

Guideline on the Choice of Glucometers for ADULTS with TYPE 2 DIABETES (Updated April 2019)

This guideline aims to assist healthcare professionals in primary and secondary care with the selection of appropriate blood glucose meters (glucometers) and testing strips for adults with TYPE 2 DIABETES, to enable self-monitoring of their blood glucose levels. It should be used in conjunction with HSCB Self Blood Glucose Monitoring (SBGM) Guideline, September 2017, which can be accessed at the following link:

<http://niformulary.hscni.net/Formulary/Adult/6.0/6.1/6.1.6/Pages/default.aspx>

Background

Self-monitoring of blood glucose can be an essential part of the management of type 2 diabetes. The annual cost of prescribing blood glucose strips in Northern Ireland is over £7.8 million. There are a large number of blood glucose strips on the Northern Ireland Drug Tariff. Historically in Northern Ireland, 75% of prescribing of blood glucose strips was for blood glucose strips that cost approximately £15 for a pack of 50, with only 5% of prescribing being for blood glucose strips that cost <£10 per pack of 50.

Health and Social Care Trusts in Northern Ireland stock glucometers that are on the Regional Blood Glucose Meter List (approved by the NI Regional Pathology Network, Point of Care Testing Speciality Forum, April 2019). This list was consulted when producing this guidance: ALL glucometers on the list, whose corresponding test strips were less than £10 for a pack of 50, were assessed for suitability for adults with type 2 diabetes.

In addition to glucometers on the Trusts' Regional Blood Glucose Meter List, Appendix B lists 5 additional meters which have the facility to test for blood glucose

and blood ketones. These meters use both cost effective glucose and ketone strips. It is not normally necessary for adults with type 2 diabetes to carry out blood ketone testing. It will be up to the clinical judgement of the diabetes healthcare professional to assess if it is necessary for an adult with type 2 diabetes, to carry out blood ketone testing.

Any glucometers added to the Trusts' Regional Blood Glucose Meter List following publication of the HSCB guideline may also be distributed, **providing the test strips are cost effective (<£10 for 50)**. This also includes any glucometers on the regional list, whose corresponding test strips reduce in price to <£10 for 50, following publication of this guideline.

Currently, primary care may stock glucometers which are not listed on the Trusts' Regional Blood Glucose Meter List (providing the meters are ISO15197:2015 compliant). However, to ensure continuity, as some adults' care is delivered in both primary and secondary care, the Trusts' Regional Blood Glucose Meter List was used as a starting point for this HSCB guideline.

ALL meters in the HSCB guideline meet the following requirements:

- ISO 15197:2015 approved and will be provided free of charge from GP surgeries and diabetes clinics
- Free support material supplied and free control solution provided
- Unable to delete meter readings
- Measurement range between 1.1 to 33.3mmol/l or more and measures only in mmol/l
- No calibration or coding is required to set up (NB: some of the dual blood glucose and blood ketone meters will require some simple coding)
- A starter meter pack is available that includes blood glucose strips and lancets.

The HSCB guideline includes 19 glucometers which measure blood glucose only (and 5 additional meters in appendix B, which measure both blood glucose and blood ketones). The tables below highlight the specific features of each meter and lancing device.

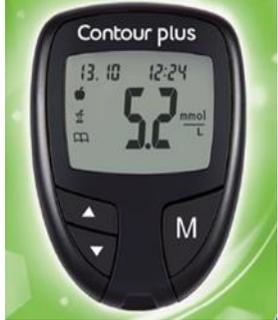
Guidance

- Trusts and GP practices should choose an appropriate quantity and variety of glucometers to stock from the HSCB guideline, for distribution to adults with type 2 diabetes.
- **Trusts and GP practices should dispose of, or not accept, free samples of glucometers from pharmaceutical companies FOR DISTRIBUTION TO ADULTS WITH TYPE 2 DIABETES, which are NOT on the HSCB guideline.**
- Other glucometers may be stocked for other patient groups e.g. for adults with type 1 diabetes, individuals using insulin pumps etc. However, healthcare professionals should always consider the cost of the blood glucose strips, as part of the overall decision making process, when choosing a suitable meter.
- *Whilst it is acknowledged that, when choosing a glucometer, consideration of an individual's preference and their needs is paramount, it is expected that the glucometers listed below will suit the needs of the majority of adults with type 2 diabetes.*
- In **exceptional circumstances**, an adult with type 2 diabetes may require a glucometer not listed in the HSCB guideline. When this is the case, details should be documented in the clinical records, clearly stating the reasons for deviation from the HSCB guideline.
- Community pharmacists should retain the list of glucometers on the HSCB guidance for use by their staff. Community Pharmacists should be aware that GPs may not issue prescriptions for glucose strips and lancets (to adults with type 2 diabetes), for glucometers which are not on the HSCB list. In general, community pharmacists should advise individuals not to change their glucometer, without first consulting their diabetes healthcare team. If an adult with type 2 diabetes presents to a pharmacy at the weekend, or during out of hours (when their diabetes healthcare professional is not available) and urgently requires a new glucometer, the community pharmacist should, where possible supply a glucometer, which is on the HSCB list.
- If an adult with type 2 diabetes has been assessed as requiring to test their blood glucose levels, two glucometers (one spare) should be provided initially. They should be counselled that the second glucometer should only be used,

as a spare. They should NOT use two different glucometers at the same time, so that accurate and meaningful results can be obtained.

