Cambridgeshire & Peterborough
Integrated Care System

Diabetes LES Meeting 2

13th September 2023
1.00pm – 3.00pm

Dr Jessica Randall-Carrick – ICS Clinical Lead, Diabetes & Obesity; & Co-Clinical Lead CVD Prevention

Housekeeping

To make the most of our time, we'll be using our 4 house rules:

1. **We will be using chat to hear from you today**. We are really keen to hear your views & queries.
2. **We're asking everyone to stay on mute**. If we have a chance for verbal contributions, please let us know via chat & we will let you know when it's time to unmute.
3. **We still want your views after the meeting!** If you have further comments to make, please contact cpicb.communityltc@nhs.net
4. **Whenever possible, please do have your video on** – although virtual sessions are often convenient, we miss out on making connections with you & would be great to 'meet you' here!
5. **Please let us know who you are via chat -** eg Full name, Practice or PCN that you are representing, & role.

Agenda Diabetes LES meeting 2
13th September 2023 1.00pm – 3.00pm

No	Item	Time	Lead
1.	Welcome and introductions	1.00pm – 1.05pm	Dr Jessica Randall-Carrick
2.	Performance update	1.05pm – 1.20pm	Dr Jessica Randall-Carrick
3.	QOF requirements and suggestions for achievement	1.35pm – 1.50pm	Dr Jessica Randall-Carrick
4.	The importance of B12:To test or not to test?	1.50pm – 2.20pm	Mr Julian Owen
6.	Vascular Disease in the patients with Diabetes	2.20pm – 2.50pm	Mr Andrew Busuttil, Mr Gail Curran
7.	Close • Date of CVD meeting: 1st November 2023	2.50pm – 3.00pm	Dr Jessica Randall-Carrick

As a Community Colleague – you are a 'Service User'

https://www.menti.com/ali3obeyyqd9

- what works well?
- what doesn't work well?
- what ideas have you got for improvements?

Cambridgeshire & Peterborough
Integrated Care System

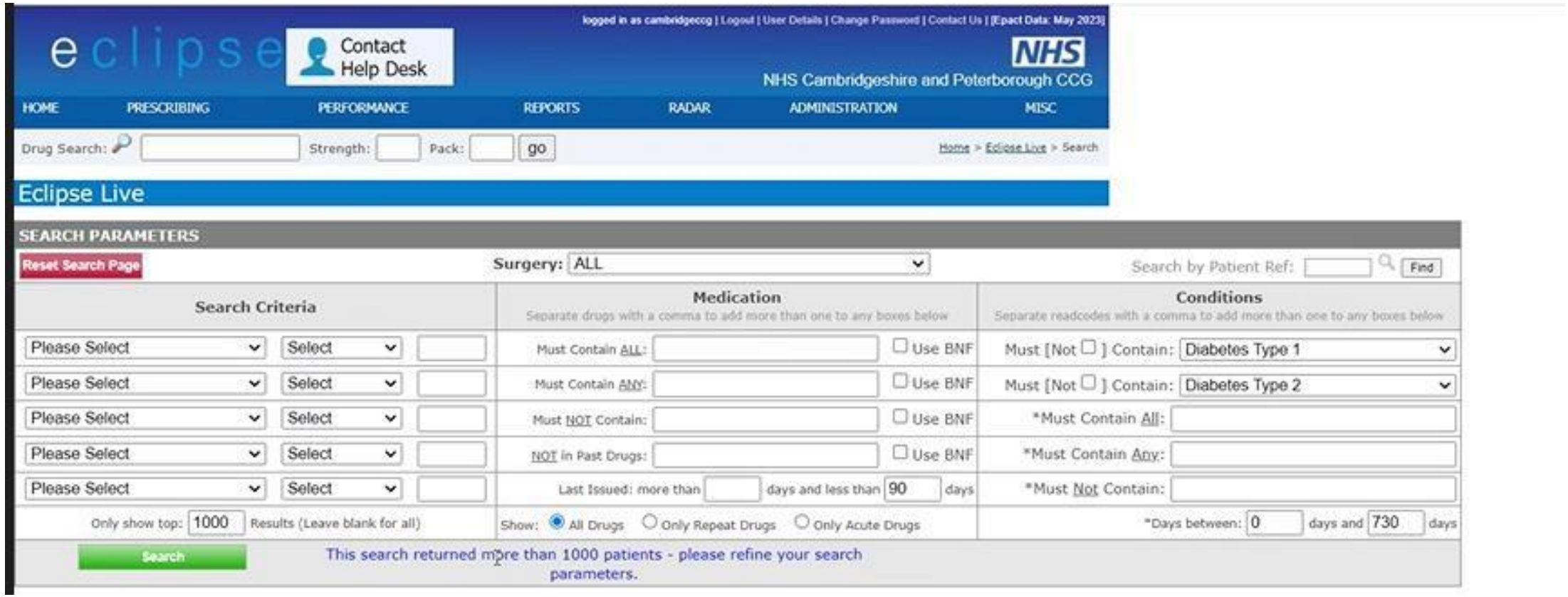
Eclipse

- *Data*


Home
Overview
My Patients
NHS Performance
Medications
Action Plan
Alerts: 22 red 173 amber
All Practices
All Diabetes
53,870 (5.3%) with Diabetes
46% with all 8 care processes completed in rolling 12M
Rank 32/74
18% with all 8 care processes completed in current QOF Year
Rank 36/74
28% in range for all 3 treatment standards
Rank 34/74
203,784 / 430,960 (47.3%) Total Tests Completed in current QOF Year
Rank 26/74

QoF Register - Requests

Indicator	Points	Thresholds
Records		
DM017. The contractor establishes and maintains a register of all patients aged 17 or over with diabetes mellitus, which specifies the type of diabetes where a diagnosis has been confirmed	6	N/A



Dual Diagnoses >1000 patients – please check your coding processes

Endocrine		
09 Dec 22	C108.	Insulin dependent diabetes mellitus
28 Oct 15	C10..	Diabetes mellitus
21 Dec 06	C10F.	Type 2 diabetes mellitus
26 Nov 03	C324.	Hyperlipidaemia NOS
01 Nov 91	C320.	Pure hypercholesterolaemia

Dual Diagnoses – Common Errors

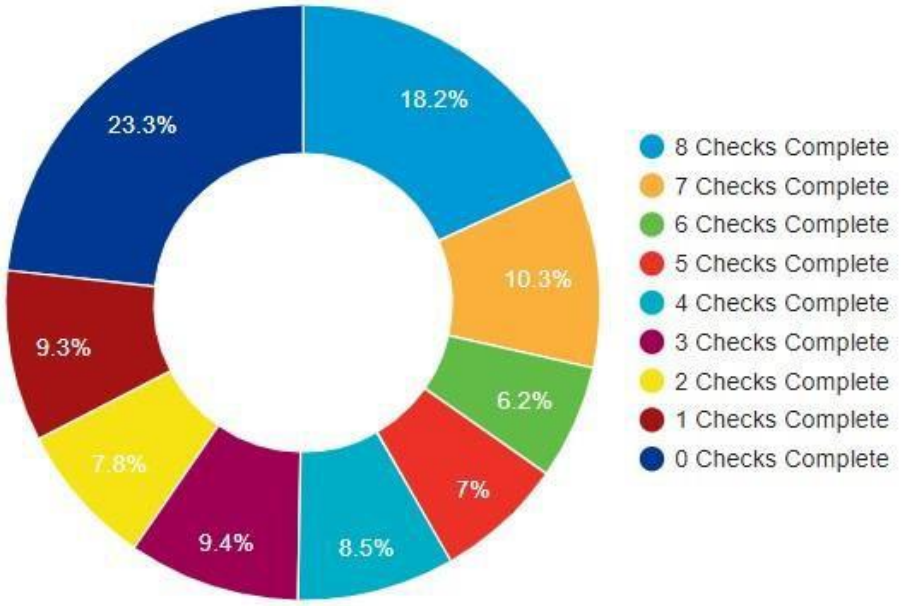
Insulin dependent should NOT be coded for those with Type 2 Diabetes

Endocrine		
10 Nov 21	C108.	Insulin dependent diabetes mellitus
10 Nov 21	C10E.	Type 1 diabetes mellitus
06 Dec 17	C101.	Diabetes mellitus with ketoacidosis
26 Feb 16	C10F.	Type 2 diabetes mellitus
15 Feb 16	C10..	Diabetes mellitus

8 Care Processes Undertaken as of September - 23

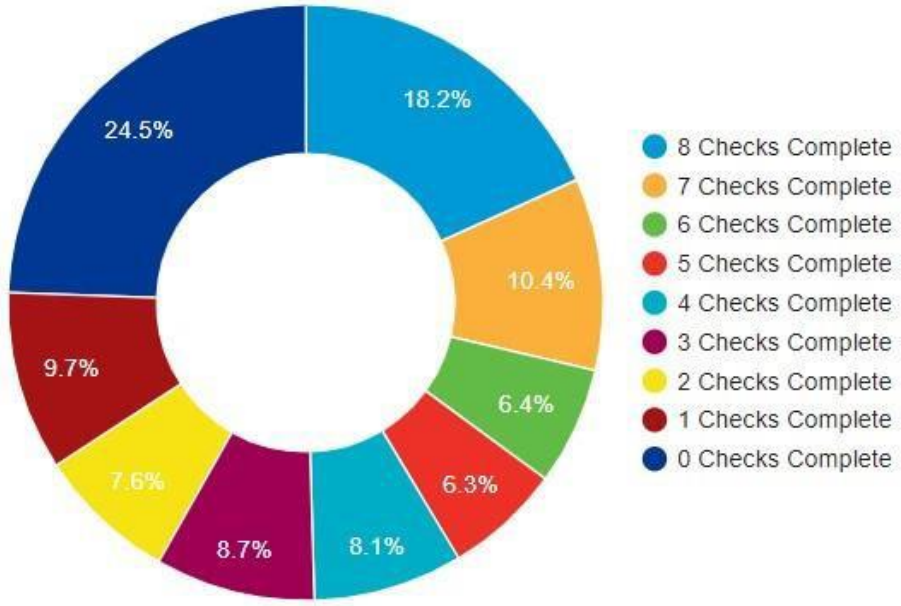
CCG

8 Care Processes (2023/24)



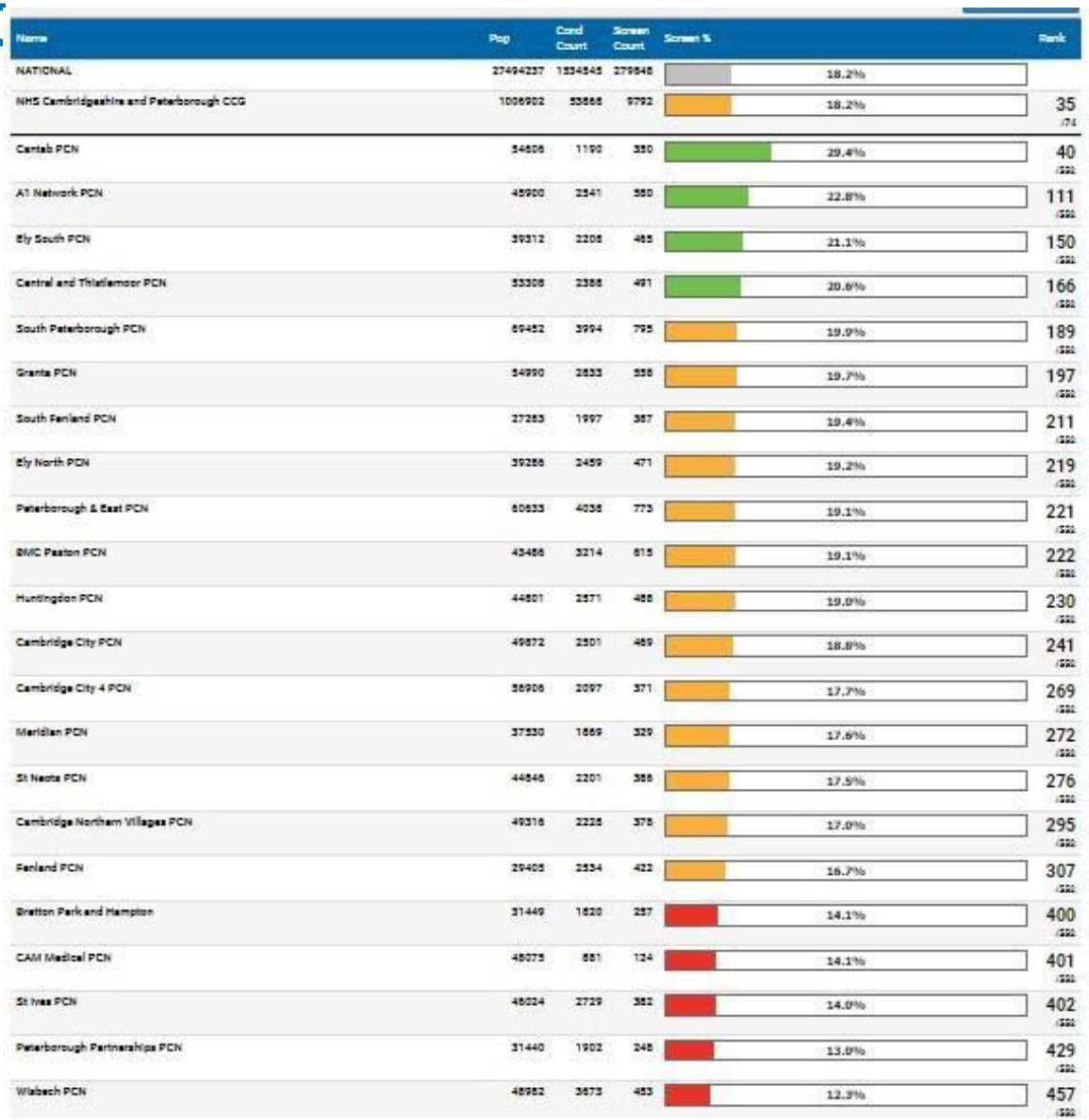
National

8 Care Processes (2023/24)



Average PCN 8CP Achievement as of September-23

Congratulations to:
Cantab PCN 29.4 %
A1 Network PCN 22.8%
Ely South PCN 21.1%
Central & Thistlemoor PCN 20.6%



Name	Pop	Cond Count	Screen Count	Screen %	Rank
NATIONAL	27494237	1334545	279646	18.2%	
NHS Cambridgeshire and Peterborough CCG	1006902	53666	9792	18.2%	35 /74
Cantab PCN	54606	1190	350	29.4%	40
A1 Network PCN	45900	2541	580	22.8%	111
Ely South PCN	39312	2206	465	21.1%	150
Central and Thistlemoor PCN	53306	2388	491	20.6%	166
South Peterborough PCN	69452	3994	795	19.9%	189
Granta PCN	54990	2833	556	19.7%	197
South Fenland PCN	27283	1997	387	19.4%	211
Ely North PCN	39256	2459	471	19.2%	219
Peterborough & East PCN	60633	4036	773	19.1%	221
BMC Paston PCN	45466	3214	615	19.1%	222
Huntingdon PCN	44601	2571	486	19.0%	230
Cambridge City PCN	49872	2501	469	18.8%	241
Cambridge City 4 PCN	36906	2097	371	17.7%	269
Meridian PCN	37530	1869	329	17.6%	272
St Neots PCN	44846	2201	386	17.5%	276
Cambridge Northern Villages PCN	49316	2226	376	17.0%	295
Fenland PCN	29405	2534	422	16.7%	307
Bretton Park and Hampton	31449	1820	257	14.1%	400
CAM Medical PCN	48075	881	124	14.1%	401
St Ives PCN	46024	2729	382	14.0%	402
Peterborough Partnerships PCN	31440	1902	248	13.0%	429
Wisbech PCN	48982	3673	453	12.3%	457

National Average – 18.2 %
ICB Average – 18.2 %

Practice 8CP Achievement as of September - 23

Congratulations to:
Red House Surgery 41.6%
Papworth Surgery 34.9%
Kimbolton Medical Centre 31.2%
Bourn Surgery 31.1%
Great Staughton Surgery 29.8%

National Average – 18.2 %
ICB Average – 18.2 %

RED HOUSE SURGERY	22264	505	210	41.6%	1 /88
PAPWORTH SURGERY	7104	384	134	34.9%	2 /88
KIMBOLTON MEDICAL CENTRE	6921	359	112	31.2%	3 /88
BOURN SURGERY	6343	322	100	31.1%	4 /88
GREAT STAUGHTON SURGERY	4533	289	86	29.8%	5 /88
FENLAND GROUP PRACTICE	10630	871	254	29.2%	6 /88
BUCKDEN SURGERY	10080	588	162	27.6%	7 /88
THISTLEMOOR MEDICAL CENTRE	27728	1167	314	26.9%	8 /88
WANSFORD	9908	490	130	26.5%	9 /88
RAMSEY HEALTH CENTRE	7035	616	163	26.5%	10 /88
CATHEDRAL MEDICAL CENTRE	11159	513	135	26.3%	11 /88
WELLSIDE SURGERY	7910	519	136	26.2%	12 /88
BOTTISHAM MEDICAL PRACTICE	5621	340	88	25.9%	13 /88
OVER SURGERY	4545	241	62	25.7%	14 /88
HADDENHAM SURGERY	7181	470	109	23.2%	15 /88
MONKFIELD MEDICAL PRACTICE	12306	384	89	23.2%	16 /88
MILL ROAD SURGERY	7819	275	63	22.9%	17 /88
FIRS HOUSE SURGERY	12615	609	134	22.0%	18 /88
HUNTINGDON ROAD SURGERY	21337	550	120	21.8%	19 /88
THOMAS WALKER WESTGATE HEALTHCARE	25292	1573	339	21.6%	20 /88

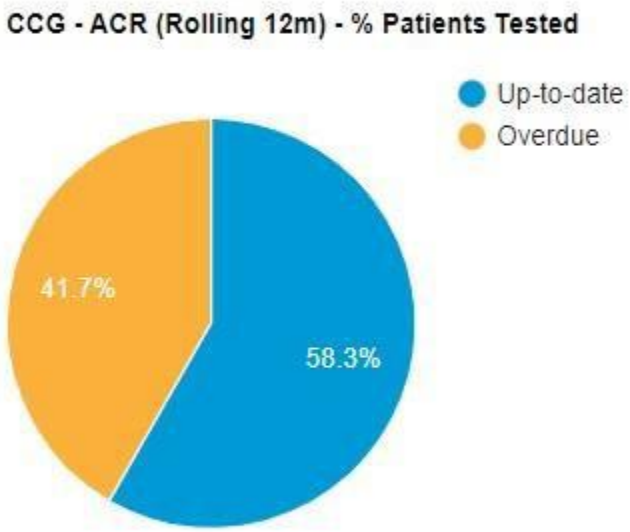
8CP: Foot Examination

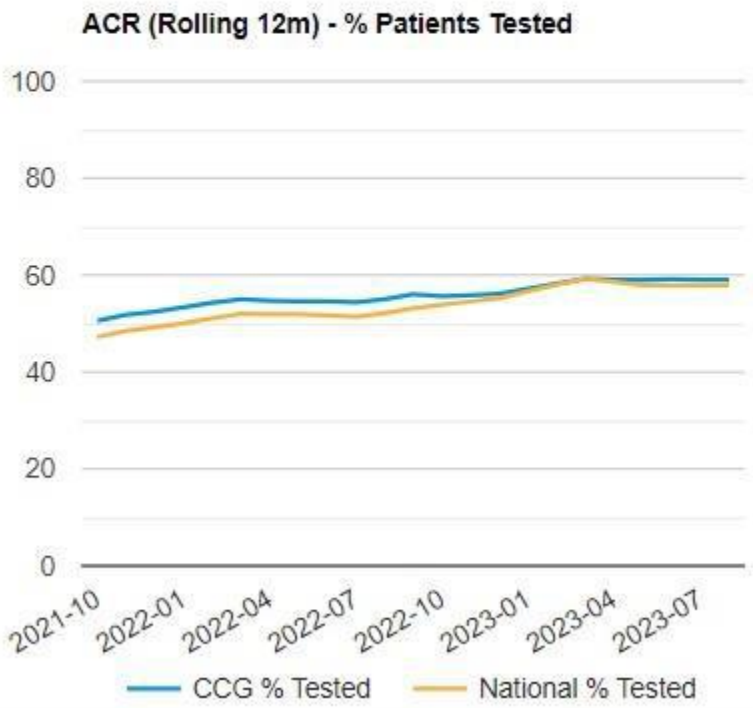
Indicator	Points	Thresholds
DM012. The percentage of patients with diabetes, on the register, with a record of a foot examination and risk classification: 1) low risk (normal sensation, palpable pulses), 2) increased risk (neuropathy or absent pulses), 3) high risk (neuropathy or absent pulses plus deformity or skin changes in previous ulcer) or 4) ulcerated foot within the preceding 12 months	4	50–90%

