTouch Ultrasoft** | **•** | **•** |   | **•** |   | **•** | **•** |   | **•** |   |
| **FreeStyle** |   |   |   | **•** | **•** |   | **•** |   |   |   |
| **Omnican Lance soft**  |   | **•** | **•** | **•** |   |   |   |   |   |   |

NB: Finger pricking devices are NOT prescribable, but all meter manufacturers supply free of charge, with the meter.

**References**

[**http://www.nice.org.uk/guidance/indevelopment/gid-cgwave0612**](http://www.nice.org.uk/guidance/indevelopment/gid-cgwave0612)

Strategies for Insulin Injection Therapy in Diabetes Self-Management - AADE

In April 2011, the American Association of Diabetes Educators (AADE) convened a multidisciplinary expert panel to propose guidelines for insulin injection therapy. The panel examined best practices and explored effective problem solving for patients who have difficulty with insulin injections. Among the topics addressed were insulin absorption, pain, injection sites, safety, barriers to insulin therapy, and teaching techniques for various populations.

[**http://www.diabetes.org.uk/Upload/Position%20statements/Draft%20position%20statement%20on%20sharps%20disposal%20Feb%202015.pdf**](http://www.diabetes.org.uk/Upload/Position%20statements/Draft%20position%20statement%20on%20sharps%20disposal%20Feb%202015.pdf)

Evidence-based clinical guidelines for injection of insulin for adults with diabetes mellitus, 2nd edition Danish Nurses Organisation, 2006

**FIT4Safety** Recommendations forBest Practice in Safety - The EU Directive 2010/32 (1) sets out a new legal framework for the management of sharps and needlestick injuries (NSI). The new regime which must be fully transposed into UK and Irish law by May 2013 has focused attention on the need to provide greater protection to all healthcare workers, downstream workers and others who are at risk of sharps injury.

**FIT** The First UK Injection Technique recommendations 2nd edition Oct 2011

Journal of Diabetes Nursing 16 No 4 2012 – Importance of injection technique in diabetes