- Adults with Type 2 diabetes will be given a patient information leaflet (Appendix A) when they receive a new glucometer. They should be encouraged to take ownership for the management and maintenance of their glucometers from the outset. They should register their glucometer with the relevant pharmaceutical company.
- If adults with type 2 diabetes have any problems or require a new glucometer, they should be advised to contact the relevant pharmaceutical company directly. Many pharmaceutical companies will also provide free batteries.
- **Adults with Type 2 diabetes should be discouraged from changing their glucometers frequently and advised NOT to change their glucometer without first consulting their diabetes healthcare professional. The prescribing of strips and lancets for adults with type 2 diabetes who purchase or obtain a glucometer that is NOT on the HSCB list, is not supported by HSCB, and may require the individual to pay for these themselves. All changes must be recorded in the clinical notes.**
- GP practices who wish to actively switch adults with type 2 diabetes to one of the glucometers on HSCB list can do so by following the HSCB standard operating procedure: SOP for Implementation of HSCB Guideline for the Choice of Blood Glucose Meters and Test Strips for Adults with Type 2 Diabetes, available on the primary care intranet. See link: <http://primarycare.hscni.net/pharmacy-and-medicines-management/resources/diabetes/>
- NOTE: It is not expected that adults with type 2 diabetes in primary care, who are already using a glucometer with test strips costing less than £10 for 50 strips would be changed to an alternative glucometer, unless their current meter is not compliant with ISO15197:2015 standards and / or has been discontinued. The SOP states that only eligible individuals, whose corresponding test strips are >£10 for 50 should be switched to an alternative choice.
- It is good practice for all healthcare professionals to document in the clinical notes details of the glucometer which an individual is currently using.

Table of blood glucose meters with corresponding test strips <£10 (prices correct as per April 2019 NI Drug tariff)

	4Sure Smart Meter (Nipro Diagnostics)	Accucheck Mobile (Roche)	Accucheck Performa Nano (Roche)	Contour Black Edition (Ascensia)	<u>Contour Plus</u> (Ascensia)
					
Free meters provided (contact for ordering meters)	Yes. Louise Wilshire Sales Support T: +44 2380 604 304 E: Louise.Wilshire@nipro-group.com Shona Shaw Territory Sales Manager T: +44 7990 012689 E: Shona.Shaw@nipro-group.com	Yes: Direct from Emma Meneely Phone : 07793306202 Email: emma.meneely@roche.com Or Geraldine Sayee Phone: 07783 156676	Yes: Direct from Emma Meneely Phone : 07793306202 Email: emma.meneely@roche.com Or Geraldine Sayee Phone: 07783 156676	Yes: Direct from Emma Boyd Phone: 07469402761 Email: emma.boyd@ascensia.com	Yes: Direct from Emma Boyd Phone 07469402761 Email : emma.boyd@ascensia.com
Free replacement batteries	Yes	Yes, free coupon sent to patients which can be exchanged at selected Boots stores	Yes, free coupon sent to patients which can be exchanged at selected Boots stores	Yes	Yes
Technical support provided via Freephone number	Yes Customer services UK - 0800 08 588 08 www.nipro-diagnostics.co.uk	Yes: UK: 0800 701 000	Yes: UK: 0800 701 000	Ascensia Support Helpline: 0345 600 6030 (low cost phone number)	Ascensia Support Helpline: 03456006030 (low cost phone number)
Haematocrit range	0-70% Blood Glucose	25-55%	10% to 70%	0% to 70%.	0% - 70%
Expiry date of strips	24 months from date of manufacture (Shelf life is unaffected after first opening vial)	Expiry period of the test cassette after opening the foil-sealed plastic container is 90 days	18 months from opening or expiry date listed on package (whichever comes first)	24 months. The shelf life remains the same even when the pot has been opened	24 months The shelf life remains the same even when the pot has been opened
Name/cost of 50 strips	4SURE test strips £8.99	Mobile test cassette £9.99	Performa £7.50	Contour Strips £9.95	Contour Plus £8.50

	4Sure Smart Meter (Nipro Diagnostics)	Accucheck Mobile	Accucheck Performa Nano	Contour Black Edition	Contour Plus
Sample under-fill detection Y/N	Yes	Yes	Yes	Yes	Yes
Able to apply more blood to the same test strip; if under-fill Y/N	No	No	Not recommended	No	Yes Patient has an extra 30 seconds to apply more blood
Sample size required	0.5 µL (glucose)	0.3µl (min sample size) 5.0µl (max. sample size)	0.6µL	0.6µL	0.6 µL
Measurement time	5 sec (glucose)	Approximately 5 sec (depending on the blood glucose concentration)	5 seconds	5 seconds	5 seconds
Memory capacity	1000 tests	2000 measurements automatically saved with the time, date etc.	500 tests with time and date	480 tests	480 tests
Allow electronic download to personal computers and clinical systems. Y/N	Yes, results can be downloaded via a USB cable or Bluetooth.	Yes	Yes, but requires a cable available from your healthcare professional or from Accu-Chek website https://www.accu- chek.co.uk/	Patients can download the Glucofacts Deluxe software free of charge from the Ascensia website and the connecting cable will be provided free of charge.	Results can be transferred from the meter to a computer where they can be summarized in a report. The software can be downloaded free from www.diabetesascensia.co.uk Data cables are available via Customer Support.
Contraindications	Concentrations of the following substances outside therapeutic ranges may cause interference: Acetaminophen (Paracetamol), Ascorbic acid, Dopamine, Levodopa, Methyldopa, Tolazamide, Uric acid, Xylose and Lipemic Samples (Triglycerides). Pralidoxime Iodide and Reduced Glutathione within the therapeutic or physiologic concentration range may produce elevated glucose results. Do not test blood glucose during or soon after a xyloseabsorption test.	Parenteral administration of galactose and galactosemia can lead to falsely elevated test results. Ceftriaxone in the blood may lead to falsely lowered test results.	Test results affected by drugs that contain or metabolise to maltose: peritoneal dialysis fluids, immunoglobulins, abatacept	Tolazamide concentrations of >0.28mmol/L may produce results with a greater than 10% bias.	Capillary blood glucose testing may not be clinically appropriate for persons with reduced peripheral blood flow. Shock, severe hypotension, hyperosmolar hyperglycaemia & severe dehydration are examples of clinical conditions that may adversely affect the measurement of glucose in peripheral blood.
Partially sighted Y/N	Large display	Data output with audible beeper sequences for visually impaired patients	Yes. Large, automatic backlit display. Easy to read in low-light conditions.	Yes	Yes
Compatible with Diasend (transmitter and uploader)	Yes	Yes (both)	Yes (both)	Yes (both)	Compatibility being finalised. Anticipated compatibility will be available in next software update