8CP: Urine ACR

ACR

Patient Screening

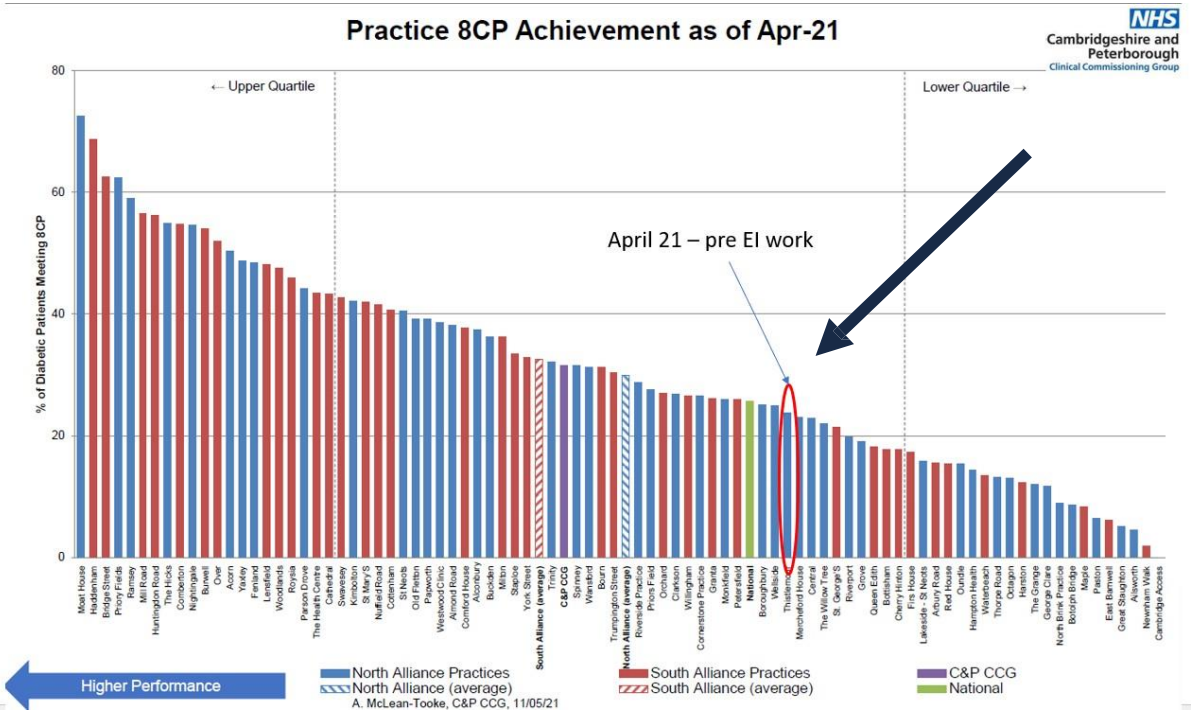




Urine ACR Achievement as of September-23

Name	Pop	Cond Count	In Range Count	In Range %	Rank
NATIONAL	27504494	1535478	735750	47.9%	
NHS Cambridgeshire and Peterborough CCG	1006879	53870	26115	48.5%	37 /74
St Ives PCN	46031	2729	1988	72.8%	3 /552
Ely South PCN	39309	2207	1591	72.1%	5 /552
Cantab PCN	54626	1193	857	71.8%	6 /552
A1 Network PCN	45895	2543	1806	71.0%	10 /552
Ely North PCN	39283	2458	1738	70.7%	14 /552
St Neots PCN	44846	2201	1541	70.0%	21 /552
Cambridge City 4 PCN	56911	2098	1457	69.4%	29 /552
South Fenland PCN	27283	1997	1370	68.6%	36 /552
CAM Medical PCN	48075	881	603	68.4%	38 /552
Huntingdon PCN	44800	2571	1758	68.4%	40 /552
Cambridge Northern Villages PCN	49285	2229	1518	68.1%	45 /552
Granta PCN	54988	2833	1908	67.3%	53 /552
Meridian PCN	37530	1867	1256	67.3%	57 /552
Cambridge City PCN	49867	2501	1636	65.4%	85 /552
Central and Thistlemoor PCN	53308	2388	764	32.0%	447 /552
Fenland PCN	29404	2534	749	29.6%	459 /552
South Peterborough PCN	69455	3994	913	22.9%	518 /552
Peterborough & East PCN	60633	4038	793	19.6%	542 /552
Wisbech PCN	48977	3672	697	19.0%	544 /552
Peterborough Partnerships PCN	31440	1902	343	18.0%	546 /552
Bretton Park and Hampton	31448	1820	307	16.9%	549 /552
BMC Paston PCN	43485	3214	522	16.2%	550 /552

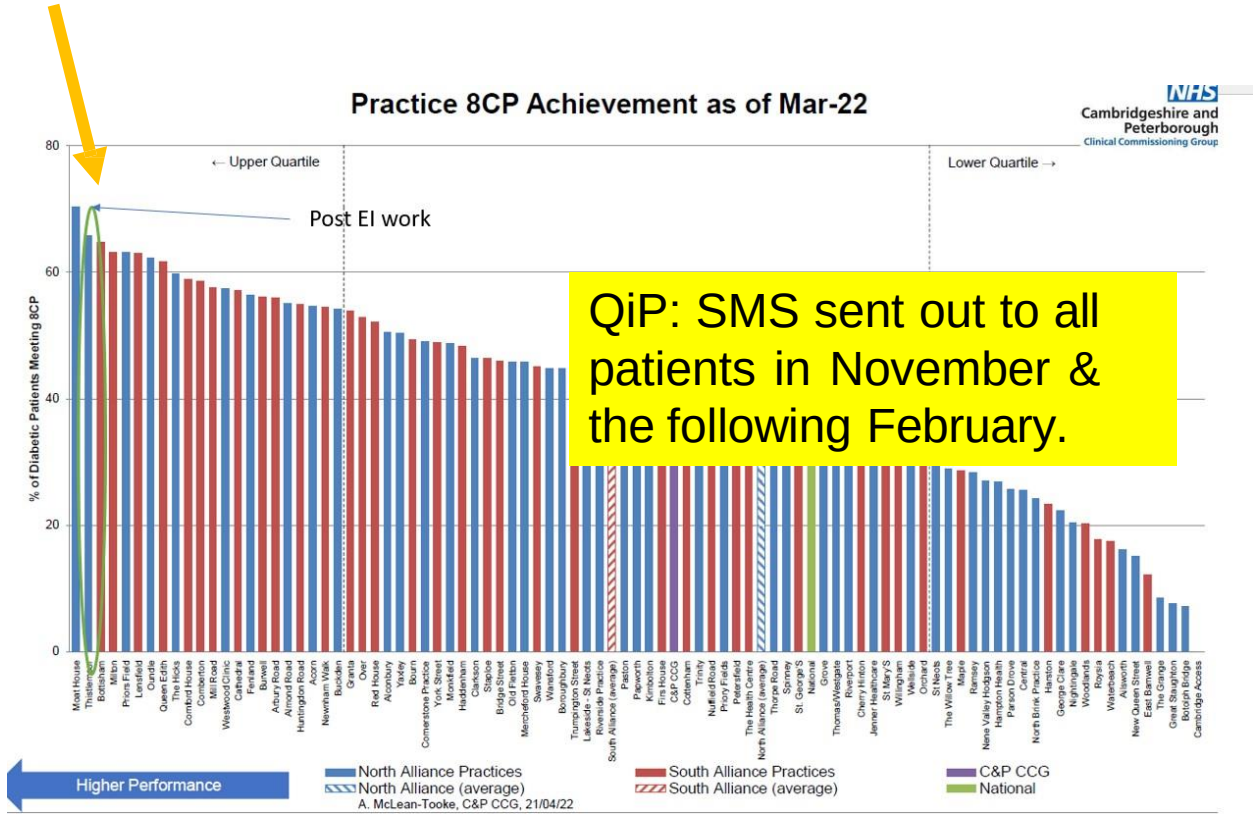
Successful QIP 8 Care Processes using Eclipse at Practice Level



950 Patients with Diabetes at a Deep End Practice.

March/April 2021: 25% delivery of 8 care processes.

60th/84 practices in the CCG.



Using Eclipse & Practice HCAs:

March 2022: 65% delivery of 8 care processes.

2nd in the CCG.

Healthy IO Update as of 21st August 2023

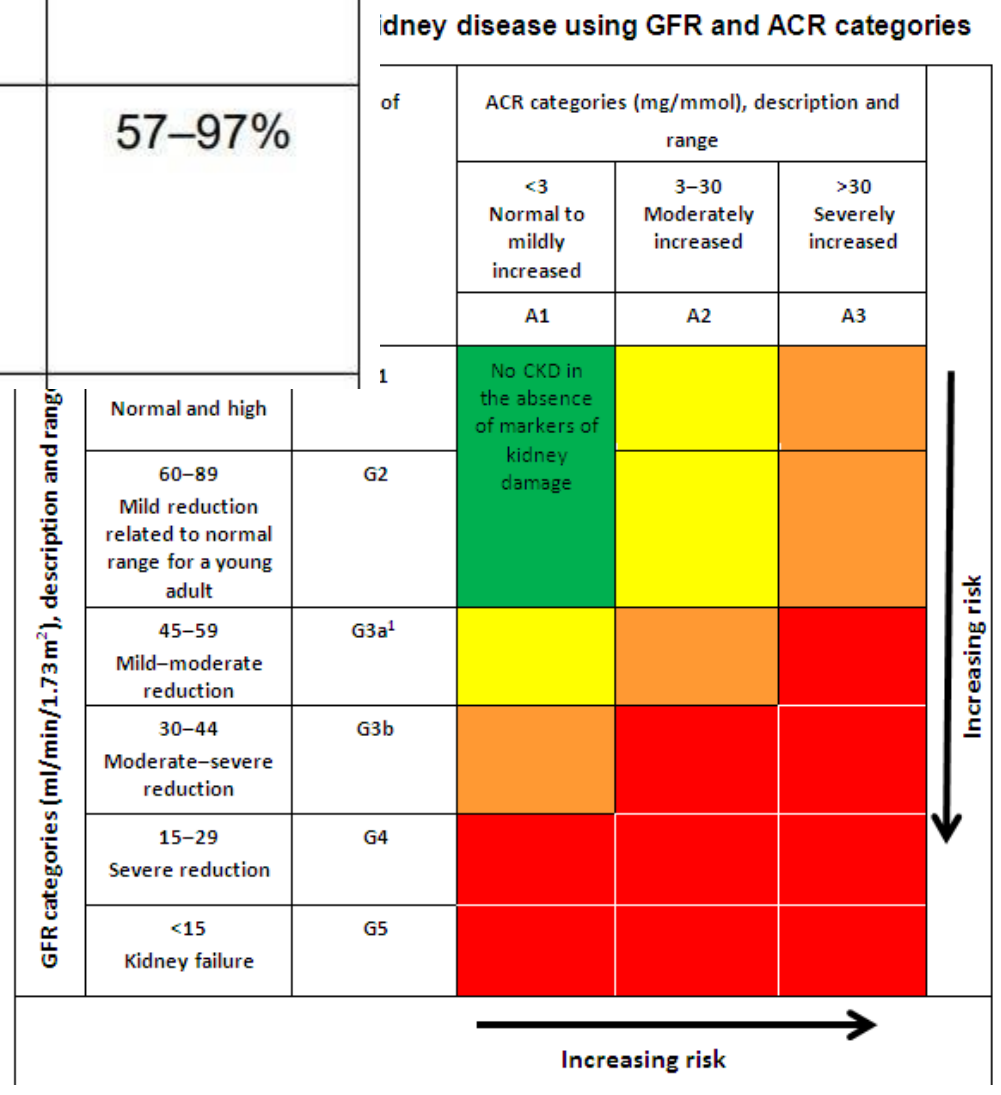
- Rolled out in 2 PCN's – CAM Medical & St Ives
- 255 patients have been sent kits
- 64 patients have used the kits

Holistic Care: Treatment of Nephropathy

Indicator	Points	Thresholds
Ongoing management		
DM006. The percentage of patients with diabetes, on the register, with a diagnosis of nephropathy (clinical proteinuria) or micro-albuminuria who are currently treated with an ACE-I (or ARBs)	3	57–97%

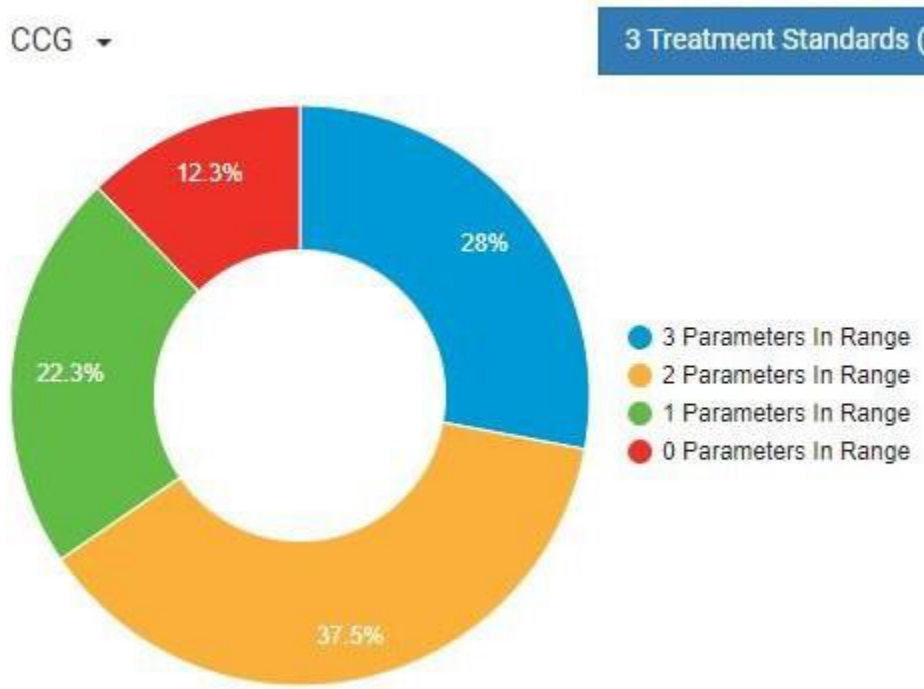
Treatment of CKD includes:

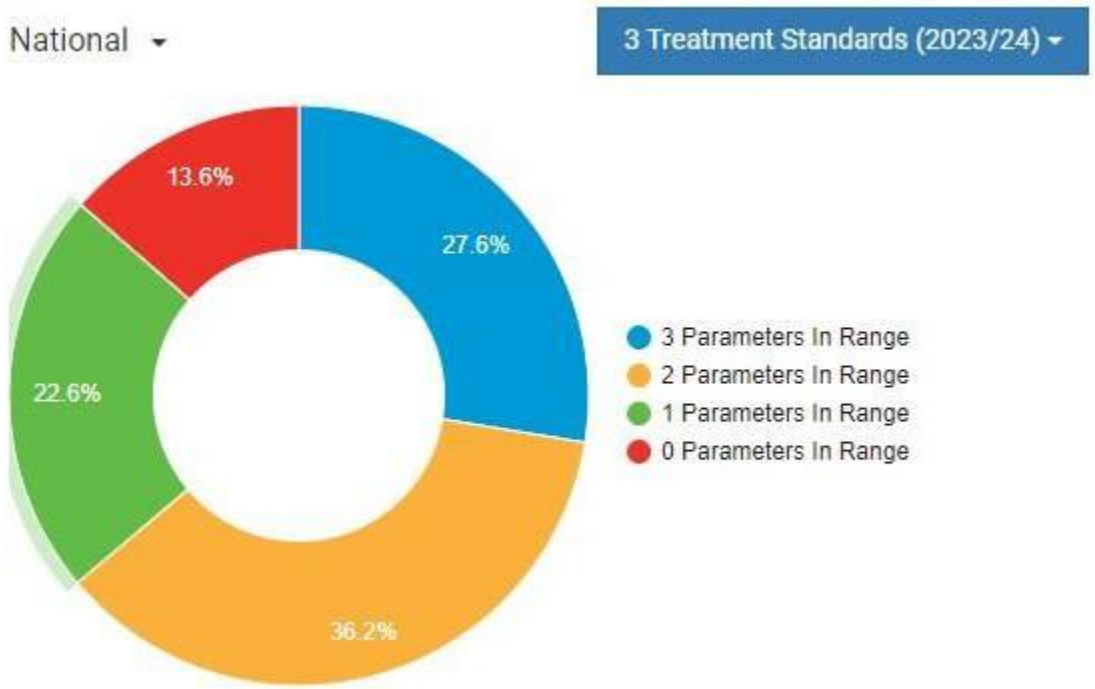
- **CODING**
- **ACE-I or ARBs**
- **Statin** - Atorvastatin 20mg ON
- **Antiplatelet** (consider)



Quick Action Plans	Total Patients	Total Patients needing tests	% Patients needing test	
Phase 1: Patients for review to maximise 8 key processes and 3 treatment targets where 1 test is required and previous test was normal	53868	2769	5.14%	View
Phase 2: Patients for review to maximise 8 key processes and 3 treatment targets where 2 tests are required and previous tests were normal	53868	2696	5%	View
Phase 3: Patients for review to maximise 8 key processes and 3 treatment targets where 3 tests are required and previous tests were normal	53868	5024	9.33%	View
Phase 4: Patients for review to maximise 8 key processes and 3 treatment targets where 3 tests are required and 2 previous tests were normal	53868	6114	11.35%	View
Phase 5: Patients for review to maximise 8 key processes and 3 treatment targets where 3 tests are required and 1 previous test was normal	53868	3403	6.32%	View
Patients with HbA1c >= 59	53868	21845	40.55%	View
Patients with BP >= 140/80	53868	19578	36.34%	View
Patients with Cholesterol >= 5	53868	12255	22.75%	View
Patients with only smoking status required as 8th key care process	53868	521	0.97%	View
Patients with only weight required as 8th key care process	53868	318	0.59%	View
Patients with only ACR required as 8th key care process	53868	3401	6.31%	View
Patients with only blood pressure required as 8th key care process	53868	131	0.24%	View

3TT's as of September - 2023





Average PCN 3TT Achievement as of September-23

Congratulations to:
Ely North PCN 39.1%
Wisbech PCN 30.0 %
St Neots PCN 29.3%
A1 Network PCN 29.3%

National Average – 27.5 %
ICB Average – 27.9% %

Name	Pop	Cond Count	Screen Count	Screen %	Rank
NATIONAL	27504494	1535478	422619	27.5%	
NHS Cambridgeshire and Peterborough CCG	1006879	53870	15013	27.9%	34 /74
Ely North PCN	39283	2458	961	39.1%	4 /552
Wisbech PCN	48977	3672	1102	30.0%	148 /552
St Neots PCN	44846	2201	644	29.3%	171 /552
A1 Network PCN	45895	2543	744	29.3%	172 /552
Cantab PCN	54626	1193	345	28.9%	187 /552
Ely South PCN	39309	2207	635	28.8%	201 /552
Huntingdon PCN	44800	2571	737	28.7%	207 /552
Fenland PCN	29404	2534	720	28.4%	223 /552
Peterborough Partnerships PCN	31440	1902	540	28.4%	225 /552
St Ives PCN	46031	2729	762	27.9%	244 /552
South Peterborough PCN	69455	3994	1112	27.8%	249 /552
Cambridge City PCN	49867	2501	688	27.5%	266 /552
Granta PCN	54988	2833	779	27.5%	269 /552
South Fenland PCN	27283	1997	544	27.2%	287 /552
Meridian PCN	37530	1867	508	27.2%	291 /552
Cambridge Northern Villages PCN	49285	2229	605	27.1%	295 /552
Cambridge City 4 PCN	56911	2098	556	26.5%	332 /552
BMC Paston PCN	43485	3214	846	26.3%	336 /552
Central and Thistlemoor PCN	53308	2388	600	25.1%	407 /552
CAM Medical PCN	48075	881	217	24.6%	432 /552
Peterborough & East PCN	60633	4038	988	24.5%	437 /552
Bretton Park and Hampton	31448	1820	380	20.9%	529 /552

Practice 3TT Achievement as of September - 23

Congratulations to:
St. Georges Medical Centre 44.4%
Ailsworth Medical Centre 39.6%
St Mary's Surgery 38.1%
Trinity Surgery 38.1%
Moat House Surgery 36.5%

ST. GEORGE'S MEDICAL CENTRE	11805	849	377	44.4%	1 /88
AILSWORTH MEDICAL CENTRE	3826	192	76	39.6%	2 /88
ST MARY'S SURGERY	16320	1097	418	38.1%	3 /88
TRINITY SURGERY	12252	767	292	38.1%	4 /88
MOAT HOUSE SURGERY	7293	543	198	36.5%	5 /88
OUNDLE	10032	513	184	35.9%	6 /88
BOURN SURGERY	6343	322	114	35.4%	7 /88
MERCHEFORD HOUSE	5926	539	190	35.3%	8 /88
MILTON SURGERY	4644	217	76	35.0%	9 /88
CLARKSON SURGERY	9777	912	319	35.0%	10 /88
ALCONBURY SURGERY	13600	671	233	34.7%	11 /88
SWAVESEY SURGERY	3324	148	50	33.8%	12 /88
NIGHTINGALE MEDICAL CENTRE	6405	440	145	33.0%	13 /88
ACORN SURGERY	10595	536	175	32.6%	14 /88
CATHEDRAL MEDICAL CENTRE	11158	512	166	32.4%	15 /88

National Average – 27.5 %
ICB Average – 27.9% %

3TTs - Cholesterol, QRISK & Statins

Indicator	Points	Thresholds
DM023. The percentage of patients with diabetes and a history of cardiovascular disease (excluding haemorrhagic stroke) who are currently treated with a statin	2	50-90%

CVDP009CHOL: Percentage of patients aged 18 and over with GP recorded CVD (narrow definition), who are currently treated with lipid lowering therapy.