	4Sure Smart Meter (Nipro Diagnostics)	Accucheck Mobile	Accucheck Performa Nano	Contour Black Edition	Contour Plus
Lancing device	4SURE Lancing Device	Fastclix	Fastclix	Microlet Next	Microlet Next
Cost of and gauge size of lancets	4SURE Lancets 30G (Fine) £2.90 for 100 4SURE Lancets 33G (Extra Fine) £2.90 for 100	0.3mm/30 gauge 204 £5.90	0.3mm/30 gauge 204 £5.90	0.5mm/28 gauge 100 £3.90 200 £7.44	0.5mm/28 gauge 100 £3.90 200 £7.44
Summary of specific lancing device features	Robust easy to use device that includes lancet eject feature and indicator to show that the device is loaded	<ul style="list-style-type: none"> • 6 lancets in a drum, no single lancets to see or touch • AST capability: yes (with AST cap - available on request) • Penetration range: 0.7 to 2.2mm • Penetration depth setting: 11 setting comfort dial 	<ul style="list-style-type: none"> • 6 lancets in a drum, no single lancets to see or touch • AST capability: yes (with AST cap - available on request) • Penetration range: 0.7 to 2.2mm • Penetration depth setting: 11 setting comfort dial 	<ul style="list-style-type: none"> • Locking endcap prevents accidental lancing • 5 clearly visible depth settings • Easy to use lancet ejector • Uses silicone coated Microlet lancets. • AST capability: Yes (with AST cap) • Compatible with some other generic lancets on the market. 	<ul style="list-style-type: none"> • Locking endcap prevents accidental lancing • 5 clearly visible depth settings • Easy to use lancet ejector • Uses silicone coated Microlet lancets. • AST capability: Yes (with AST cap) • Compatible with some other generic lancets on the market.
Additional considerations on choice of meter	Nipro offer patients using the 4SURE meters free premium access to the Diabetes:M app which offers, electronic log book, comprehensive food diary, carb counting, bolus advisor.	<ul style="list-style-type: none"> • If peripheral circulation is impaired, capillary blood might not be a true reflection of the physiological blood glucose level. This may apply in the following circumstances: Severe dehydration as a result of diabetic ketoacidosis or due to a hyperglycaemic hyperosmolar non-ketotic syndrome, hypotension, shock, decompensated heart failure NYHA class IV or peripheral arterial occlusive disease. 	<ul style="list-style-type: none"> • Compatible with Telehealth • The Performa nano is similar to the AccuChek Aviva[®] but has more cost effective test strips. • Measures blood glucose values between 0.6 to 33.3 mmol/l • Lancets enclosed in drum, no exposed sharps 	<ul style="list-style-type: none"> • Contour[®] test strips are included in each meter starter kit. 	<ul style="list-style-type: none"> • The Contour[®] Plus meets the EN ISO 15197:2015 demonstrated remarkable accuracy in the hands of users even at tighter error limits of $\pm 10\%$ or ± 0.56 mmol/L . • Standard meals can be tagged and reminders set to recheck blood sugar. • Targets can be easily set on the meter. • Second chance sampling saves on strip wastage. The meter comes ready to use out of the box. • Control tests are marked and not included in average reading. • Meter will show 7, 14 and 30 day average readings.

	Glucomen Areo (Medicon Ireland)	GlucorX Nexus (GlucorX)	GlucorX Nexus Mini Ultra (GlucorX)	GlucorX Nexus Voice (GlucorX)	Mylife Unio Neva (Ypsomed Ltd)
					
Free meters provided	Yes: Direct from Jim McGrory Phone: 07771863108 or 028 30835500 Email: jimmcg@mediconire.com	Yes: Direct from Darren Curran Phone: 07392198501 Email: darren@glucorx.co.uk	Yes: Direct from Darren Curran Phone: 07392198501 Email: darren@glucorx.co.uk	Yes: Direct from Darren Curran Tel no: 07392198501 Email: darren@glucorx.co.uk	Halen Campbell +44 7572 702536 halen.campbell@ypsomed.com Or 0344 856 7820 info@ypsomed.co.uk
Free replacement batteries	Yes, 0800 7837286 from a landline 028 30835500 from a mobile phone	Yes	Yes	Yes	Yes
Technical support provided via Freephone number	Yes: NI 0800 7837286	Yes: 01483 755133 0800 0075892	Yes: 01483 755133 0800 0075892	Yes: 01483 755133 0800 0075892	Yes
Haematocrit range	10% to 70%	30 to 60%	30 to 60%	30 to 60%	Yes (20 – 60 % when blood glucose > 11.1 mmol/L)
Expiry date of strips	Normal expiry date of unopened packs is usually 18 months. After opening pack, strips should be discarded after 9 months.	GlucorX Nexus Test Strips expire after the date printed on the box (up to 18 months). They are best preserved providing the pot is closed immediately after opening.	GlucorX Nexus Test Strips expire after the date printed on the box (up to 18 months). They are best preserved providing the user closes the pot immediately after taking out a strip.	GlucorX Nexus Test Strips expire after the date printed on the box (up to 18 months). They are best preserved providing the user closes the pot immediately after taking out a strip.	12 months
50 Strips (<£10) & name of compatible strips	Glucomen Areo £9.95	GlucorX Nexus £9.95 (£8.95 from May 2019)	GlucorX Nexus £9.95 (£8.95 from May 2019)	GlucorX Nexus £9.95 (£8.95 from May 2019)	Mylife unio test strips £9.50

	Glucomen Areo	GlucoRx Nexus	GlucoRx Nexus Mini Ultra	GlucoRx Nexus Voice	Mylife Unio Neva
Sample under-fill detection Y/N	Yes	Yes	Yes	Yes	Yes
Able to apply more blood to the same test strip; if under-fill Y/N	Yes	Yes (until meter begins countdown)	Yes (until meter begins countdown)	Yes (until meter begins countdown)	No
Sample size required	0.5µL	0.5µL	0.5µL	0.5µl	0.7 µL
Measurement time	5 seconds	5 seconds	5 seconds	5 seconds	5 Seconds
Memory capacity	730 tests	1000 tests	1000 tests	450 tests	1000 tests
Allow electronic download to personal computers and clinical systems. Y/N	Yes	Yes. Nexus meter has a PC download link facility and is compatible with Diasend and Diabetes Complete.	Nexus Mini Ultra meter has a PC download link facility and is compatible with Diasend and Diabetes Complete. Data can also be transferred to the GlucoRx Blue App (integrated with Apple HealthKit) via the GlucoRx Dongle.	Nexus Voice meter has a PC download link facility and is compatible with Diasend and Diabetes Complete	Yes
Contraindications	No interference with medication/drugs in normal ranges	Not for use in newborns	Not for use in newborns	Not for use in newborns	N/A
Partially sighted Y/N	Yes. Meter has a 'glow in the dark display' which can also be read in strong sunlight.	Meter has backlit screen	Meter has backlit screen	Yes - meter gives audio feedback	Yes, although the meter itself is small, the display is high contrast with large numbers for BG results.
Compatible with Diasend (transmitter and uploader)	Yes (both)	Yes (both)	Yes (both)	Yes (both)	Not at present

	Glucomen Areo	GlucorX Nexus	GlucorX Nexus Mini Ultra	GlucorX Nexus Voice	Mylife Unio Neva
Lancing device	Glucobject dual plus	GlucorX Lancing device	GlucorX Lancing device	GlucorX Lancing device	Mylife AutoLance lancing device
Cost of and gauge size of lancets	0.20mm/33 gauge 100 £3.77 200 £5.50	0.31mm/30 gauge 200 £5.50(Price reducing to £4.50 from May 2019)	0.31mm/30 gauge 200 £5.50(Price reducing to £4.50 from May 2019)	0.31mm/30 gauge 200 £5.50m(Price reducing to £4.50 from May 2019)	0.3mm/30 Gauge Mylife lancets/Mylife multi-coloured lancets £5.50 per 200
Summary of specific lancing device features	<ul style="list-style-type: none"> • The Glucobject Lancet PLUS 33G is the finest lancet available on prescription • 5 penetration depth settings, adjustable for all skin types. • Safe, fingers-free lancet ejection • AST available with clear tip 	<ul style="list-style-type: none"> • Dual coloured for ease of use • 6 depth settings for all users • Lancets ejection facility to avoid needle stick injury • AST cap available for alternate site testing 	<ul style="list-style-type: none"> • Dual coloured for ease of use • 6 depth settings for all users • Lancets ejection facility to avoid needle stick injury • AST cap available for alternate site testing 	<ul style="list-style-type: none"> • Dual coloured for ease of use • 6 depth settings for all users • Lancets ejection facility to avoid needle stick injury • AST cap available for alternate site testing 	<ul style="list-style-type: none"> • Automatic load and release function in one step • Automatic pressure control to produce steady pricking pressure. • 7 variable puncture depths • Practical bayonet lock and stop function for easy lancet replacement • Simple exchange of lancet through twisting off the cap • Safety button prevents unintentional release.
Additional considerations on choice of meter	<ul style="list-style-type: none"> • Local company, based in Newry (Medicon Ireland). • Large memory capacity which may be useful for group 2 drivers. • Large sized test strips • Wireless NFC connectivity to smart phones. 	<ul style="list-style-type: none"> • Large memory capacity which may be useful for group 2 drivers. • Bluetooth version available connecting to a free app 	<ul style="list-style-type: none"> • May be useful for those who prefer a small compact device. • Large memory capacity which may be useful for group 2 drivers. 	<ul style="list-style-type: none"> • Suitable choice for visually impaired patients as meter gives audio feedback. 	<ul style="list-style-type: none"> • Mylife Unio Neva is designed for patients receiving CSII therapy via the Mylife YpsoPump or for patients on MDI therapy who wish to receive bolus advice via the accompanying Mylife App (Android/IOS). • The Mylife Unio automatically transmits data via Bluetooth to the Mylife App. Optional connection to the Mylife Cloud enables therapy data to be shared seamlessly with Healthcare Professionals.

	One Touch Select Plus (Lifescan)	Suresign Resure (CIGA Healthcare)	Tee 2 (Spirit Healthcare)	TEE2+ (Spirit Healthcare)
				