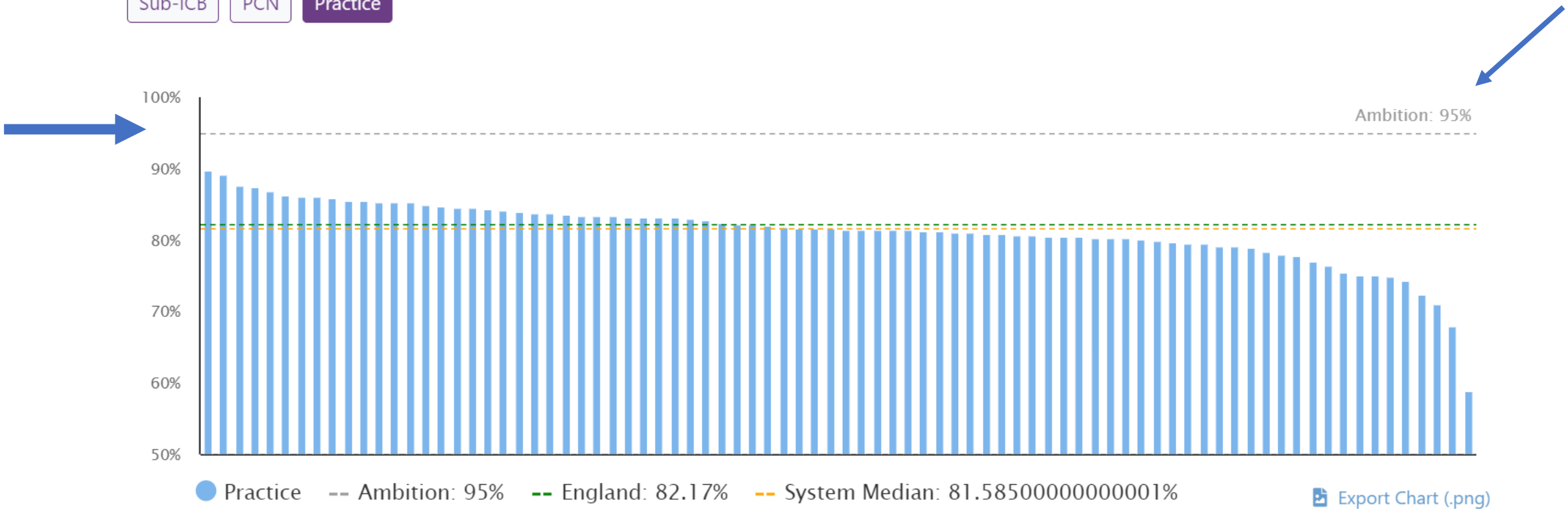
Area Breakdown: All Practices within NHS Cambridgeshire and Peterborough Integrated Care Board

March 2023

Chart | Table

Filter

Sub-ICB | PCN | Practice



3TTs - Cholesterol, QRISK & Statins

Indicator	Points	Thresholds
DM022. The percentage of patients with diabetes aged 40 years and over, with no history of cardiovascular disease and without moderate or severe frailty, who are currently treated with a statin (excluding patients with type 2 diabetes and a CVD risk score of <10% recorded in the preceding 3 years)	4	50-90%

ECLIPSE: DETECT

Cambridge and Peterborough Statin Optimisation Programme

Primary Objective

To target statin therapy for secondary & primary prevention in patient cohorts from deprived communities using Eclipse Population Health Tool.

Inclusion criteria

Secondary prevention dose:

- Those coded with ischaemic heart disease, stroke/TIA, peripheral arterial/vascular disease (age 25-84)

Primary prevention dose:

- Patients with T1DM (age >=40)
- Patients with CKD (age 25-84)
- Patients with QRISK3 >10%, including T2DM (age 25-84)

Bloods

- LFTs must be done in last 12 months and <3x upper limit
- ALT <165
- AST <144
- IF TFTs done in last 12 months, T4 level must be >5

Exclusion criteria:

- Currently on a statin
- Coded with:
  - statin contraindicated
  - adverse reaction/allergy to statin
  - statin declined in last 12 months
- Coded with chronic liver diseases and/or elevated liver enzyme profile
- Current pregnancy or breastfeeding

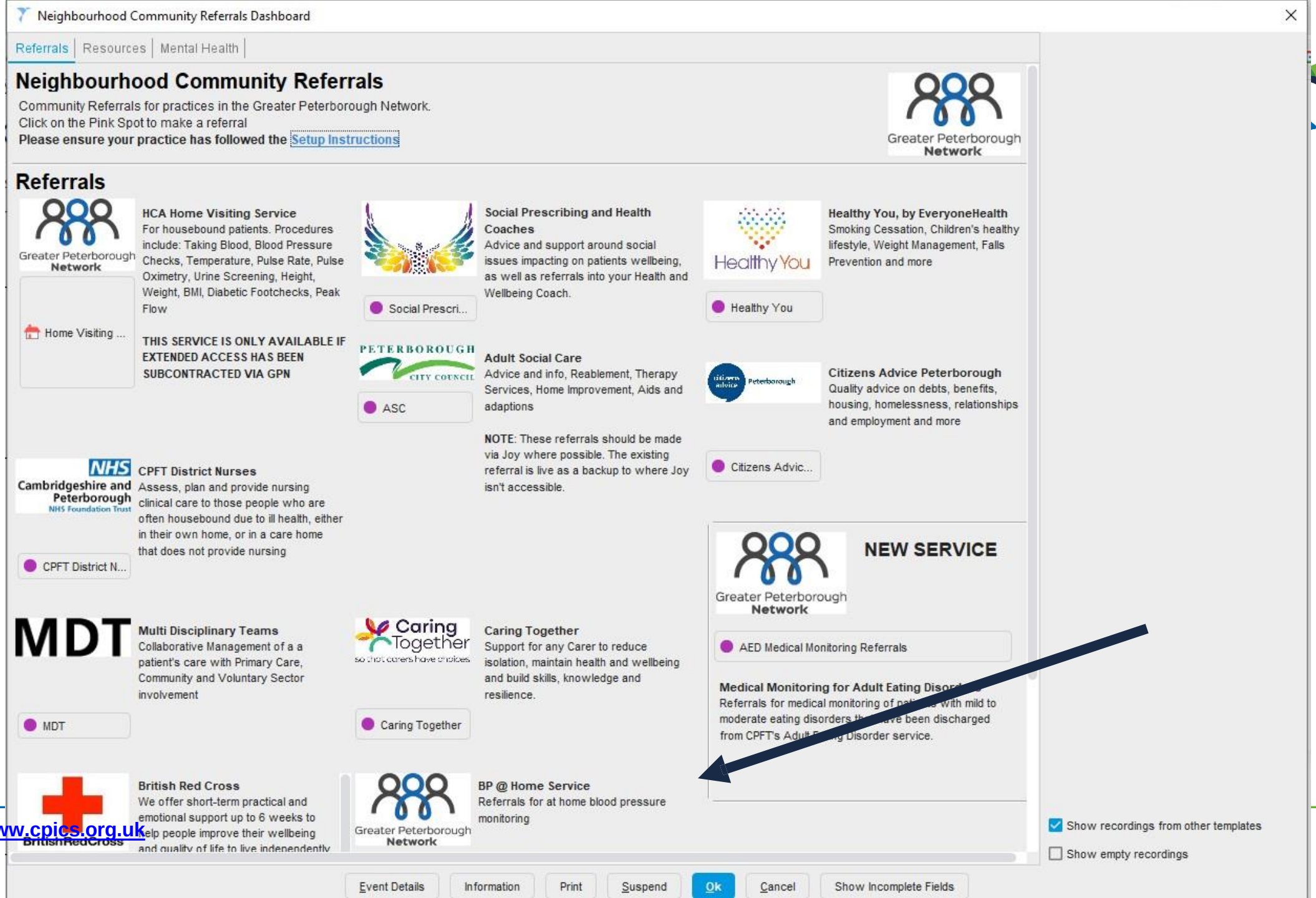
3TTs - BP

Indicator	Points	Thresholds
DM033. The percentage of patients with diabetes, on the register, without moderate or severe frailty in whom the last blood pressure reading (measured in the preceding 12 months) is 140/90 mmHg or less (or equivalent home blood pressure reading)	10	38-78%

Use BP@Home

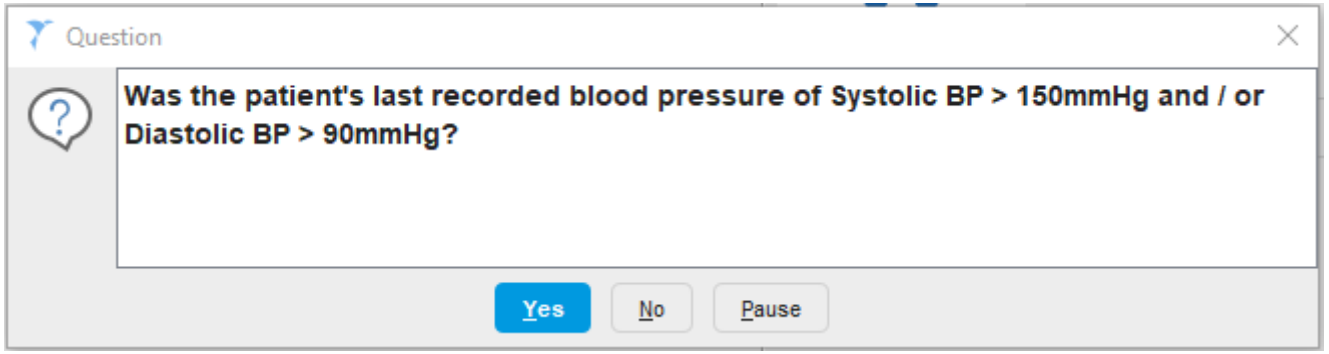
Empower Patients – ask them for their readings!

Direct them to Community Pharmacy



www.cpics.org.uk

BP@Home - Some Barriers to Ignore …



3TTs - HbA1c

Indicator	Points	Thresholds
DM020. The percentage of patients with diabetes, on the register, without moderate or severe frailty in whom the last IFCC-HbA1c is 58 mmol/mol or less in the preceding 12 months	17	35-75%
DM021. The percentage of patients with diabetes, on the register, with moderate or severe frailty in whom the last IFCC-HbA1c is 75 mmol/mol or less in the preceding 12 months	10	52-92%

Cambridgeshire & Peterborough
Integrated Care System

Medicines Update!

Trurapi is a biosimilar of NovoRapid

- ✓ **Interchangeable**
- ✓ **Must be prescribed by brand**
- ✓ **Cost effective to the NHS**
- ❖ **Not interchangeable with Fiasp**
- ✓ **System implementation**
  - ✓ **Patients advised of the change and the new packaging**
  - ✓ **Patient materials available**
- ✓ **Sufficient stock of Trurapi available to meet local need**

Trurapi is a biosimilar of NovoRapid

A biosimilar product is considered to be:

- **interchangeable** with their Reference Product,
- which means a prescriber can choose the biosimilar medicine over the Reference Product (or vice versa)
- AND EXPECT to achieve **the same therapeutic effect**.

Likewise, a biosimilar product is considered to be interchangeable with another biosimilar to the same Reference Product.

All biological medicines, including biosimilars, should be **prescribed by brand name.**

Blood glucose and ketone meters, testing strips

National commissioning recommendations

- ✓ Manufacturers available to support practices with a review and switch programme
  - ✓ Optimise quantity of strips
  - ✓ Optimise choice of meter
- ✓ Dispensing discounts available

Summary of recommended devices

Category	Patient Cohort	Meter	Recommendations
1a	Type 1 diabetes or ketosis prone Type 2 diabetes	Meters and strips which are suitable for the majority of people that also require a ketone testing meter.	A. Menarini Diagnostics - **GlucoFix Tech GK** Gluco Rx **– GlucoRx HCT,** Gluco Rx - **KEYA Smart** Nipro Diagnostics - **4SURE Smart Duo** Spirit Health **- CareSens Dual**
1b		As per 1a, plus require additional functionality.	A. Menarini Diagnostics - **GlucoFix Tech GK** Nipro Diagnostics - **4SURE Smart Duo**
2	Type 2 diabetes	Meters and strips which are suitable for the majority of people with Type 2 diabetes.	AgaMatrix – AgaMatrix **Agile** A. Menarini Diagnostics – **GlucoFix Tech GK** Ascensia – **Contour Plus Blue** Connect2Pharma – **On Call Extra Mobile** GlucoRX – **GlucoRx Q** Neon Diagnostics – **Finetest lite** Spirit Health – **CareSens S Fit** Trivida – **TRUE Metrix Air**
3	Type 2 diabetes (additional functionality)	Meters and strips which are suitable for people with Type 2 diabetes that require additional functionality.	Type 2 diabetes (enhanced functionality) First Line: AgaMatrix – **AgaMatrix Agile** Second Line: AgaMatrix – **WaveSense JAZZ**; AgaMatrix – **WaveSense JAZZ Wireless**; GlucoRx – **GlucoRx Nexus Blue** Type 2 diabetes Paediatrics First Line: Connect 2 Pharma – **On Call Extra Mobile and On Call Extra Voice** Second Line: GlucoRx – **GlucoRx Nexus Blue** Type 2 diabetes (Gestational diabetes - GDm-Health™) First Line: AgaMatrix – **AgaMatrix Agile**; Connect 2 Pharma – **On Call Extra Mobile** Second Line: AgaMatrix – **WaveSense JAZZ wireless**

Lancets

National commissioning recommendations

- ✓ Lancets which are suitable for the majority of people, and which are suitable for people that require additional functionality.

The following lancets are suitable for people with Type 1 and Type 2 diabetes including people who require additional functionality.

Category	Supplier	Lancet Name	Size	Lancet (£)	Pack size
4	A. Menarini Diagnostics	Glucoject Plus	0.22/33G	£3.77	100
	AgaMatrix	Comfort Twist	30G	£2.69	100
	AgaMatrix	AgaMatrix Ultra-thin	0.2mm/33G & 0.35mm/28G	£5.43	200
	Ascensia	Microlet	0.5mm/28G	£2.99	100
	Connect 2 Pharma	On Call	30G	£2.75	100
	GlucoRx	GlucoRx	30G	£4.50	200
	GlucoRx	GlucoRx Safety	23G, 26G, 28G, & 30G	£5.50	100
	Glucoze	Glucozen	0.35mm/28G	£8.49	200
	Neon Diagnostics	Neon Verifine safety	28G x 1.8mm & 30G x 1.8mm	£2.99	100
	Neon Diagnostics	Greenlan	28G	£3.00	100
	Nipro Diagnostics	4SURE	0.32mm/30G & 0.195mm/33G	£2.90	100
	Spirit Health	CareSens	0.36mm/28G & 0.31mm/30G	£2.95	100
	Trividia	TRUEplus	0.36mm/28G, 0.32mm/30G & 0.195mm/33G	£2.90	100

CGM Local Position – as per November 22

Individuals with Type 1 diabetes: Suitable for initiation in Primary or Secondary Care and can be prescribed to all patients with Type 1 diabetes. Please note additional information below:

- Children living with diabetes may need a CGM which allows a parent or guardian to monitor the patient's glucose levels in real time. Where this is required, this will be provided by the Specialist Paediatric Diabetes Team directly.
- There may be individual patients with type 1 diabetes who have complex clinical needs where a CGM with additional functions may be required. Secondary care will be responsible for prescribing these systems.

Individuals with Type 2 diabetes: Restricted to pregnant patients (with type 2 or gestational diabetes) and patients with type 2 diabetes who are on multiple daily insulin injections with any of the following:

- Severe hypoglycaemia or impaired hypoglycaemic awareness (Score ≥4 on the Gold hypoglycaemia unawareness Likert scale)
- Condition or disability that means they are unable to self-monitor but can act upon glycaemic changes
- Is living with a learning disability
- Renal failure on dialysis
- Cystic fibrosis
- Where they require help from a care worker or health care professional to monitor their blood glucose.

Which CGM can be prescribed on a FP10

Freestyle Libre 2
scan or
'flash' the sensor
with smartphone
or receiver

Dexcom One
Automatically
every five minutes to
smartphone or receiver

- ✓ Both devices consist of a subcutaneous glucose-sensing electrode which sends interstitial glucose levels to a paired receiver and/or insulin pump via a transmitter.

- ✓ All systems provide:
  - ✓ current interstitial fluid glucose
  - ✓ glucose history over the preceding hours, days and weeks

How to use Dexcom One and Freestyle Libre 2?

Freestyle Libre 2 – YouTube

Getting Started with the FreeStyle Libre 2 system – YouTube

Freestyle UK & Ireland - YouTube

Freestyle Libre 2
scan or
'flash' the sensor
with smartphone
or receiver

Dexcom One - YouTube

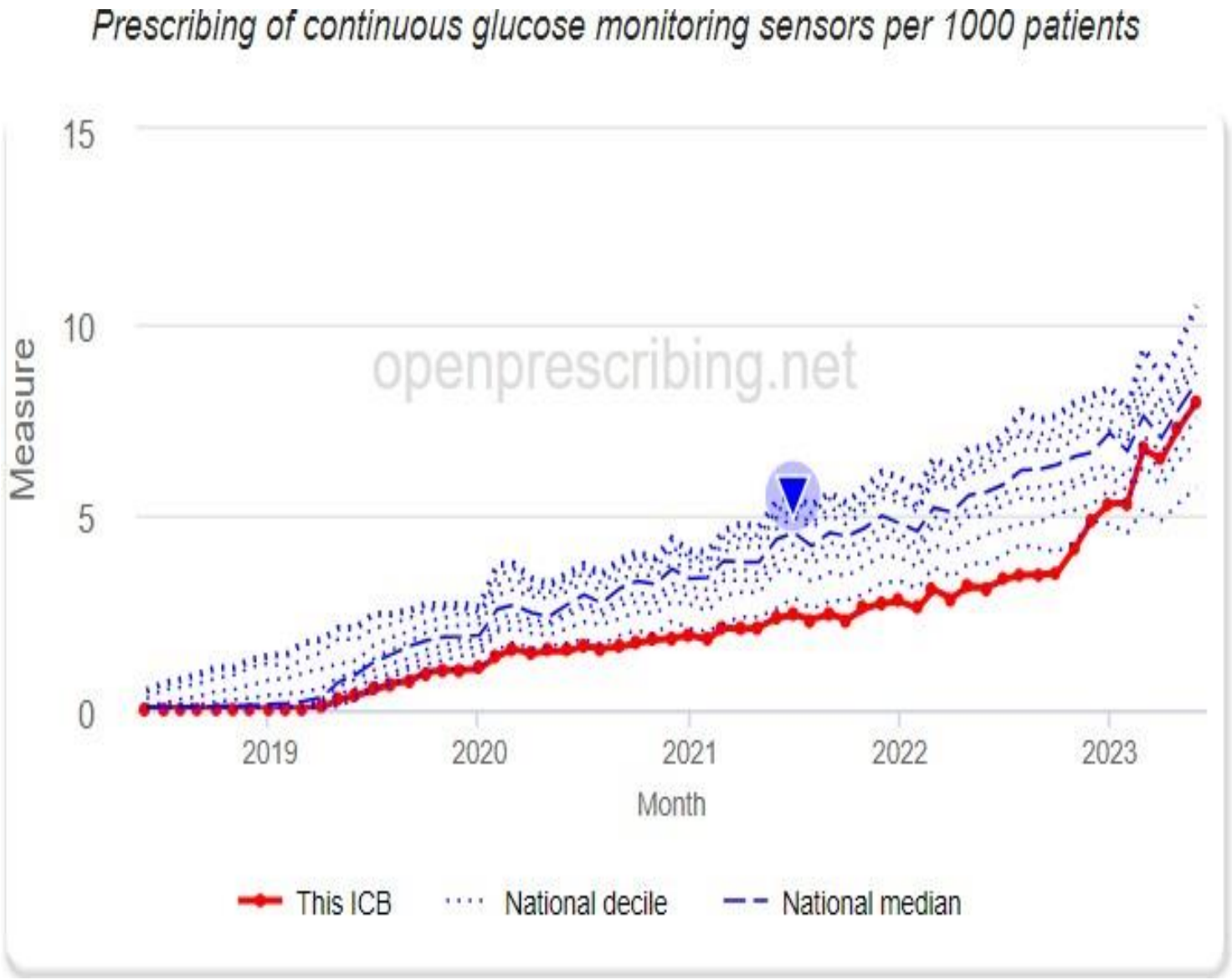
Dexcom One Getting Started mmol – YouTube

Dexcom One Receiver Video - YouTube

Dexcom UK and Ireland – YouTube

Dexcom One
Automatically
every five minutes to
smartphone or receiver

Association of British Clinical Diabetologist resources: https://abcd.care/dtn/resources



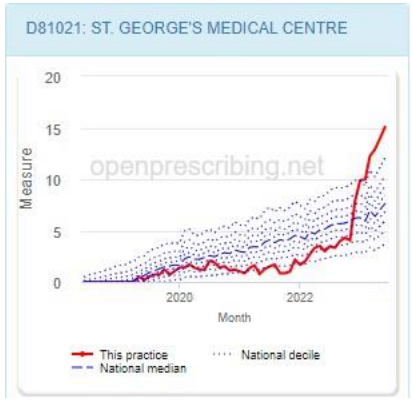
June 23 (39th percentile) 8227 sensors prescribed

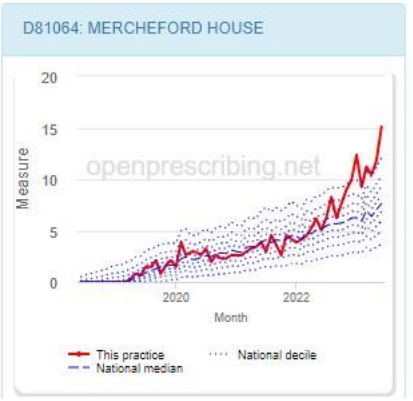
March 23 (29th percentile) 6949 sensors prescribed

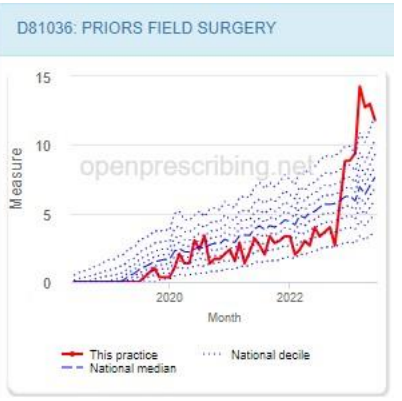
October 22 (2nd percentile) 3602 sensors prescribed

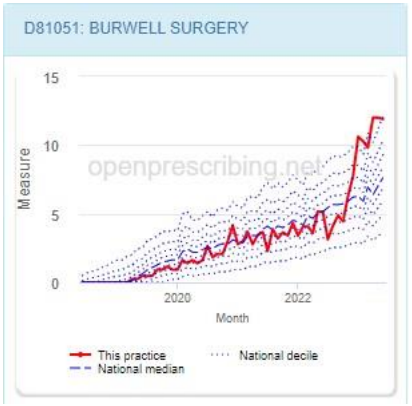
Thank you!

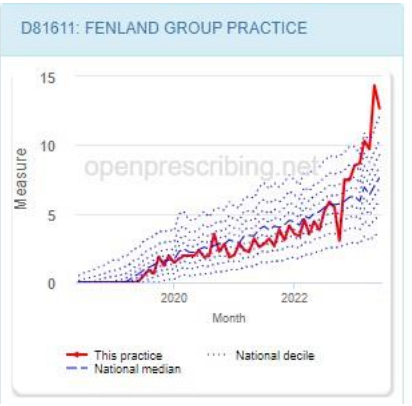
- ✓ Practices have increased their prescribing of Freestyle Libre 2 sensors or Dexcom One sensors.

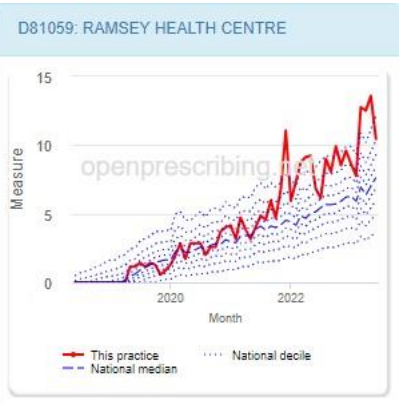












[Prescribing of continuous glucose monitoring sensors by practices in NHS CAMBRIDGESHIRE AND PETERBOROUGH | OpenPrescribing]

Implementation Tips

- ✓ Appointment not always needed, many patients in other areas have self-started once they have collected the starter kit

- ✓ Links to patient resources from manufacturers can be sent by the practice to the patient via AccuRx messages.

- ✓ Helplines available to support patients (Dexcom 0800 031 5761 ; FreeStyle Libre 0800 170 1177)

- ✓ Patient Resources are available for both Freestyle Libre 2 and Dexcom One:
  - ✓ Freestyle Libre: Tutorials & Downloads | Freestyle Libre | Abbott
  - ✓ Dexcom One: UK Dexcom ONE Glucose Monitor for Type 1 - Type 2 Diabetes | Dexcom

- ✓ Remember to adjust their blood glucose test strip quantities

- ✓ Some patients will require specific CGM via their diabetes team – remember to stop the CGM on FP10. This will be in the specialist communication to the practice.

Non diabetic hyperglycaemia (NDH)

Indicator	Points	Thresholds
Records		
NDH002. The percentage of patients with non-diabetic hyperglycaemia who have had an HbA1c or fasting blood glucose performed in the preceding 12 months	18	50–90%

CODING:

Please ensure your patients HbA1c 42-47 (& not T1, T2 nor GDM) are coded with Pre-Diabetes or Non-Diabetic Hyperglycaemia

QoF does not (yet) ask you to refer your patients with NDH/ Pre-Diabetes ….
But
The LES does ☺
Also – holding an '**ambition for remission**' for these patients & encouraging lifestyle changes means fewer T2DM in the future ☺

Cambridgeshire & Peterborough
Integrated Care System

NDPP

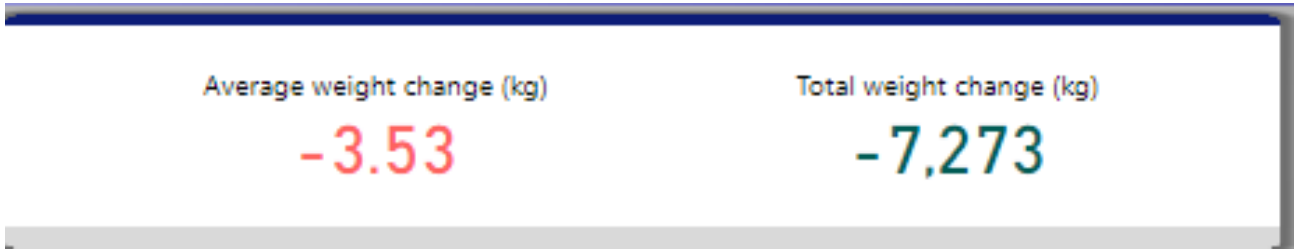
Reed Wellbeing

thrive tribe

Participant Outcomes

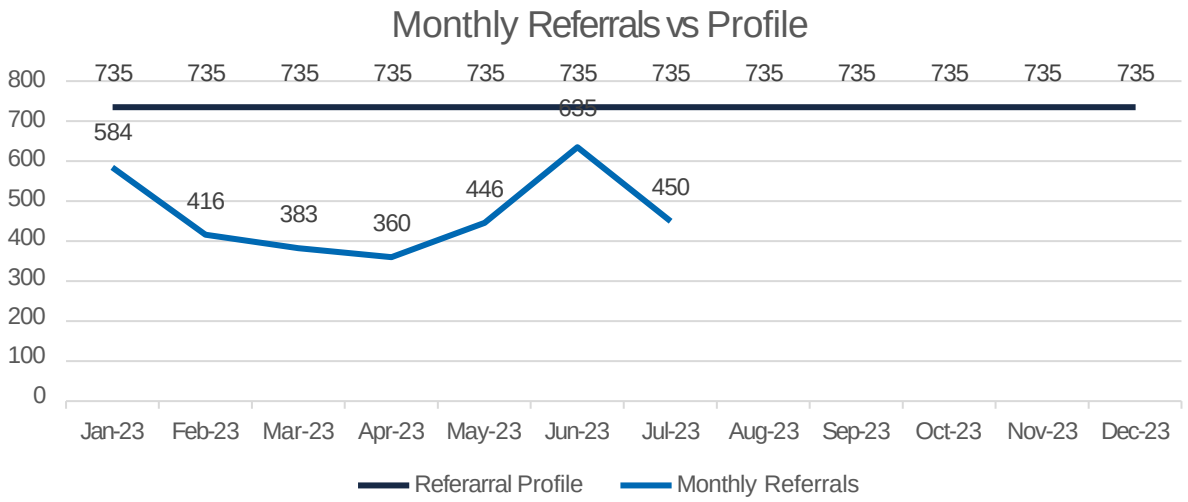
- We have received **3846** referrals so far this year and we started **100** new programmes since January 2023.
- **1764** patients from Cambridgeshire and Peterborough have attended a programme since Jan 2023.
- Since the start of the contract (Dec 2020) **2,400** participants have completed the 9 month programme.