Free meters provided	Yes: Belfast /South Eastern/western Trust Deborah Stewart Phone: 07920084318 Email: dstewa33@its.inj.com Southern/Northern Trust Aoibhinn Higgins Phone: 07770882238 Email: ahiggins@its.inj.com	Yes: CIGA Healthcare Ltd. Kildowney Road, Ballymena, Tel: 02825 68585 Email: sales@cigahealthcare.com	Yes: Direct from Jim Swift Tel: 07880385464 Email: jims@spirit-healthcare.co.uk Or through Customer Services team on 0800 881 5423 Email: cs@spirit-healthcare.co.uk	Yes: Direct from Jim Swift Tel: 07880385464 Email: jims@spirit-healthcare.co.uk Or through Customer Services team on 0800 881 5423 Email: cs@spirit-healthcare.co.uk
Free replacement batteries	No	Yes	Yes	Yes
Technical support provided via Freephone number	Customer Care Helpline on 0800 121200 for the UK customercare@lifescan.co.uk Multi-lingual Customer Care Service	Tel: 0800 0430318	Yes, Customer support line, freephone 24/7 Tel no. 0800 881 5423	Yes, Customer support line, freephone 24/7 Tel no. 0800 881 5423
Haematocrit range	30 to 55%	20 to 60%	30 to 55%	15% - 65%
Expiry date of strips	18 months from date of manufacture, whether the vial is closed or has been opened, due to strip stability.	6 months from opening or until expiration date on bottle	Up to 2 years expiry from manufacture (opened or unopened)	Up to 2 years expiry from manufacture (opened or unopened)
50 Strips (<£10) and name of compatible strips	One Touch Select Plus £9.99	Suresign Resure £8.49	Tee 2 Strips £7.75	TEE2 Strips are £7.75

	One Touch Select Plus	Suresign Resure	Tee 2	TEE2+
Sample under-fill detection Y/N	Yes	Yes	Yes	Yes
Able to apply more blood to the same test strip; if under-fill Y/N	No	No	No	No
Sample size required	1.0µL	0.6µl	0.5µl	0.5µl
Measurement time	5 seconds	5 seconds	5 seconds	5 seconds
Memory capacity	500 tests	480 tests	500 tests	1,000 test results
Allow electronic download to personal computers and clinical systems. Y/N	Yes	No	Yes, USB cable and software available from customer support line, for download to PC	Yes, results can be downloaded to personal computers Bluetooth enabled, so can download to mobile applications e.g. SmartLog
Contraindications	Interference with results accuracy in patients taking levodopa	No	Patients on oxygen therapy may receive inaccurate results	TEE2+ should not be used for diagnosing diabetes or for testing newborns. However, caution should be exercised in the following circumstances, as inaccurate results are given when patients are:- undergoing Oxygen therapy, are in a hyperosmolar / hypoglycaemic state, severely hypotensive or in shock or are critically ill or are out-with the system's haematocrit range
Partially sighted Y/N	Yes, large Number display and backlit screen	Large display	Medium display but no backlight	It has a large screen 6.8 X 4.3cm and large text sizes 2.9 X 1.1cm make for easier reading for visually impaired.
Compatible with Diasend (transmitter and uploader)	Yes (both)	No	Yes (both)	Yes (both)

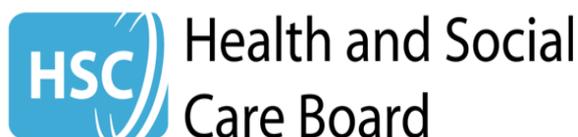
	One Touch Select Plus	Suresign Resure	Tee 2	TEE2+
Lancing device	One Touch Delicia	Apollo Twist	Caresens Lancing Device	CareSens Lancing Device
Cost of and gauge size of lancets	0.32mm/30 gauge 200 £5.85	0.36mm/28 gauge 200 £4.50	0.31mm/30 gauge 100 £2.95 0.36mm/28 gauge 100 £2.95	0.31mm/30 gauge 100 £2.95 0.36mm/28 gauge 100 £2.95
Summary of specific lancing device features	<ul style="list-style-type: none"> • Easy-to-use ergonomic design • 7 depth settings allow for personal comfort • Quiet lancing experience • Designed specifically to avoid risk of needle stick injury – ejection facility • Not suitable for AST testing 	<ul style="list-style-type: none"> • AST cap available for alternate site testing • 5 depth settings • Lancets ejection facility to avoid needle stick injury 	<ul style="list-style-type: none"> • 5 depth settings • Audible click when adjusting depth setting • Options for alternative site testing including a clear adjustable tip 	<ul style="list-style-type: none"> • 7 depth settings • Audible click when adjusting depth setting • Window turns red when cocked. All areas to be touched are colour coded grey and contrast with the other areas of the lancet (white), which aids those with impaired visual acuity • Lancet ejector • Options for alternative site testing.
Additional considerations on choice of meter	<ul style="list-style-type: none"> • Has programmed target BG range. • Has backlight screen • OneTouch Select Plus has ColourSure Technology, which instantly shows patients if their blood glucose result is in or out of range, with an arrow indicating blue (low), green (in range) or red (above range). • Adjustable target ranges to match individual needs. • Meal tagging is also available. 	<ul style="list-style-type: none"> • Local company • Good screen size. • Insertion of test strip (at the top of the meter) is different from most other meters on market. 	<ul style="list-style-type: none"> • Non-automated customer service helpline 	<ul style="list-style-type: none"> • SmartLog (The App) syncs with the TEE2+ meter and graphs patients' glucose • TEE2+ and SmartLog use BlueTooth to share data. BlueTooth unlike Near Field Communication is supported by both IOS (Apple) and Android operating systems. • SmartLog was designed to be used with CareSens Dual and TEE2 meters and is free on both the App store and GooglePlay.