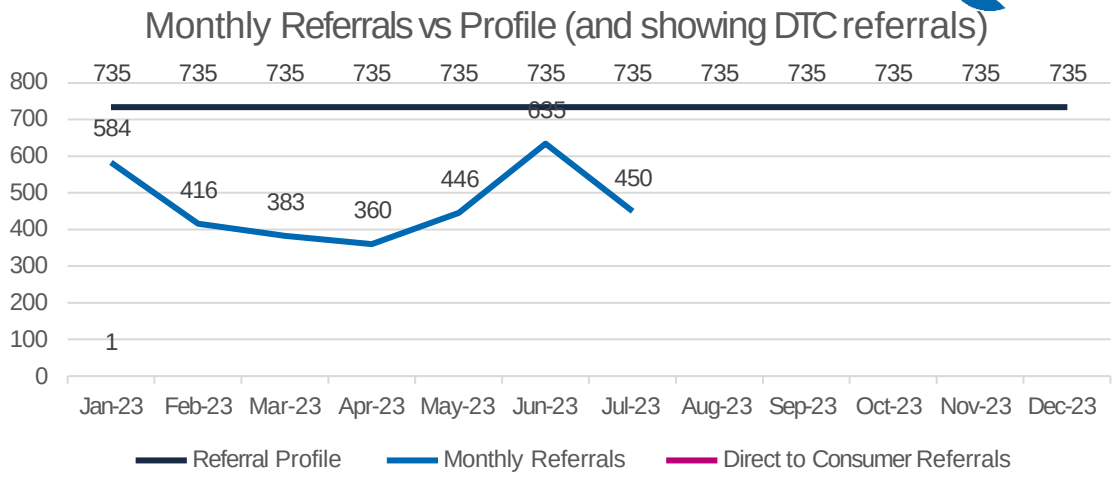
Participant Weight Changes

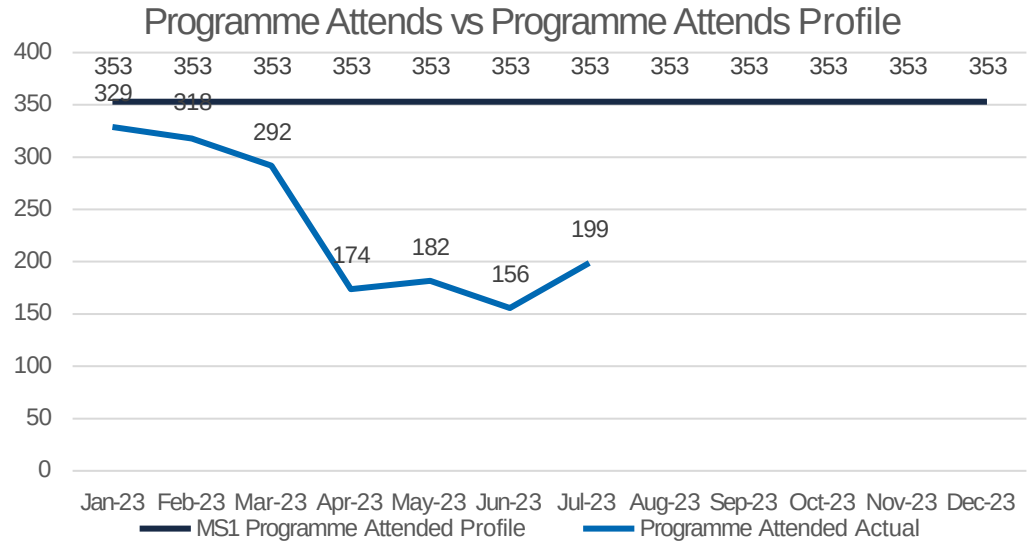


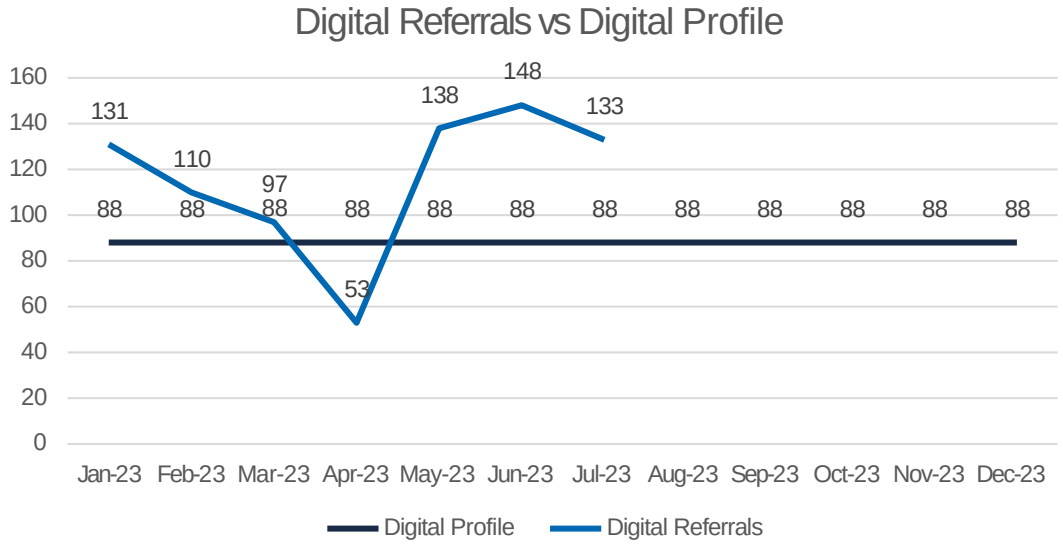
Reed Company Confidential

NDPP - referrals



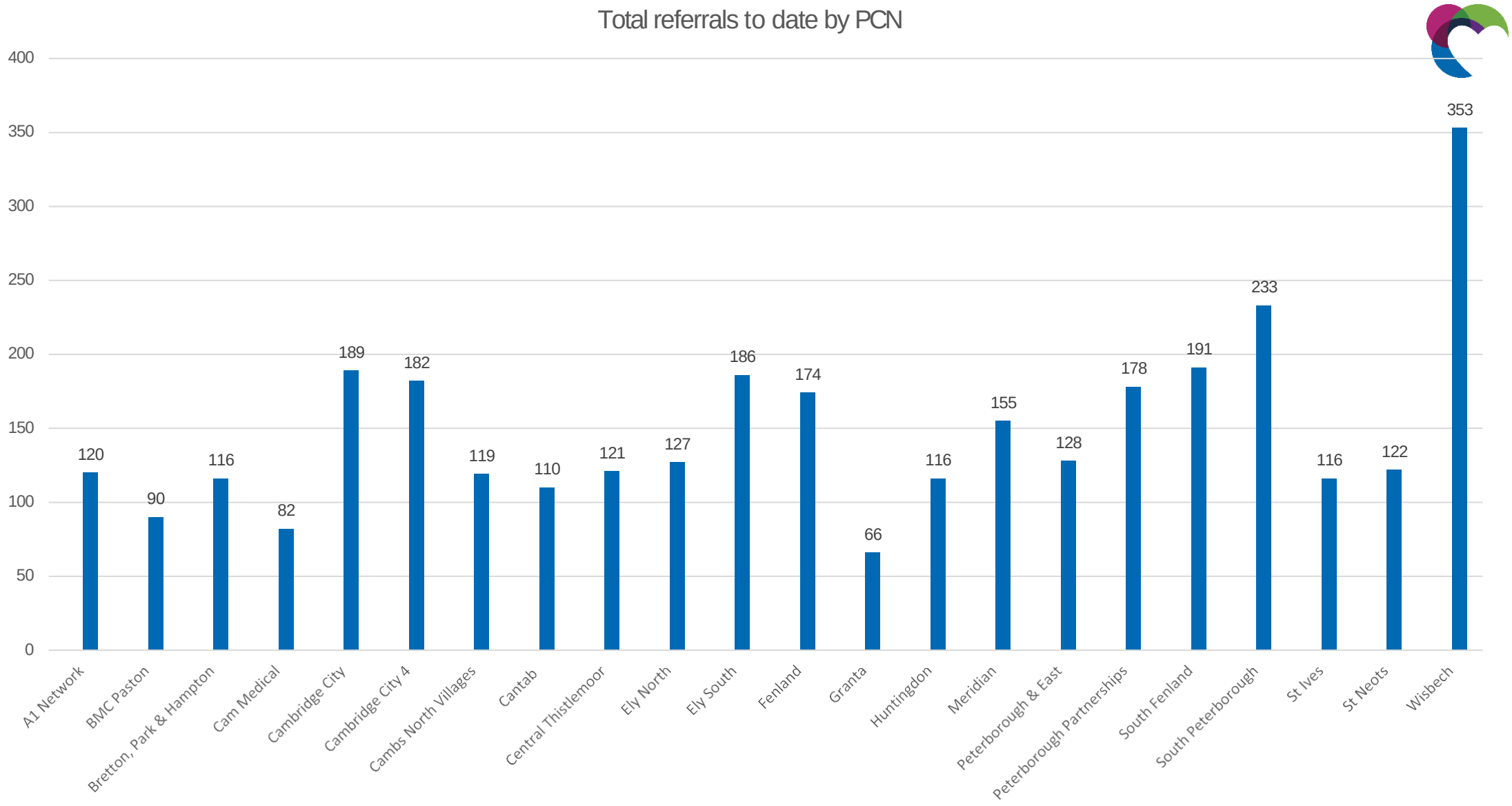






NDPP DASHBOARD 2023

			Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Total to date	% complete
Registered Patients	PCN Target	**Referral profile**	**735**	**735**	**735**	**735**	**735**	**735**	**735**	**735**	**735**	**735**	**735**	**735**	**8820**	
		Actual referrals	**584**	**416**	**383**	**360**	**446**	**635**	**450**	**0**	**0**	**0**	**0**	**0**	**3274**	37%
45576	402	A1 Network	13	12	14	18	28	16	19						**120**	30%
43417	391	BMC Paston	13	8	14	7	13	24	11						**90**	23%
32193	335	Bretton, Park & Hampton	8	15	16	25	14	22	16						**116**	35%
51622	432	Cam Medical	12	9	3	11	8	24	15						**82**	19%
39125	370	Cambridge City	22	67	16	14	14	39	17						**189**	51%
58569	467	Cambridge City 4	21	18	32	17	15	48	31						**182**	39%
50250	425	Cambs North Villages	8	13	18	10	26	27	17						**119**	28%
56449	456	Cantab	14	10	19	8	10	22	27						**110**	24%
55002	449	Central Thistlemoor	11	12	18	14	14	25	27						**121**	27%
40141	375	Ely North	48	14	9	5	20	25	6						**127**	34%
40153	375	Ely South	122	12	5	7	5	28	7						**186**	50%
30923	329	Fenland	20	18	17	21	21	58	19						**174**	53%
45513	402	Granta	7	1	2	6	15	28	7						**66**	16%
35254	350	Huntingdon	12	19	12	23	20	12	18						**116**	33%
50154	425	Meridian	22	7	13	22	29	40	22						**155**	36%
62796	488	Peterborough & East	19	19	14	15	19	21	21						**128**	26%
27877	313	Peterborough Partnerships	29	25	25	22	28	31	18						**178**	57%
31277	330	South Fenland	42	26	20	12	24	22	45						**191**	58%
61303	481	South Peterborough	19	36	32	32	40	41	33						**233**	48%
47553	412	St Ives	12	9	21	16	25	17	16						**116**	28%
46614	407	St Neots	15	17	18	22	27	15	8						**122**	30%
50757	428	Wisbech	95	49	45	33	31	50	50						**353**	83%
Total	**8841**															


Total referrals to date by PCN
400
350
300
250
200
150
100
50
0
120
90
116
82
189
182
119
110
121
127
186
174
66
116
155
128
178
191
233
116
122
353
A1 Network
BMC Paston
Bretton, Park & Hampton
Cam Medical
Cambridge City
Cambridge City 4
Cambs North Villages
Cantab
Central Thistlemoor
Ely North
Ely South
Fenland
Granta
Huntingdon
Meridian
Peterborough & East
Peterborough Partnerships
South Fenland
South Peterborough
St Ives
St Neots
Wisbech

Good News Story

One of the group challenges we set at the start of participants 9-month journey with us
Is to try and walk the equivalent steps from Lands' end to John O'Groats.

This participant decided to walk the challenge on his own and even remembered to Take his workbook with him!!

Reed Company Confidential

Cambridgeshire & Peterborough
Integrated Care System

NHS Type 2 Diabetes Path to remission Programme (T2DR)

Oviva

What is it? T2DPR is the new name for Very Low Calorie Diet

The Type 2 Diabetes Pathway to Remission (T2DPR) programme supports people living with Type 2 Diabetes to achieve weight loss and live a healthier lifestyle.

It is a completely FREE total diet replacement and support programme for people living with Type 2 Diabetes, in Cambridgeshire and Peterborough.

This programme is being rolled out in phases as part of proportionate universalism, to focus on populations with the highest IMD & Obesity prevalence.

Each PCN's will be notified of their phase in due course.

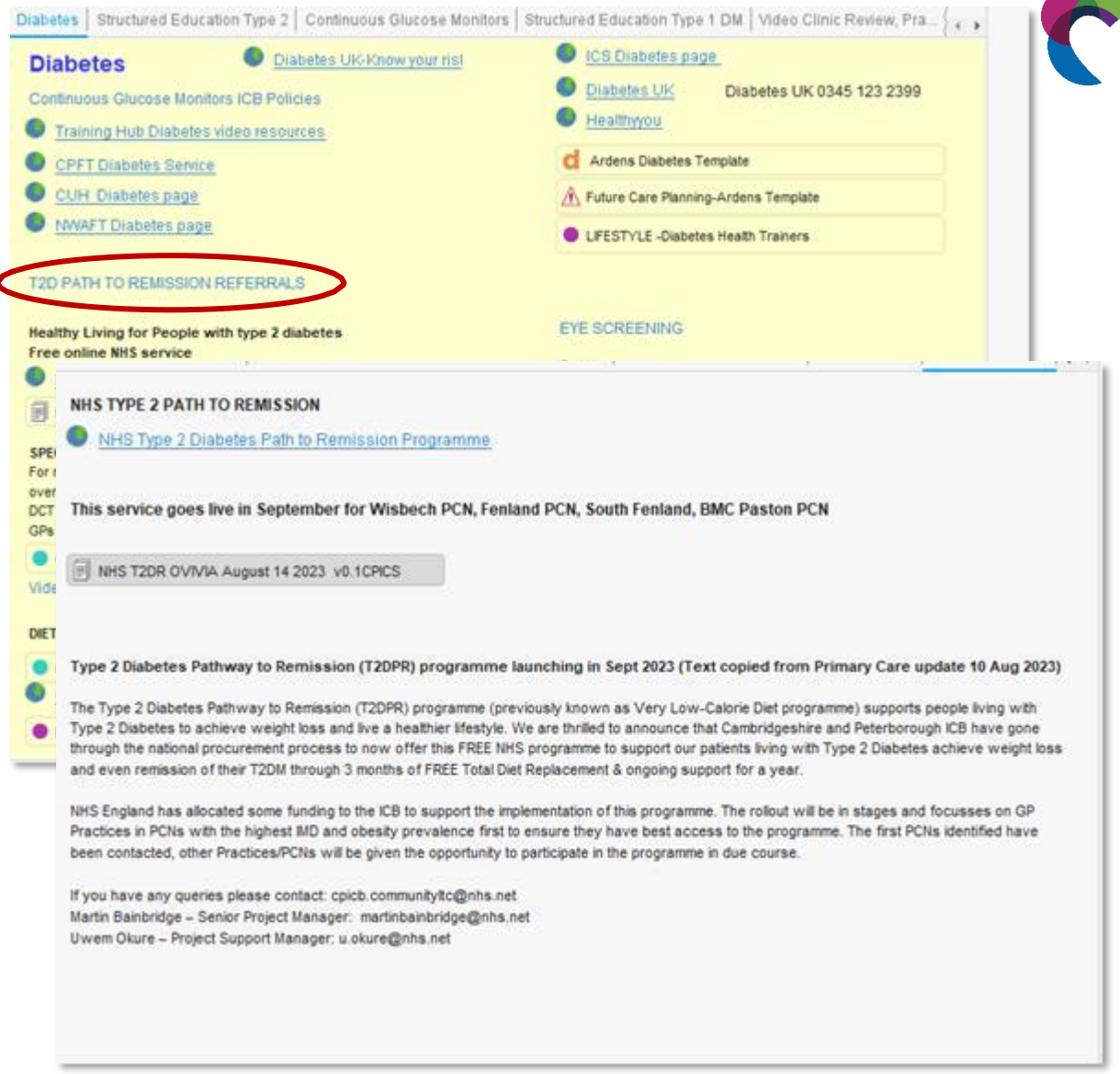
When the programme rolls out to your PCNs, there will be training sessions available with the provider and we are working on searches to run for eligible patients through System1 and EMIS. Eligibility criteria will be provided.

How and when?

There are referral forms available on System1

As part of a phased roll out, this programme has gone live on the 1st of September in the first four primary care networks (PCNs) located in Wisbech, Fenland, South Fenland and BMC Baston.

We have already had 2 accepted referrals from Ramsey Health Centre.



Structured Education

Indicator	Points	Thresholds
DM014. The percentage of patients newly diagnosed with diabetes, on the register, in the preceding 1 April to 31 March who have a record of being referred to a structured education programme within 9 months after entry on to the diabetes register	11	40–90%

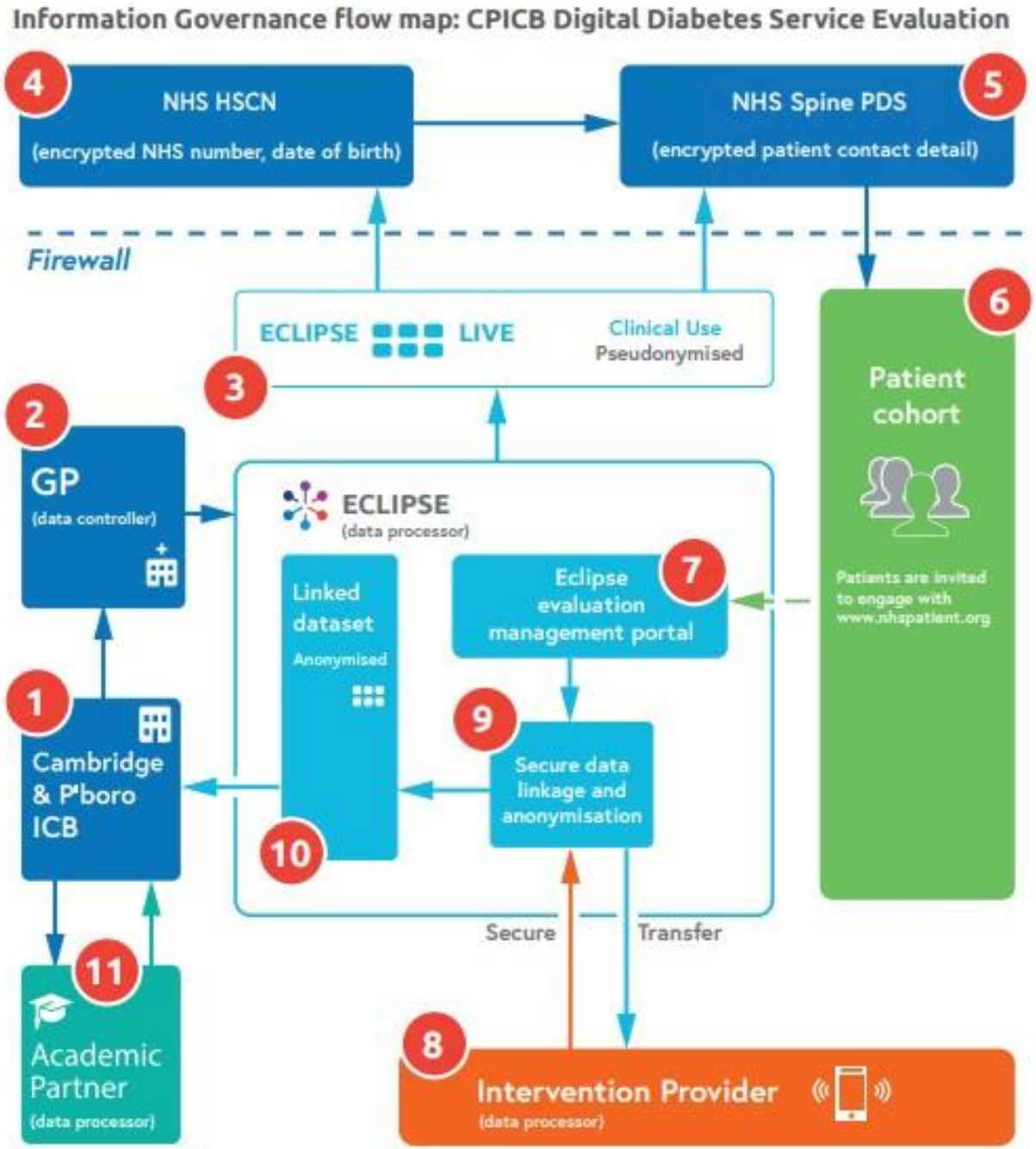
Structured Education

Structured Education Available		
Pre Diabetes	Type 1	Type 2
NDPP	DAFNE	DESMOND
	PDAC	myDESMOND
	BERTIE online	Healthy Living
	MyTYPE1 Diabetes	

Diabetes: Structured Education

- **Feb 2020:** Early Adopter Practices identified a need for Patient-facing app to deliver Structured Education.
- Collaborative work identified Grohealth.com (was 'Diabetes Digital Media') as preferred by practices; MyDESMOND was alternative option.
- COVID – significant impact on F2F education & delayed progress.
- Various Information Governance challenges (trailblazing initiative)
- **May 2023** – went live to patients
- University of Cambridge – independent evaluator

Digital Diabetes Programme: Information Governance



ECLIPSE

Cambridge & Peterborough Digital Diabetes Programme

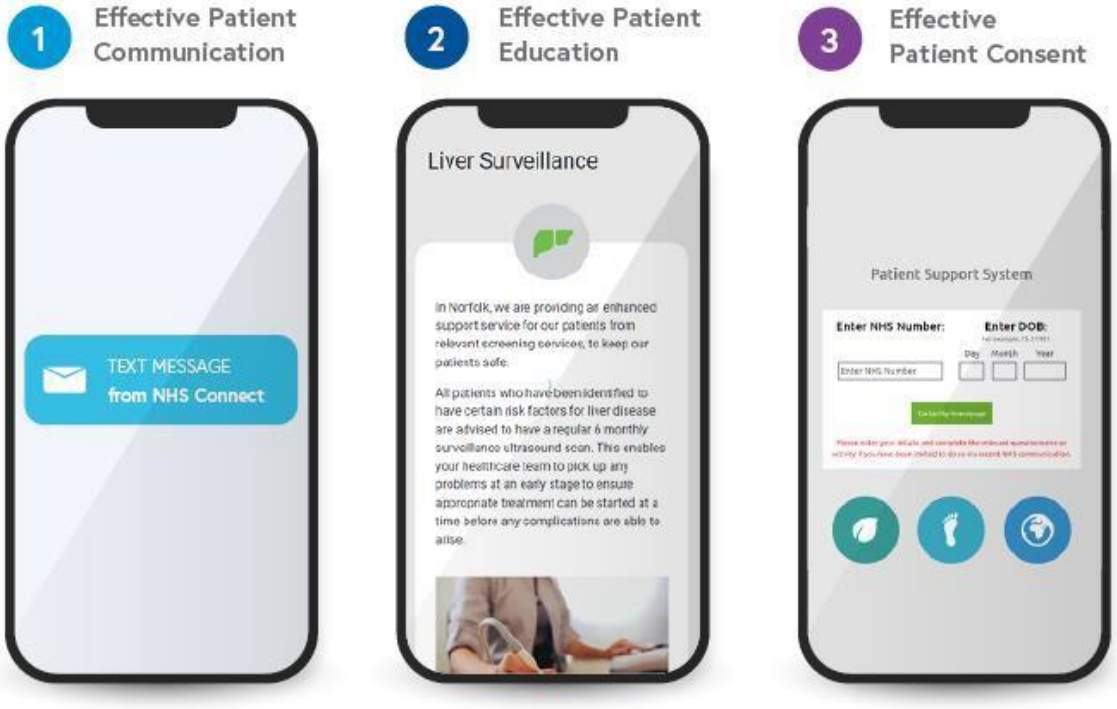
Primary Objective

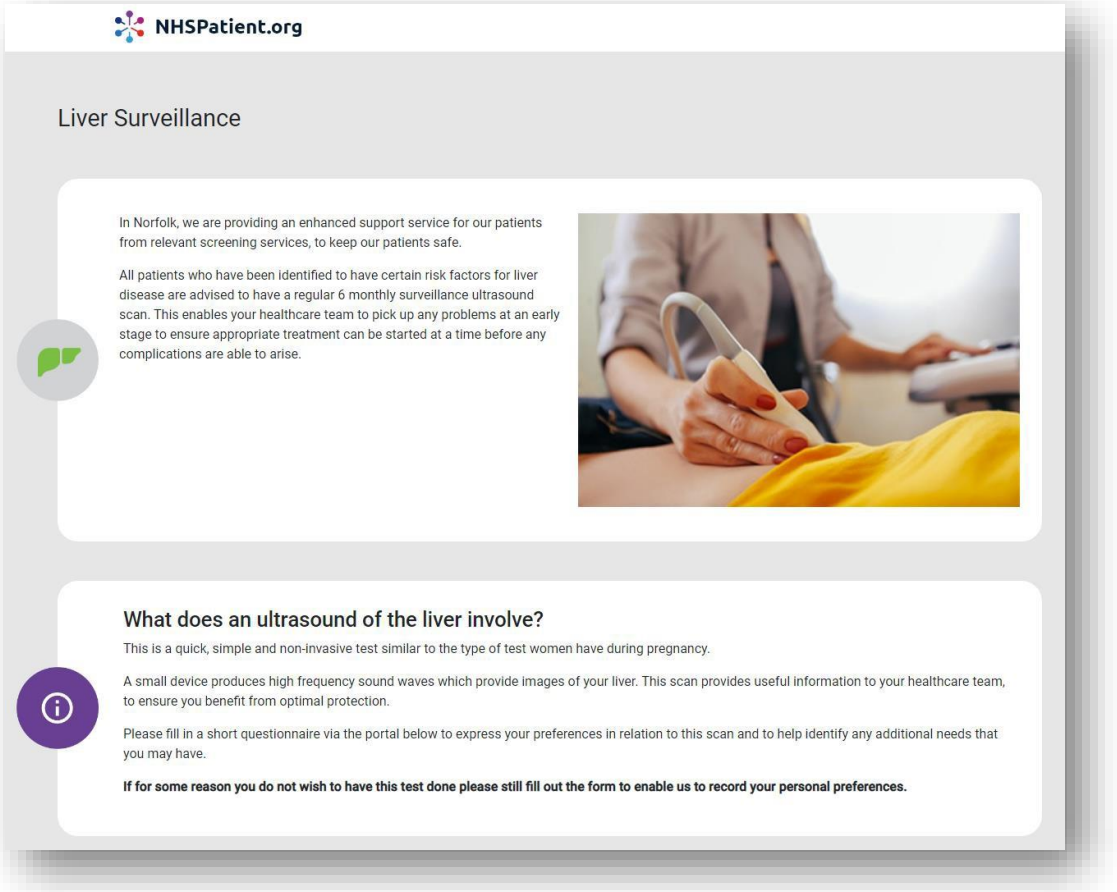
To compare the effect of two Type 2 Diabetes e-health interventions (Gro Health and MyDESMOND) on change in glycated haemoglobin (HbA1c) over 12 months in adults with type 2 diabetes.

Secondary Objectives

1. To evaluate the effect of MyDESMOND and Gro Health on:
   - body weight, blood pressure, lipid profile, modelled cardiovascular risk and medication use at 6 and 12 months
   - the probability of achieving clinically significant weight loss, good glycaemic control or diabetes remission at 6 and 12 months
   - psychosocial factors associated with successful weight control at 6 and 12 months.
2. To evaluate the cost-effectiveness of MyDESMOND and Gro Health.
3. To assess the uptake of and adherence to the two programmes by the target population.
4. To explore participant and practitioner experiences of the two programmes and the extent to which these programmes meet their needs.

Pegasus Patient Engagement





Outcomes: Digital Diabetes Programme

11 “Deep End” GP practices consented to involvement in this programme and after matching for demographic differences, patients were randomised into one of the two app groups

5,321 text messages sent out

1,262 Patients 23.7% of patients indicated desire to take part and details passed to app companies

1,153 (91%) fully completed patients questionnaires received

630 Patients currently registered & receiving Diabetes: Structured Education via the two apps

Interim analysis due March 2024

As a Community Colleague – you are a 'Service User'

https://www.menti.com/ali3obeyyqd9

- what works well?
- what doesn't work well?
- what ideas have you got for improvements?

Cambridgeshire & Peterborough
Integrated Care System

The importance of B12:To test or not to test?

Mr Julian Owen

The importance of B12: To test or not to test?

Mr P Julian Owen

Consultant Trauma & Orthopaedic Surgeon, Addenbrookes Hospital, Cambridge MSK Lead, Cambridgeshire & Peterborough ICS

Core20PLUS5 Ambassador, NaFonal Healthcare InequaliFes Improvement Programme Past-President BriFsh Orthopaedic Directors Society

Founder Member & Chair cluB-12Member

GiRFT Vitamin B12 Programme

Outline

- Biological Anthropology
- B12 Deficiency (B12d)
- Exacerbating Factors in the 21st Century
- Underdiagnosis
- Undertreatment
- Diabetes
- Reawakening
- club-12

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

Outline

- Biological Anthropology
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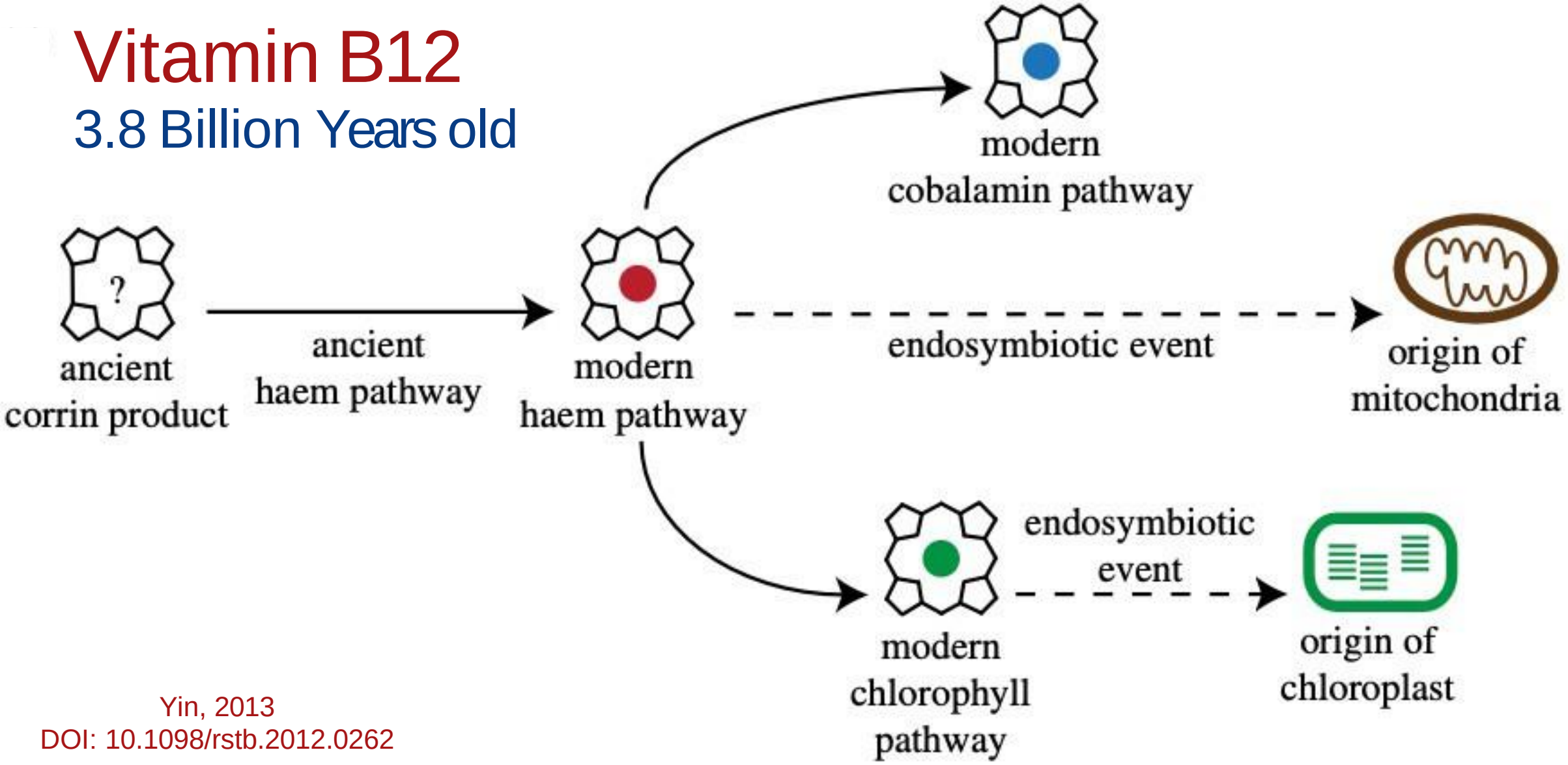
Mr P Julian Owen
C&P Diabetes LES, 13/9/23

Vitamin B12

3.8 Billion Years old



Yin, 2013
DOI: 10.1098/rstb.2012.0262

Outline

- Biological Anthropology
- B12 Deficiency (B12d)
- Exacerbating Factors in the 21st Century
- Underdiagnosis
- Undertreatment
- Diabetes
- Reawakening
- club-12

Mr P Julian Owen

‘Magaloblastic Madness’

but

Many present with only neuropsychiatric features

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

Vitamin B12 deficiency

BMJ 2014

Hunt, 2014
DOI: 10.1136/bmj.g5226

Fig 2 | Clinical features of vitamin B_{12} deficiency

NICE National Institute for Health and Care Excellence

NICE > CKS > Health topics A to Z > Anaemia - B12 and folate deficiency > Diagnosis > Signs and symptoms

- **Symptoms of vitamin B12 and folate deficiency include:**

- **Signs of vitamin B12 and folate deficiency include:**

- **Neurological complications associated with vitamin B12 deficiency include:**
  - Loss of cutaneous sensation.
  - Loss of mental and physical drive.
  - Muscle weakness.
  - Optic neuropathy.
  - Psychiatric disturbances – these range from mild neurosis to severe dementia.
  - Symmetrical neuropathy affecting the legs more than the arms — this usually presents with ataxia or paraesthesia.
  - Urinary or faecal incontinence.

cks.nice.org.uk/topics/anaemia-b12-folate-deficiency/diagnosis/signs-symptoms/

Outline

- Biological Anthropology
- B12 Deficiency (B12d)
- ExacerbaFng Factors in the 21st Century
- Underdiagnosis
- Undertreatment
- Diabetes
- Reawakening
- club-12

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

Check for updates

The BMJ

Cite this as: *BMJ* 2022;378:o2155
http://dx.doi.org/10.1136/bmj.o2155
Published: 05 September 2022

Nitrous oxide: Doctors warn of "epidemic" of use by young people

Zainab Hussain

Doctors have warned that they are seeing a rise in neurological complications among young people as a result of use of nitrous oxide, commonly known as laughing gas.

Nitrous oxide has become an increasingly popular recreational drug at festivals, nightclubs, and parties. Used to induce laughter and hallucinations, the gas is not illegal to possess and can be purchased online in the small silver canisters known as "whippits."

"Essentially, by inactivating vitamin B12, nitrous oxide can lead to a paraparesis via myelopathy due to B12 affecting the posterior columns of the spinal cord. It can also cause neuropathy again via B12 deficiency. B12 can be normal, depending on the assay, so doctors may check methylmalonic acid which is markedly raised."

Hussain, 2022
DOI:10.1136/bmj.o2155

Nitrous Oxide

- Therapeutic use
  - Labour Ward
  - Emergency Department
  - (Rarely in General Anaesthesia)
- Recreational abuse

'Nitrous oxide oxidizes the active cobalt atom …. outperforming the reductive recovery system…. leads to
….inactivation of Methionine Sythase'

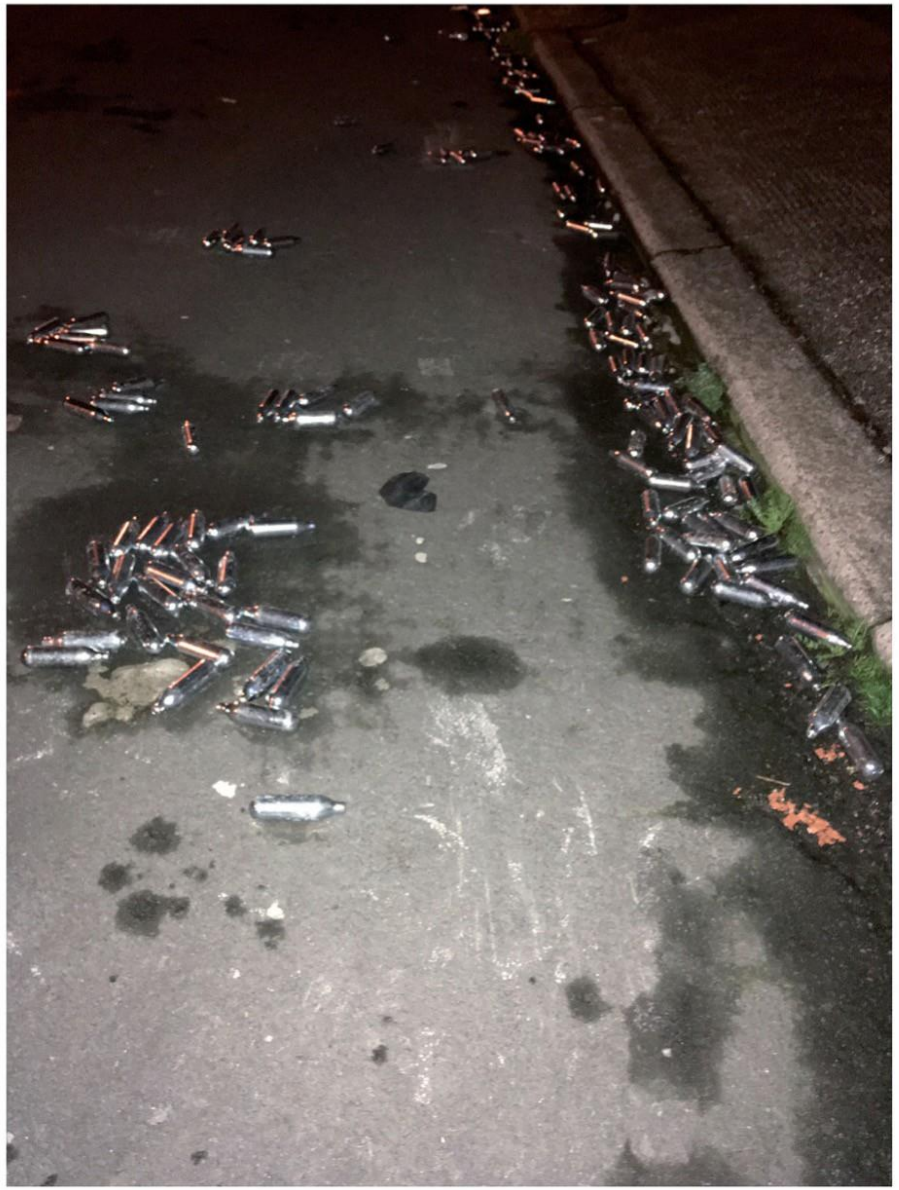


Figure 6. Empty nitrous oxide canisters in a London residential street, February 2020.

Sobczyńska-Malefora, 2021
DOI: 10.1080/10408363.2021.1885339

Nitrous Oxide

Anaesthesia 2023 doi:10.1111/anae.16086

Editorial

Is the future of nitrous oxide as volatile as the gas itself?

A. N. Agrawal,[1] **F. Alagarsamy,**[2] **P. J. Owen**[3] and **A. A. Klein**[4]

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4 Consultant, Department of Anaesthesia and Intensive Care, Royal Papworth Hospital, Cambridge, UK

Correspondence to: A. Klein
Email: andrew.klein@nhs.net

Accepted: 17 June 2023
Keywords: addiction; B12 deficiency; Entonox™; greenhouse gas; nitrous oxide; occupational exposure

Agrawal, 2023
DOI: 10.1111/anae.16086

Plant Based Diets

Niklewicz, 2022
DOI: 10.1007/s00394-022-03025-4

European Journal of Nutrition
https://doi.org/10.1007/s00394-022-03025-4

COMMENT

Check for updates

The importance of vitamin B_{12} for individuals choosing plant-based diets

Ali Niklewicz[1] · A. David Smith[2] · Alison Smith[3] · Andre Holzer[3] · Andrew Klein[4] · Andrew McCaddon[5] · Anne M. Molloy[6] · Bruce H. R. Wolffenbuttel[7] · Ebba Nexo[8] · Helene McNulty[9] · Helga Refsum[10] · Jean-Louis Gueant[11] · Marie-Joe Dib[12] · Mary Ward[9] · Michelle Murphy[13] · Ralph Green[14] · Kourosh R. Ahmadi[1] · Luciana Hannibal[15] · Martin J. Warren[16] · P. Julian Owen[17] · on behalf of CluB-12

Received: 20 May 2022 / Accepted: 5 October 2022
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The Importance of Vitamin B12 for Individuals Choosing Plant-Based Diets

- Vitamin B12 is an essential nutrient that is not made by plants, consequently plant-based foods are not a reliable supply

- Recent estimates suggest high rates of vitamin B12 deficiency among the vegetarian and vegan populations, particularly in pregnant women or women of child-bearing age who, for ethical and health reasons, are shifting towards higher consumption of plant-based foods in ever- increasing numbers

Niklewicz, 2022
DOI: 10.1007/s00394-022-03025-4

The Importance of Vitamin B12 for Individuals Choosing Plant-Based Diets

EJN 2022

- Vitamin B12 plays crucial metabolic roles across the life-course and in par;cular during pregnancy and in early development (first 1000 days of life)
- Evidence now implicates vitamin B12 deficiency with increased risk to a range of neuro, vascular, immune, and inflammatory disorders.

Niklewicz, 2022
DOI: 10.1007/s00394-022-03025-4

Plant Based Diets

Fig. 1 Presents the pattern of consumption for different food components ranging from a vegan to omnivore diet. *A flexitarian diet may occasionally consume fish, seafood and animal products but likely limit their consumption of these foods for environmental and health reasons. *.[1]Shows the gradient of vitamin B_{12} found in foods from differing diets, ranging from none in vegan diets to high in omnivore (without the intake of supplements or fortified foods).

Key: = avoided in diet = occasionally consumed in diet = consumed in diet

Niklewicz, 2022
DOI: 10.1007/s00394-022-03025-4

Key Points

Nitrous Oxide use / abuse &

widespread adop3on of more sustainable Plant Based Diets

are exacerba3ng the issues

Outline

- Biological Anthropology
- B12 Deficiency (B12d)
- ExacerbaFng Factors in the 21st Century
- Underdiagnosis
- Undertreatment
- Diabetes
- Reawakening
- club-12

Mr P Julian
Owen C&P Diabetes LES,
13/9/23

Biomarkers of Vitamin B12 Status

‘Serum B12’ is the only assay available to General Practice

Table 1 | **Biomarkers of vitamin B_{12} status**

Biomarker; unit	Assay principle	Tentative reference interval*	Tentative cut-off value for B12 deficiency*	Tentative cut-off value for B12 repletion*	Major confounding factors
B12; pmol per litre	Protein-binding assay	200–600	<148	>221	Alterations in the plasma-binding proteins, haptocorrin or transcobalamin
Holotranscobalamin (transcobalamin-bound, active B12); pmol per litre	Immunological	40–100	<35	>40	Genetic variation in *TCN2* (REFS 73,209) and kidney function
Homocysteine; µmol per litre‡	Immunological, high-performance liquid chromatography or gas chromatography mass spectrometry	8–15	>15	<8	Folate and B6 deficiency, kidney and thyroid function, sex and age
Methylmalonic acid; µmol per litre	Liquid chromatography–mass spectrometry or gas chromatography mass spectrometry	0.04–0.37	>0.37	<0.27	Kidney function and *HIBCH* polymorphisms[117]
4cB12§	See formula below	–2.5–1.5	<–0.5	>0.5	Can be corrected for folate status and age

Green, 2017
DOI: 10.1038/nrdp.2017.40

Clinical Chemistry 53:5
963–970 (2007)

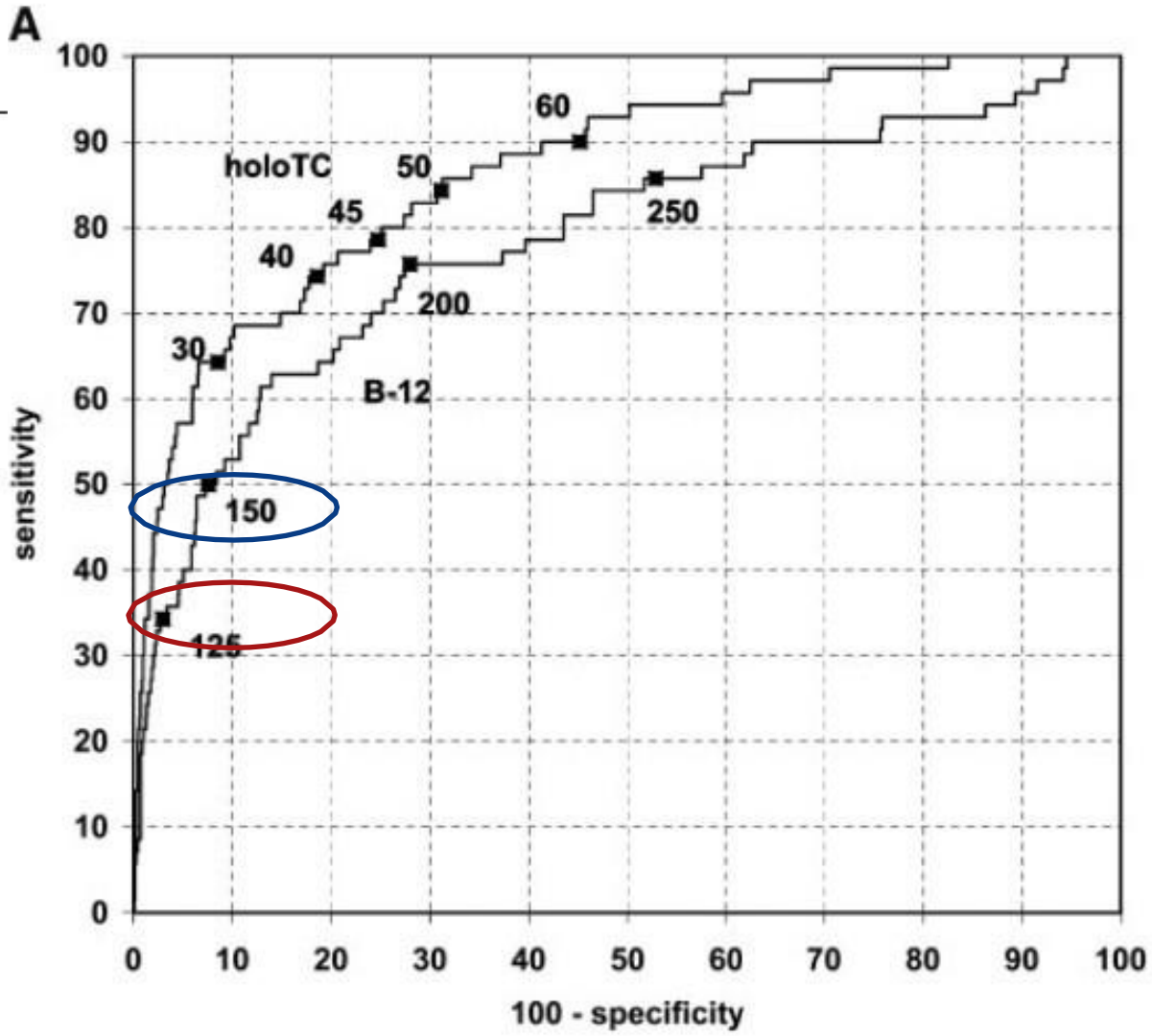
Nutrition

Detection of Vitamin B_{12} Deficiency in Older People by Measuring Vitamin B_{12} or the Active Fraction of Vitamin B_{12}, Holotranscobalamin