	TRUE Metrix AIR (Trividia Health)	TRUE Metrix GO (Trividia Health)	Vivacheck Ino (JR Biomedical Ltd)	Wavesense Jazz (Agamatrix)	JAZZ wireless (Agamatrix)
					
Free meters provided (contact for ordering meters)	Yes Paul Bowman : Mobile : 07870 733212 Email : pbowman@trividiahealth.co.uk	Yes Paul Bowman : Mobile : 07870 733212 Email : pbowman@trividiahealth.co.uk	Yes: Direct from company. Freephone 0800 612 7531 (no local rep - Wales based company)	Yes, order direct from the company: 01235 838639 Company Representative in Northern Ireland: Irene Jacobs - Diabetes Care Manager Phone: 07342 880 081 Email: ijacobs@agamatrix.com	Yes, order direct from the company: 01235 838639 Company Representative in Northern Ireland: Irene Jacobs - Diabetes Care Manager Phone: 07342 880 081 Email: ijacobs@agamatrix.com
Free replacement batteries	Yes	Yes	Yes, Email: catherine.rees@jrbiomedical.com	Yes, spare batteries can be left with Trusts/GP practices for patients (device comes with 2 spare replacement batteries)	Yes, spare batteries can be left with Trusts/GP practices for patient (device comes with 2 spare replacement batteries)
Technical support provided via Freephone number	Yes Freephone 0800 689 5035	Yes Freephone 0800 689 5035	Freephone 0800 612 7531 and online chat. Nurse led customer care	Yes: 0800 093 1812 or Email: customercare@agamatrix.co.uk	Yes: 0800 093 1812 or Email: customercare@agamatrix.co.uk
Haematocrit range	20 – 70 %	20 – 70 %	20% to 70%	20% to 60%	20% to 60%
Expiry date of strips	18 months shelf life (4 months on opening) The 2x50 count available June 2019 will provide 8 months in total once opened	18 months shelf life (4 months on opening). 2x50 pack available in June 2019 will provide 8 months in total once opened	2 sealed vials, 25 test strips each. The vial is stable until the expiry date printed on the label or 6 months after opening	6 months after opening (12 months duo pack)	6 months after opening (12 months duo pack)
50 Strips (<£10) and name of compatible strips	£6.95 for 1x50 True Metrix Test Strips 2X50 pack size available June 2019 Cost is £12.50 (£6.25/50)	£6.95 for 1x50 True Metrix Test Strips. 2x50 pack size available June 2019. Cost is £12.50 (£6.25/50)	Vivacheck Ino Strips £8.99	WaveSense JAZZ - (50ct) - £8.74 WaveSense JAZZ DUO - (2x25ct) £8.74	WaveSense JAZZ - (50ct) - £8.74 WaveSense JAZZ DUO - (2x25ct) £8.74

	TRUE Metrix AIR	TRUE Metrix GO	Vivacheck Ino	Wavesense Jazz	JAZZ wireless
Sample under-fill detection Y/N	Yes	Yes	Yes	Yes	Yes
Able to apply more blood to the same test strip; if under-fill Y/N	No	No	No	No	No
Sample size required	0.5µl	0.5µl	0.5µl	0.5µl	0.5µl
Measurement time	4 seconds	4 seconds	5 seconds	5 Seconds	5 Seconds
Memory capacity	1000 tests	500 tests	900 tests	1,865 Test Memory: Enough memory to store 5 tests a day for a year	300 tests stored in meter but if the meter has been synced with the App, unlimited results can be reviewed in the App.
Allow electronic download to personal computers and clinical systems. Y/N	Yes	Yes	Mini USB connection to download results	Yes	Yes (but needs to sync with another device before operating - see details below) Compatible with other diabetes management apps, Apple Health and android apps.
Contraindications	Do not use during a xylose absorption test. This may falsely raise glucose results DO NOT use venous whole blood collected in sodium fluoride blood collection tubes for testing, as this may cause inaccurate results.	Do not use during a xylose absorption test. This may falsely raise glucose results DO NOT use venous whole blood collected in sodium fluoride blood collection tubes for testing, as this may cause inaccurate results	Patients on oxygen therapy may receive inaccurate results	Patients on oxygen therapy may receive inaccurate results	Patients on oxygen therapy may receive inaccurate results
Partially sighted Y/N	Yes	No	Large display but no back light	Yes. Large, Backlit Display: Large digits and backlight for easy viewing	Yes, LED Display with higher contrast.
Compatible with Diasend (transmitter and uploader)	Yes both Diasend transmitter and uploader AND Diasend Mobile App	Yes both Diasend transmitter and Uploader	No	Yes(both)	New meter to market, currently awaiting integration by Diasend.

	TRUE Metrix AIR	TRUE Metrix GO	Vivacheck Ino	Wavesense Jazz	JAZZ wireless
Lancing device	Truedraw Lancing device	Truedraw Lancing device	VivaChek Lancing Device	AgaMatrix Lancing Device	AgaMatrix lancing device
Cost of and gauge size of lancets	TRUEplus Lancets 0.32mm/30gauge 100 pack £ 2.90 0.195mm/33gauge 100 pack £2.90	TRUEplus Lancets 0.32mm/30gauge 100 pack £2.90 0.195mm/33gauge 100 pack £2.90	Vivacheck Lancets 0.37mm/28 gauge 100 £2.99	AgaMatrix Ultra-Thin Lancets 0.2mm/33G: 200 pack £5.43 0.35mm/28G: 200 pack £5.43	AgaMatrix Ultra-Thin Lancets 0.2mm/33G: 200 pack £5.43 0.35mm/28G: 200 pack £5.43
Summary of specific lancing device features	<ul style="list-style-type: none"> • Ergonomic, tri-lobular design for comfortable grip • Quick, easy lancet insertion and disposal • Precise penetration for less pain • Clear cap available for Alternative Site Testing (AST) 	<ul style="list-style-type: none"> • Ergonomic, tri-lobular design for comfortable grip • Quick, easy lancet insertion and disposal • Precise penetration for less pain • Clear cap available for Alternative Site Testing (AST) 	<ul style="list-style-type: none"> • 11 adjustable depth settings for gentle test • Clear cap available for Alternative Site Testing (AST) • Ergonomic design for easy to hold 	An Alternative Site Testing (AST) lancing device cap is included with the lancing device 8 depth settings	An Alternative Site Testing (AST) lancing device cap is included with the lancing device 8 depth settings
Additional considerations on choice of meter	<ul style="list-style-type: none"> • No coding required • Active Haematocrit Correction- information on request • Active Temperature compensation – information on request • True Manager App free to download on Android and Apple Phones • Utilizes Bluetooth Smart to transmit data to compatible mobile devices. • Simple meter/mobile device pairing • Ultralow battery consumption 	<ul style="list-style-type: none"> • No coding required • Active Haematocrit Correction- information on request • Active Temperature compensation – information on request • One of smallest meters in the world • Meter twists on to vial of test strips • Separate Go-Pak combines meter, test strips and mini lancing device in to a compact convenient all-in-one unit 	<ul style="list-style-type: none"> • Large memory capacity which may be useful for group 2 drivers. • Auto detect control solution reading • Hypo warning, ketone warning and meal markers • GlucoWell App for IOS and Android phones allows patients to manually record measurements 	<ul style="list-style-type: none"> • Large memory capacity , may be suitable for group 2 drivers • Rubber side grips and feet plus backlit display - suitable to the visually impaired and people with poor dexterity. 	<ul style="list-style-type: none"> • Small and portable, may be suitable for patients who may wish to download results. • All devices that communicate via Bluetooth® wireless technology need to first “pair” with each other so they can establish a connection and get authorized to communicate with each other.