Robert Clarke,[1*] Paul Sherliker,[1] Harold Hin,[2] Ebba Nexo,[3] Anne Mette Hvas,[3] Joern Schneede,[4] Jacqueline Birks,[5] Per M. Ueland,[6] Kathleen Emmens,[1] John M. Scott,[7] Anne M. Molloy,[7] and John Grimley Evans[5]

@ Current Thresholds: Holo-TC - 45% Sensitivity

Serum B12 - 35% SensiJvity



Clarke, 2007
DOI: 10.1373/clinchem.2006.080382

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UK NEQAS Haema-nics

UK Quality Standards agency for laboratory tests

327 Laboratories

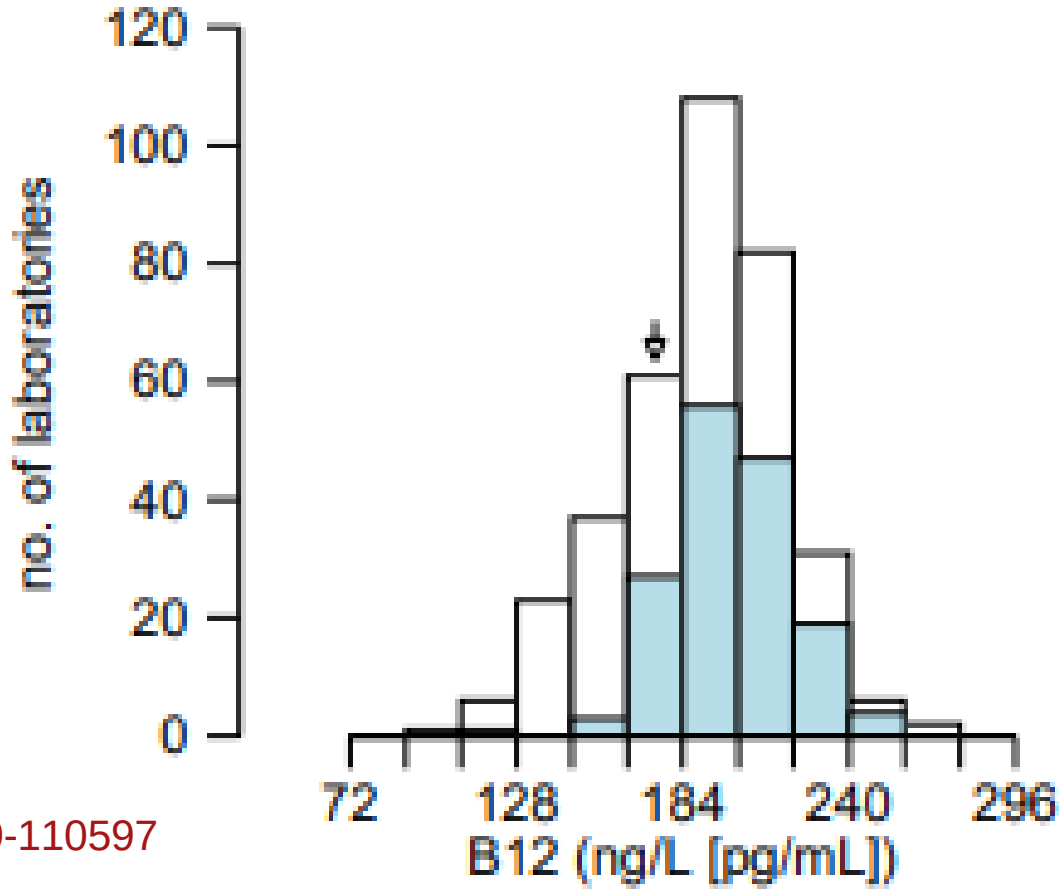
Standard sample

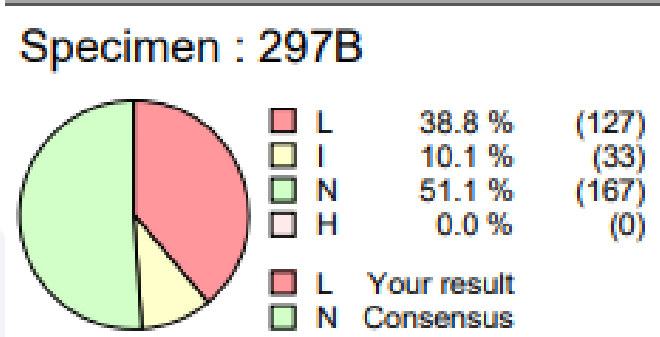
172 ng/L: LOW

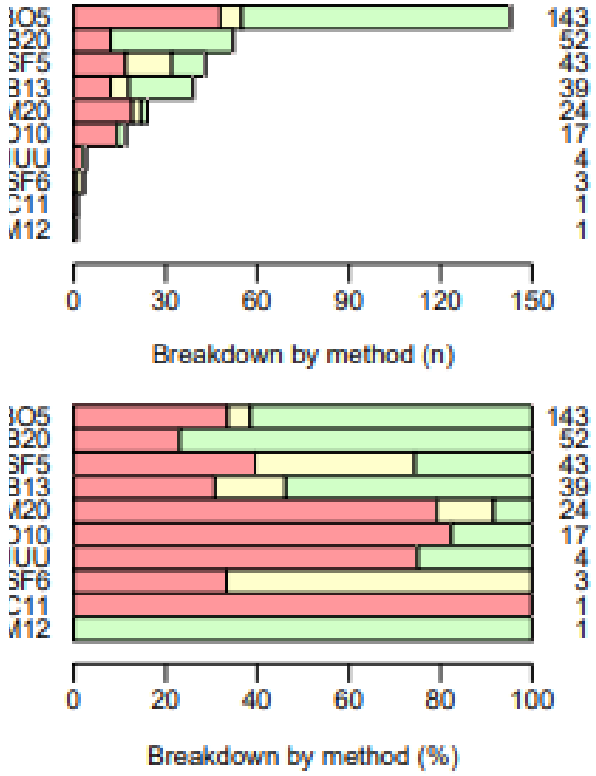
Range:

115-250 ng/L

51% interpreting this sample as normal







Mackenzie, 2018
DOI: 10.1182/blood-2018-99-110597

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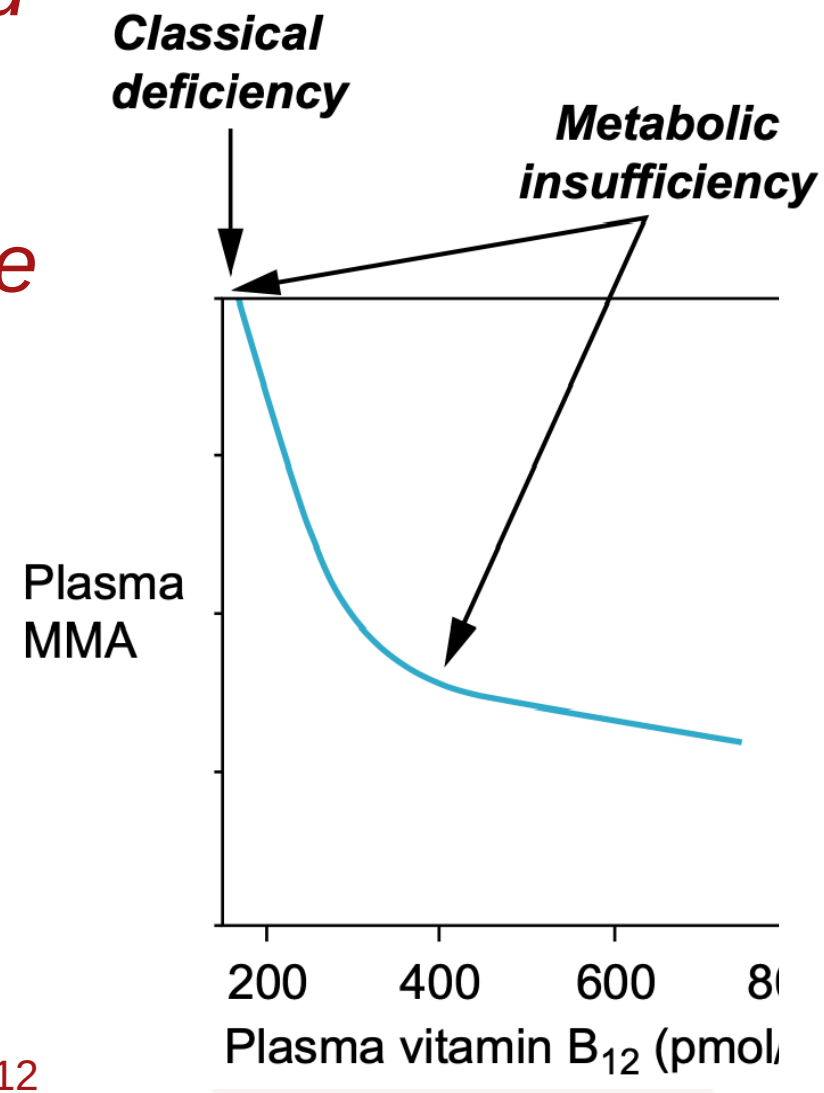
C&P Diabetes LES, 13/9/23

'Do we need to reconsider the desirable blood level of Vitamin B12?'



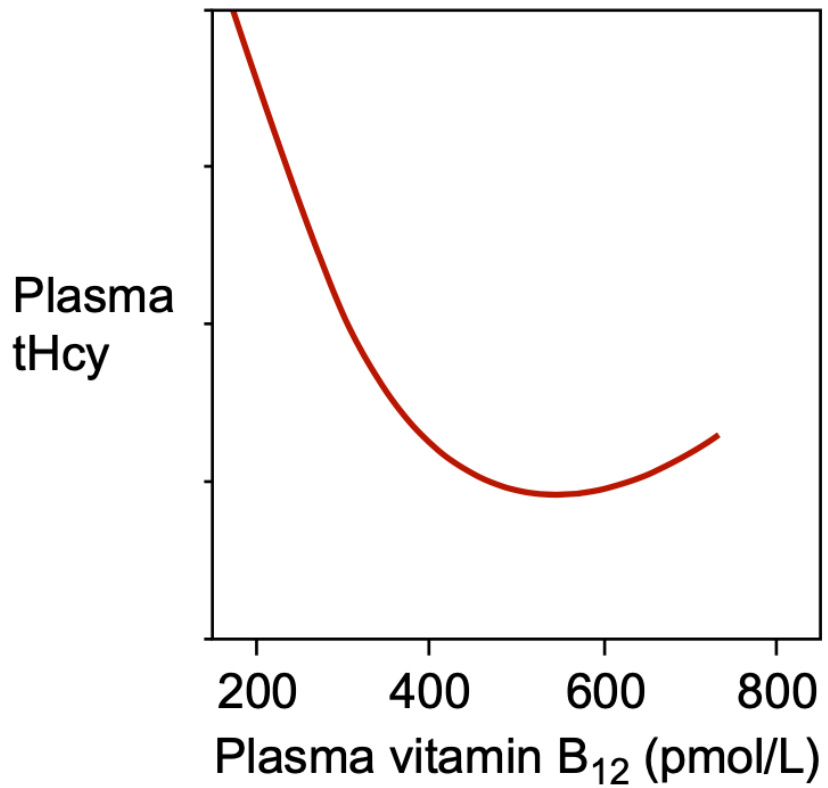


Fig. 3 Defining B_{12} inadequacy by use of markers of metabolic insufficiency. Relationship between plasma vitamin B_{12} and plasma total homocysteine (tHcy) or methylmalonic acid (MMA) in 3262 community-dwelling people aged 71–74 years in Norway. *Based on fig. 1 from Smith, A. D., & Refsum, H. (2012). Do we need to reconsider the desirable blood level of vitamin B12?* Journal of Internal Medicine, 271*(2), 179–182.*

Smith, 2012
DOI: 10.1111/j.1365-2796.2011.02485

NEJM 2012

Failures of Cobalamin Assays in Pernicious Anemia

TO THE EDITOR: Cobalamin (vitamin B_{12}) assays have been central to the diagnosis of clinical cobalamin deficiency such as pernicious anemia because the diagnostic sensitivities of older assays have been approximately 95%.[1] However, the competitive-binding luminescence assay (CBLA) replaced older microbiologic and radioisotope-dilution assays during the past decade. Few studies have compared these methods, and cobalamin CBLA has received less-focused scrutiny than older methods have received in the past. In 2000, a study showing that a CBLA failed to detect many low cobalamin levels[2] was disputed by the manufacturer.[3] A later article attributed similar

The New England Journal of Medicine
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Carmel, 2012
DOI: 10.1056/NEJMc1204070

Failures of Cobalamin Assays in Pernicious Anemia

NEJM 2012

The three CBLAs showed false normal values in 6 of 23 (26%), 5 of 23 (22%), and 8 of 23 (35%) serum samples, respectively, as compared with a radioisotope-dilution assay (P=0.03, P=0.06, and P=0.02) (Table 1). Five serum samples failed with

Carmel, 2012
DOI: 10.1056/NEJMc1204070

Table 1. Comparison of Cobalamin Results According to Assay in 23 Cobalamin–Deficient Patients with and without Anti–Intrinsic Factor Antibodies.*

Serum Sample No.	Anti–Intrinsic Factor Antibodies	Radioisotope-Dilution Assay	Competitive-Binding Luminescence Assay			Cause of Cobalamin Deficiency
			No. 1†	No. 2‡	No. 3§	
			cobalamin level — ng/liter			
1	Negative	0	56	94	86	Pernicious anemia
2	Negative	10	65	106	114	Malabsorption of cobalamin in food¶
3	Negative	13	75	72	116	Pernicious anemia
4	Negative	23	20	87	116	Veganism¶
5	Negative	25	0	60	105	Pernicious anemia
6	Negative	25	30	83	106	Postgastrectomy state¶
7	Negative	60	97	167	173	Pernicious anemia
8	Negative	149	155	215	200	Pernicious anemia
9	Positive	0	29	88	103	Pernicious anemia
10	Positive	3	0	57	97	Pernicious anemia
11	Positive	12	239	71	181	Pernicious anemia
12	Positive	17	2	66	129	Pernicious anemia
13	Positive	53	92	141	288	Pernicious anemia
14	Positive	64	123	158	170	Pernicious anemia
15	Positive	88	258	352	313	Pernicious anemia
16	Positive	97	126	185	161	Pernicious anemia
17	Positive	120	126	186	175	Pernicious anemia
18	Positive	127	118	202	206	Pernicious anemia
19	Positive	151	247	234	270	Pernicious anemia
20	Positive	158	268	263	303	Pernicious anemia
21	Positive	162	259	322	306	Pernicious anemia
22	Positive	165	147	216	219	Pernicious anemia
23	Positive	172	188	234	269	Pernicious anemia

ACBNews
The Association for Clinical Biochemistry | Issue 600 | April 2013

False normal B12 Results and Risk of Neurological Damage

UK NEQAS Haematinics is keen to publicise their concerns on problems with current
B12 assays which may be vulnerable to interference resulting in normal values despite severe cobalamin deficiency. The Committee advises that where there is a discordance between the clinical features of neuropathy such as parasthesiae, loss of joint position sense, or megaloblastic anaemia and a "normal" B12 result, clinicians are advised to request storage of serum for further testing and are advised to treat the patient with
B12 replacement therapy.

Further testing may include repeat testing by an alternative B12 assay, holotranscobalamin assay, serum methylmalonic acid and measurement of intrinsic factor antibody. Treatment with
B12 should not be delayed to avoid progression of neurological damage.

For further information please see this recent paper:

Carmel R, Argawal YP. Failures of cobalamin assays in pernicious anemia. *NEJM* 2012 367: 4; 385-386.