Appendix A



Patient Information Leaflet (New Blood Glucose Meter)

Dear Patient,

Your diabetes team has recently supplied you with two blood glucose meters (glucometers). Your diabetes healthcare professional will have explained how and when to use your meter to test your blood sugars.

The Health and Social Care Board has provided diabetes healthcare professionals and GPs with a list of glucometers which are suitable to use for patients with type 2 diabetes. These meters have all been reviewed: they will provide you with accurate blood glucose results and are cost-effective.

We would encourage you to:

- As soon as possible, please register your new glucometer with the relevant pharmaceutical company. Their phone number is in the instruction booklet provided with your new glucometer. By registering your glucometer, the company will provide a replacement, if required. Some pharmaceutical companies also provide free replacement batteries.
- Only use one glucometer at a time. The second glucometer is a spare, only to be used if your original glucometer breaks.
- If your meter breaks, use your replacement meter and remember to contact the relevant company **as soon as possible** to get a new replacement meter.
- As your GP has been advised to ONLY prescribe test strips and lancets from the recommended list of glucometers, please **DO NOT** purchase or accept a free upgraded glucometer without first checking with your diabetes healthcare professional.
- **Using glucometers that are not on the list may require you to buy your own tests strips and lancets**

If you have any questions about the information in this letter or your glucometer, please contact *{insert name of relevant diabetes healthcare professional}*

Appendix B: Cost effective choice meters which test for both blood glucose and blood ketones

(Prices correct as per April 2019 NI Drug Tariff)

	4Sure Smart Duo meter (Nipro Diagnostics)	Caresens Dual (Spirit Healthcare)	Glucomen Area 2K (Medicon Ireland)	Glucorx HCT meter (Glucorx)	Glucorx HCT Connect (Glucorx)
					
Free meters provided (contact for ordering meters)	Yes. Louise Wilshire Sales Support T: +44 2380 604 304 E: Louise.Wilshire@nipro-group.com Shona Shaw Territory Sales Manager T: +44 7990 012689 E: Shona.Shaw@nipro-group.com	Yes (Jim Swift 07880385464) Email: jims@spirit-healthcare.co.uk	Yes: Direct from Jim McGrory Phone: 07771863108 or 028 30835500 Email: jimmcg@mediconire.com	Yes: Direct from Darren Curran Tel no: 07392198501 Email: darren@glucorx.co.uk Or orders@glucorx.co.uk	Yes: Direct from Darren Curran Tel no: 07392198501 Email: darren@glucorx.co.uk or orders@glucorx.co.uk
Free replacement batteries	Yes	Yes	Freephone Helpline 0800 7837286 from a landline 028 30835500 from a mobile phone	Yes	Yes
Technical support provided via freephone number	Yes Customer services UK - 0800 08 588 08 www.nipro-diagnostics.co.uk	Yes, Customer support line, non-automated freephone 24/7 – 0800 881 5423	Yes: NI 0800 7837286	Yes: 01483 755133 0800 0075892	Yes: 01483 755133 0800 0075892
Haematocrit range	10-70% Blood Glucose 10-70% B-Ketones	15% to 65%	10% -70% for Glucose 20% - 60% for Ketones	0 to 70% Haematocrit (glucose test) 10 to 70% Haematocrit (ketone test)	0 to 70% Haematocrit (glucose test) 10 to 70% Haematocrit (ketone test)

	4Sure Smart Duo meter	Caresens Dual	Glucomen Areo 2K	Glucorx HCT meter	Glucorx HCT Connect
Expiry date of strips	Glucose strips: 24 months from date of manufacture (Shelf life is unaffected after first opening vial) Ketone strips: 18 months from date of manufacture	12 months from opening, if unopened then okay until the printed expiry date	Glucose: Normal expiry date of unopened packs is usually 18 months. After opening pack, strips should be discarded after 9 months. Ketones: Expiry can be up to 18 months (individually wrapped strips).	Glucorx HCT Glucose Test Strips expire after the date printed on the box (up to 18 months). Users should close the pot immediately after removing a strip. Glucorx HCT ketone test strips have 18 months expiry, or until individual foil packet is opened.	Glucorx HCT Glucose Test Strips expire after the date printed on the box (up to 18 months). Users should close the pot immediately after removing a strip. Glucorx HCT ketone test strips have 18 months expiry, or until individual foil packet is opened.
Strips (<£10) and name of compatible strips	4SURE test strips £8.99 for 50 4SURE B-Ketone test strips £9.92 for 10	CareSens PRO Glucose strips £9.95 for 50 KetoSens Blood β -Ketone Test Strips £9.95 for 10	Glucomen Areo sensors £9.95 for 50 Glucomen Areo B-Ketone Sensors £9.95 for 10	Glucorx HCT Glucose £9.95 for 50 (price reducing to £8.95 from May 19) Glucorx HCT Ketone £9.95 for 10	Glucorx HCT Glucose £9.95 for 50 (price reducing to £8.95 from May 19) Glucorx HCT Ketone £9.95 for 10
Sample under-fill detection Y/N	Yes	Yes	Yes	Yes (until meter begins countdown)	Yes (until meter begins countdown)
Able to apply more blood to the same test strip; if under-fill Y/N	No	No	Yes	Yes	Yes
Sample size required	0.5 μ L (Blood Glucose) 0.8 μ L (B-Ketone)	0.4 μ L	0.5 μ L for Glucose 0.8 μ L for Ketones	1.0 μ L for glucose test 1.0 μ L for ketone test	1.0 μ L for glucose test 1.0 μ L for ketone test
Measurement time	5 sec (Blood Glucose) 10 sec (B-Ketone)	5 seconds	5 seconds for Glucose 8 seconds for Ketones	5 seconds for glucose test Up to 10 seconds for ketone test	5 seconds for glucose test Up to 10 seconds for ketone test
Memory capacity	1000 tests	1000 tests	730 position memory on meter all results can be uploaded to app for unlimited memory.	1000 tests	Unlimited readings stored on iPhone

	4Sure Smart Duo meter	Caresens Dual	Glucomen Areo 2K	GlucoRx HCT meter	GlucoRx HCT Connect
Allow electronic download to personal computers and clinical systems. Y/N	Yes, results can be downloaded via a USB cable or Bluetooth.	Yes, CareSens Dual is Bluetooth enabled and works with a free SmartLog app (iOS and Android)	Yes	Yes, this meter has a PC download link facility.	This Smart phone dongle has an Export function to CSV file.
Contraindications	Concentrations of the following substances outside therapeutic ranges may cause interference: Acetaminophen (Paracetamol), Ascorbic acid, Dopamine, Levodopa, Methyl dopa, Tolazamide, Uric acid, Xylose and Lipemic Samples (Triglycerides). Pralidoxime Iodide and Reduced Glutathione within the therapeutic or physiologic concentration range may produce elevated glucose results. Do not test blood glucose during or soon after a xylose absorption test.	Compounds of xylose ≥ 0.54 mmol/L at glucose concentrations of 2.8–5.6 mmol/L may cause overestimation of blood glucose results.	No interference with medication/drugs in normal ranges. Ketone test not to be used on new-borns.	Only ketone testing prohibited in newborns	Only ketone testing prohibited in newborns
Partially sighted Y/N	Large Backlit display	Yes, clear large backlit display	Yes. Meter has a 'glow in the dark display' which can also be read in strong sunlight.	Meter has large, backlit screen	No
Compatible with Diasend (transmitter and uploader)	Yes	Yes (both) Results stored in the SmartLog App can be shared with healthcare professionals by email	Yes (both)	Yes (both)	Pending

	4Sure Smart Duo meter	Caresens Dual	Glucomen Areo 2K	Glucorx HCT meter	Glucorx HCT Connect
Lancing device	4SURE Lancing Device	CareSens Lancing Device	Glucoject dual plus	Glucorx Lancing device	Glucorx Lancing device
Cost of and gauge size of lancets	4SURE Lancets 30G (Fine) £2.90 for 100 4SURE Lancets 33G (Extra Fine) £2.90 for 100	CareSens lancets come in both 0.31mm/30 gauge, 100 quantity, £2.95 and 0.36mm/28 gauge, 100 quantity, £2.95	0.20mm/33 gauge 100 £3.77 200 £5.50	0.31mm/30 gauge 200pcs for £5.50 (Price reducing to £4.50 from May 2019)	0.31mm/30 gauge 200pcs for £5.50 (Price reducing to £4.50 from May 2019)
Summary of specific lancing device features	<ul style="list-style-type: none"> • Robust easy to use device that includes lancet eject feature and indicator to show that the device is loaded 	<ul style="list-style-type: none"> • 7 depth settings • Audible click when adjusting depth setting/ • Options for alternative site testing including a clear, adjustable tip 	<ul style="list-style-type: none"> • The Glucoject Lancet PLUS 33G is the finest lancet available on prescription • 5 penetration depth settings, adjustable for all skin types. • Safe, fingers-free lancet ejection • AST available with clear tip but not for ketone testing 	<ul style="list-style-type: none"> • Dual coloured for ease of use • 6 depth settings for all users • Lancets ejection facility to avoid needle stick injury • AST cap available 	<ul style="list-style-type: none"> • Dual coloured for ease of use • 6 depth settings for all users • Lancets ejection facility to avoid needle stick injury • AST cap available
Additional considerations on choice of meter	<ul style="list-style-type: none"> • Nipro offer patients using the 4SURE meters free premium access to the Diabetes: M app which offers, electronic log book, comprehensive food diary, carb counting, bolus advisor. 	<ul style="list-style-type: none"> • As well as glucose results, patients can track and graph insulin dose, carbs, calories and track them over time in Original meter pack comes with starter pack of blood glucose and ketone strips App. 	<ul style="list-style-type: none"> • Local company based in Newry (Medicon Ireland). • Glucose strips in pot and Ketone strips in foil so easy for patients to differentiate. • Large easy to read backlit display • No coding required • Large memory capacity which may be useful for group 2 drivers. • Large sized test strips suitable for those with dexterity or eyesight issues. • Wireless NFC connectivity to smart phones. 	<ul style="list-style-type: none"> • 0.5 to 38.9mmol/L range for Glucose test • 0.1~8.0 mmol/L range for Ketone test • New stock no longer requires coding when measuring ketones. 	<ul style="list-style-type: none"> • 0.5 to 38.9 mmol/L range for Glucose test • 0.1~8.0 mmol/L range for Ketone test • New stock no longer requires coding when measuring ketones.