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False normal B12 Results and Risk of Neurological Damage

'UK NEQAS Haema.nics is keen to publicise their concerns on problems with current B12 assays which may be vulnerable to interference resul.ng in normal values despite severe cobalamin deficiency. The Commilee advises that where there is a discordance between the clinical features of neuropathy such as parasthesiae, loss of joint posi.on sense, or megaloblas.c anaemia and a "normal" B12 result, clinicians are advised to request storage of serum for further tes.ng and are advised to treat the pa.ent with B12 replacement therapy. Further tes.ng may include repeat tes.ng by an alterna.ve B12 assay, holotranscobalamin assay, serum methylmalonic acid and measurement of intrinsic factor an.body. Treatment with B12 should not be delayed to avoid progression of neurological damage'

UK NEQAS HaemaGnics , 2013

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International Quality Expertise

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OXFORD ACADEMIC | Journals | Books

Clinical Chemistry

ADLM

Volume 50, Issue 8
1 August 2004
Cover image

ISSN 0009-9147
EISSN 1530-8561

Urinary Methylmalonic Acid Test May Have Greater Value than the Total Homocysteine Assay for Screening Elderly Individuals for Cobalamin Deficiency

Eric J. Norman

Norman Clinical Laboratory, Inc.
1044 Sunwood Ct.
Cincinnati, OH 45231
E-mail ejnormanncl@aol.com

DOI: 10.1373/clinchem.2004.035790

Norman, 2004
DOI: 10.1373/clinchem.2004.035790

Urinary Methylmalonic Acid Test May Have Greater Value than the Total Homocysteine Assay for Screening Elderly Individuals for Cobalamin Deficiency

- The UMMA test appears to meet the criteria for an acceptable screening test and is the only cobalamin-deficiency assay that has been validated as a screening tool

- Because of the high prevalence of cobalamin deficiency in senior popula;ons, UMMA screening could spare many from permanent neurologic disability and fatal cardiovascular disease

Norman, 2004
DOI: 10.1373/clinchem.2004.035790

Scandinavian Journal of Clinical & Laboratory Investigation, 2011; 71: 432–438

informa
healthcare

Hvas, 2011
DOI: 10.3109/00365513.2011.581389

ORIGINAL ARTICLE

The vitamin B12 absorption test, CobaSorb, identifies patients not requiring vitamin B12 injection therapy

ANNE-METTE HVAS[1], ANNE L. MORKBAK[2,3], TORE F. HARDLEI[1,3] & EBBA NEXO[3]

[1]*Department of Clinical Biochemistry, Aarhus University Hospital, Skejby,* [2]*The Fertility Clinic Dronninglund, Department of Gynecology and Obstetrics, Aarhus University Hospital, Dronninglund Sygehus, and* [3]*Department of Clinical Biochemistry, Aarhus University Hospital, Aarhus Sygehus, Denmark*

- Treatment with vitamin B12 has virtually no side effects; however, life-long treatment is inconvenient for the patient and constitutes a cost for society

- Our results suggest that the capacity for absorbing vitamin B12 should be examined prior to the choice of treatment

Outline

- Biological Anthropology
- B12 Deficiency (B12d)
- ExacerbaFng Factors in the 21st Century
- Underdiagnosis
- Undertreatment
- Diabetes
- Reawakening
- club-12

Mr P Julian
Owen C&P Diabetes LES,
13/9/23

NICE National Institute for Health and Care Excellence

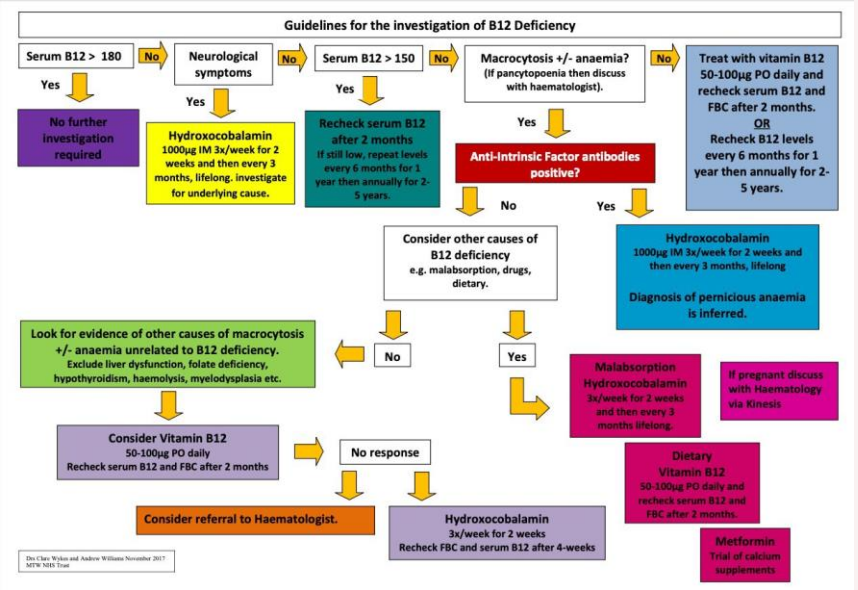
NICE > CKS > Health topics A to Z > Anaemia - B12 and folate deficiency

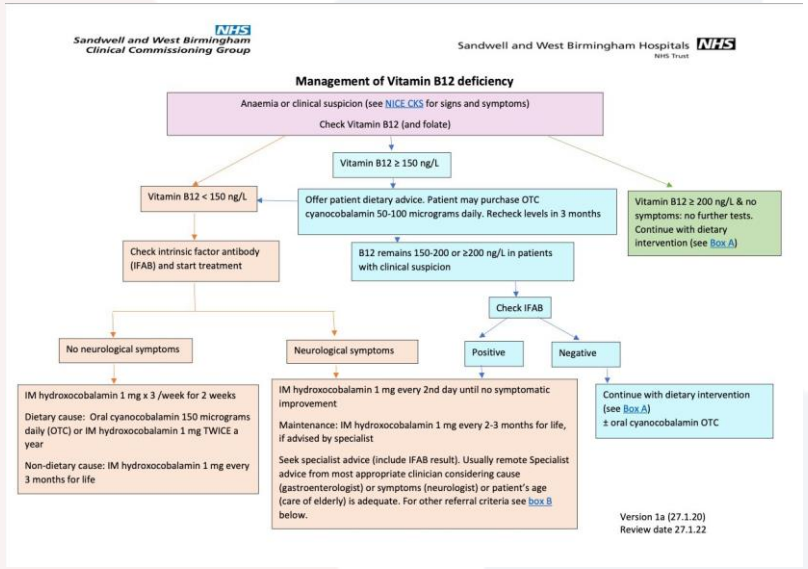
- Treatment of B12 deficiency in people with neurologic involvement should include:
  - Seeking urgent specialist advice from a haematologist.
  - If specialist advice is not immediately available, initially treating with hydroxocobalamin 1 mg intramuscularly on alternate days until there is no further improvement, then hydroxocobalamin 1 mg intramuscularly every 2 months should be considered.

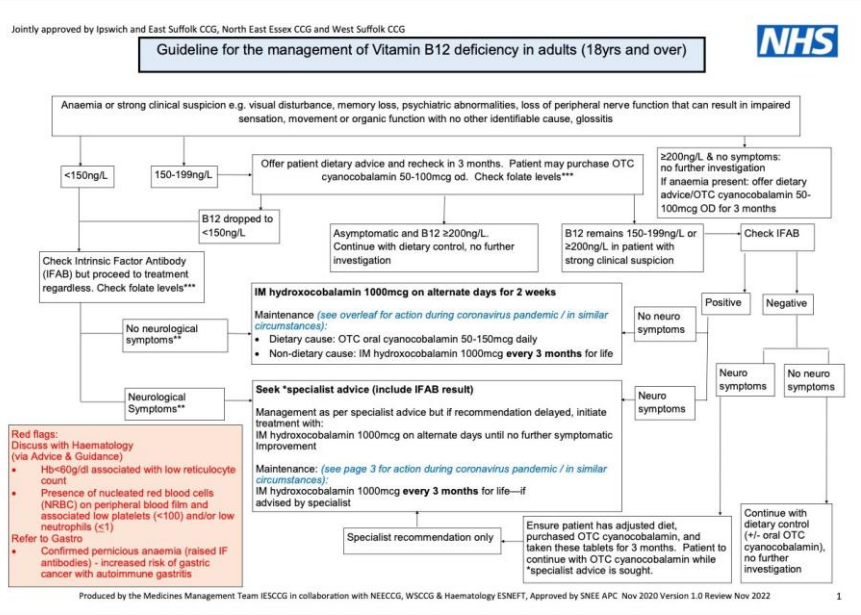
cks.nice.org.uk/anaemia-b12-and-folate-deficiency#!scenarioRecommendation

CCG / ICS B12d Management Pathways

All different; some examples







No national pathway!

www.mtw.nhs.uk/wp-content/uploads/2017/12/Investigation-and-Management-of-B12-Deficiency.pdf

sandwellandwestbhamccgformulary.nhs.uk/docs/

ipswichandeastsuffolkccg.nhs.uk/Portals/1/Content/Members%20Area/Clinical%20Area/Medicine%20managment/Medical%20conditions/Bone%20Health/Guideline%20for%20the%20management%20of%20Vitamin%20B12%20deficiency%20(in%20adults)%20November%202020.pdf

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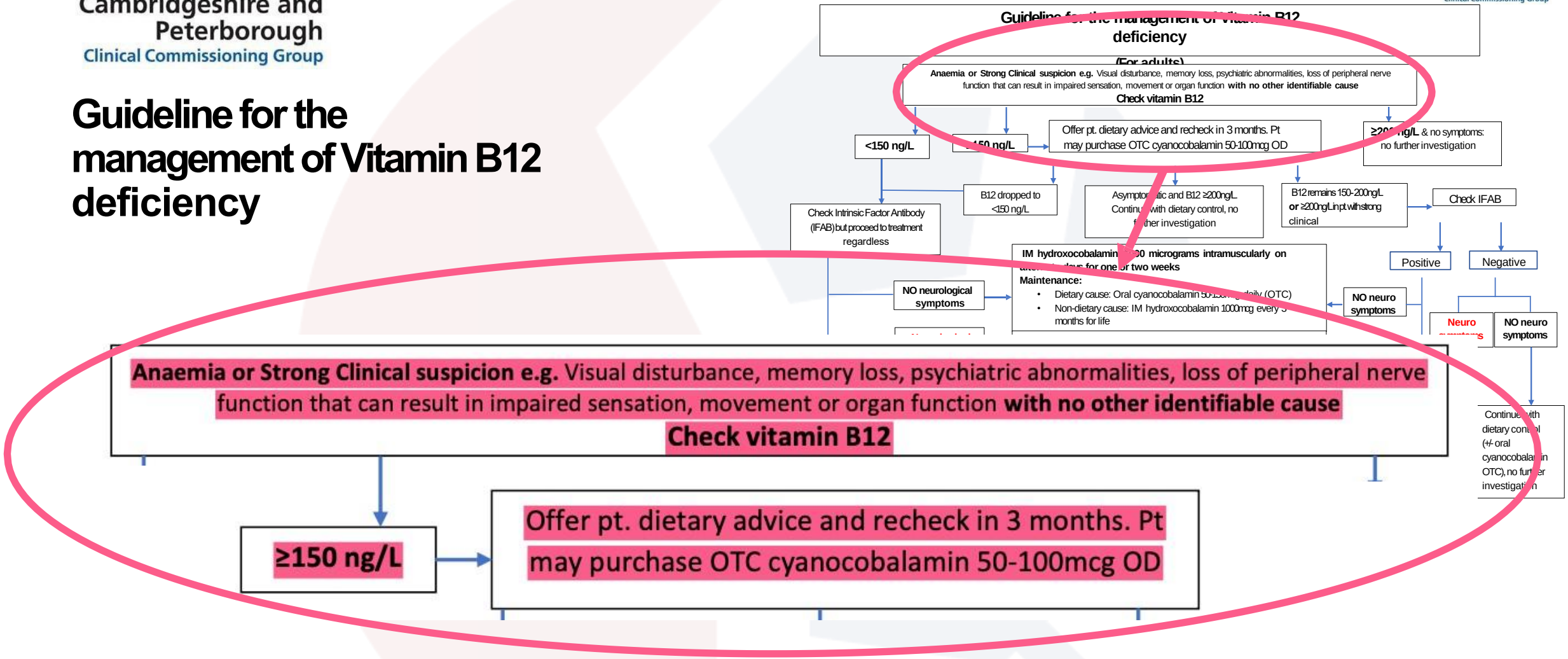
Clinical Commissioning Group

Guideline for the management of Vitamin B12 deficiency



www.cambridgeshireandpeterboroughccg.nhs.uk/easysiteweb/getresource.axd?assetid=18660&type=0&servicetype=1

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St Thomas' Hospital Functional Vitamin B12 Deficiency in Patients With Crohn's Disease

'This study demonstrates that assessing B12 status in patients with CD using holoTC and MMA identifies impaired B12 status in patients otherwise considered replete with traditional serum testing'

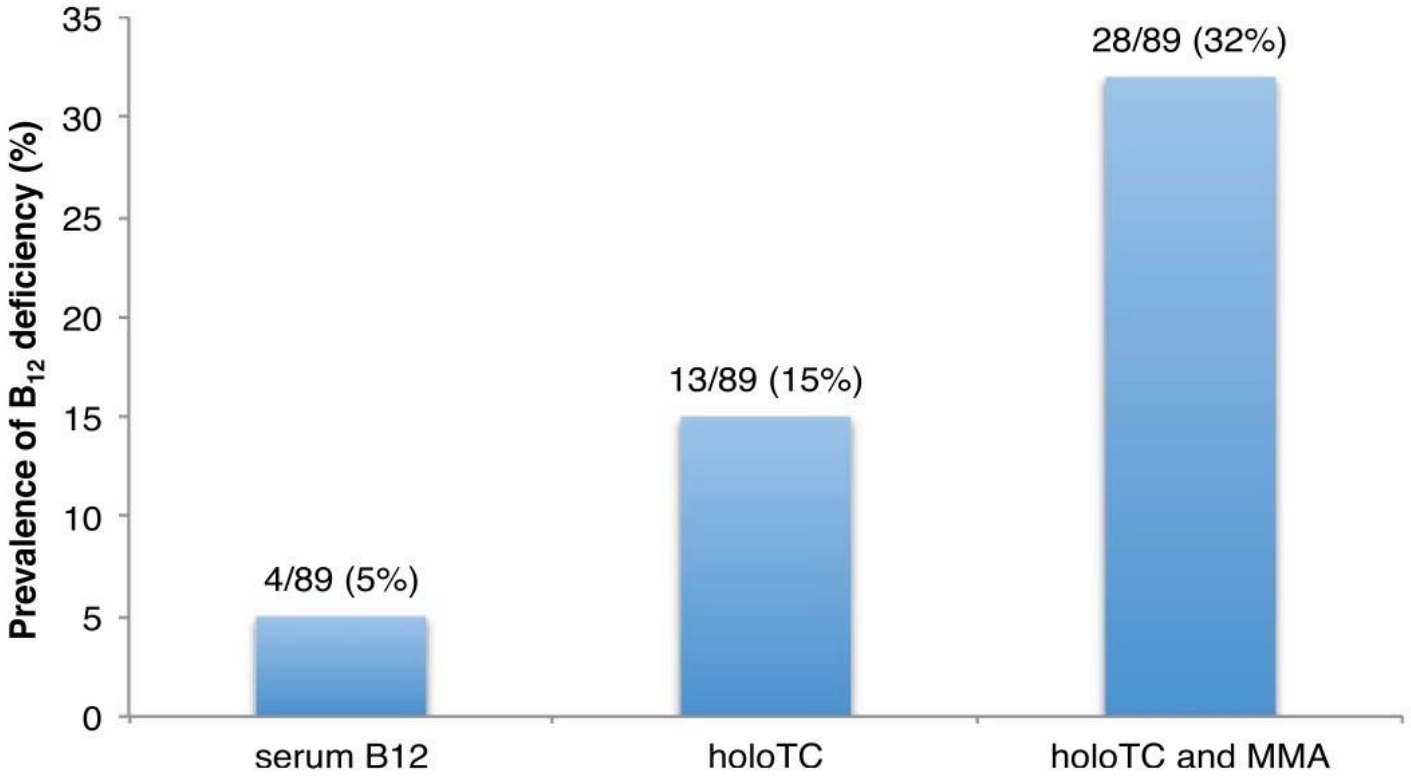


FIGURE 1. Prevalence of B_{12} deficiency using different tests.

Ward, 2015
DOI: 10.1097/MIB.0000000000000559

Patient safety, self-injection, and B12 deficiency:

a UK cross-sectional survey

BJGP 2022

'Patient safety is a recognised concern in primary care especially for marginalised groups such as people with vitamin B12 deficiency'

'The most common contributory factors to safety in primary care are the quality of communication, diagnostics, and medication management'

Tyler2022
DOI: 10.3399/BJGP.2021.0711

Conclusion

To the authors' knowledge, this is the largest study to date examining patient safety and vitamin B12 deficiency. It found that four out of 10 patients with B12 deficiency self-medicate via injection. Patients who self-medicated perceived primary care as less safe. Providing patient-centred care and treating these patients with dignity and respect is a policy priority to reduce unsafe health behaviours.

cnr
CLINICAL NUTRITION RESEARCH

The Effect of Vitamin B12 and Folic Acid Supplementation on Serum Homocysteine, Anemia Status and Quality of Life of Patients with Multiple Sclerosis

Ehsan Nozari,[1] **Saied Ghavamzadeh**,[1] **Nazanin Razazian**[2]

[1]Department of Nutrition, Medicine Faculty, Urmia University of Medical Sciences, Urmia, Iran
[2]Department of Neurology, Medicine Faculty, Kermanshah University of Medical Sciences, Kermanshah, Iran

Nozari, 2019
DOI: 10.7762/cnr.2019.8.1.36

- ‘vitamin group received 5 mg folic acid tablet daily and 3 doses of vitamin B12 (1,000 mcg) injection and the other group received placebo’

- ‘a significant improvement in the mental field of life quality in the placebo. . . whereas both physical and mental fields of quality of life were improved significantly in the vitamin group’

Behandlingsrespons ved B_{12}-vitamin-mangel afhænger af det anvendte B_{12}-vitamin-præparat

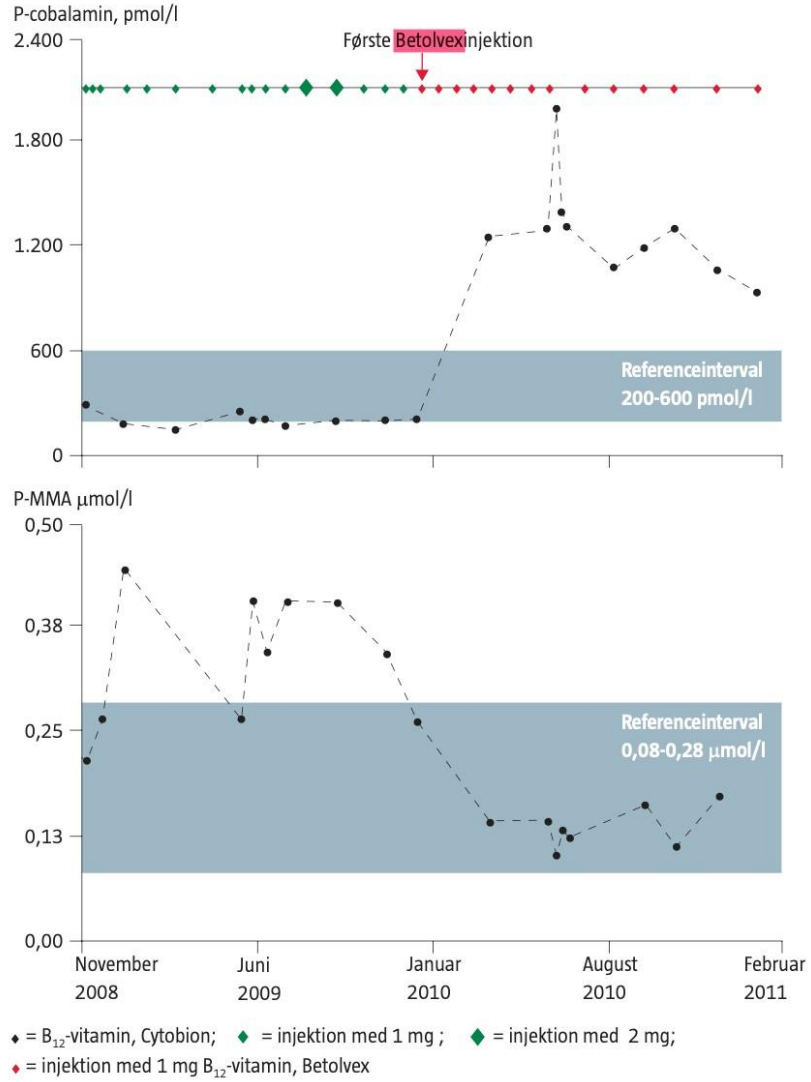
Johan Arendt & Ebba Nexø

Maintenance therapy in pernicious anaemia with a depot vitamin-B-12-complex prepara%on

Arendt, 2011
PMID: 22027161

FIGUR 1

Plasma (P)-cobalamin og methylmalonsyre (MMA) hos en patient med vitamin B_{12}-mangel under behandling med Cytobion (cyanocobalamin i vandig opløsning) og Betolvex (cyanocobalamin i oliesuspension).



PULSE

At the heart of general practice since 1960

Overdiagnosis: B12 deficiency

07 September 2023

As part of our series on conditions that may be overdiagnosed, GP partner and trainer Dr *David Coleman* considers why and when we might be placing too much stock on vitamin B12 deficiency

- 'many clinicians feel B12 deficiency is often overdiagnosed'
- 'our approach in general practice is inconsistent and that diagnoses will be missed and inappropriately made'

- 'Where I practise in Doncaster4, if the patient has neurological symptoms or anaemia and a B12 level of <187ng/L we would diagnose vitamin B12 deficiency and treat accordingly with IM injections'
- 'Without clear symptoms, a level of 150-187ng/L would trigger a repeat test and an oral trial of treatment only if the borderline low result persisted'
- 'Serum vitamin B12 assay has a sensitivity of around 97% at levels below 200 ng/L'
- I would recommend

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Owen C&P Diabetes LES, 13/9/23

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07 September 2023

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I would recommend…

1. ‘make sure all clinicians are aware of the latest local guidelines for testing and diagnosis’
2. ‘identify if the diagnostic guidelines were followed. If not, consider pausing treatment and retesting’

David Coleman is a GP partner and trainer in Doncaster, South Yorkshire

NHS Cambridge University Hospitals NHS Foundation Trust

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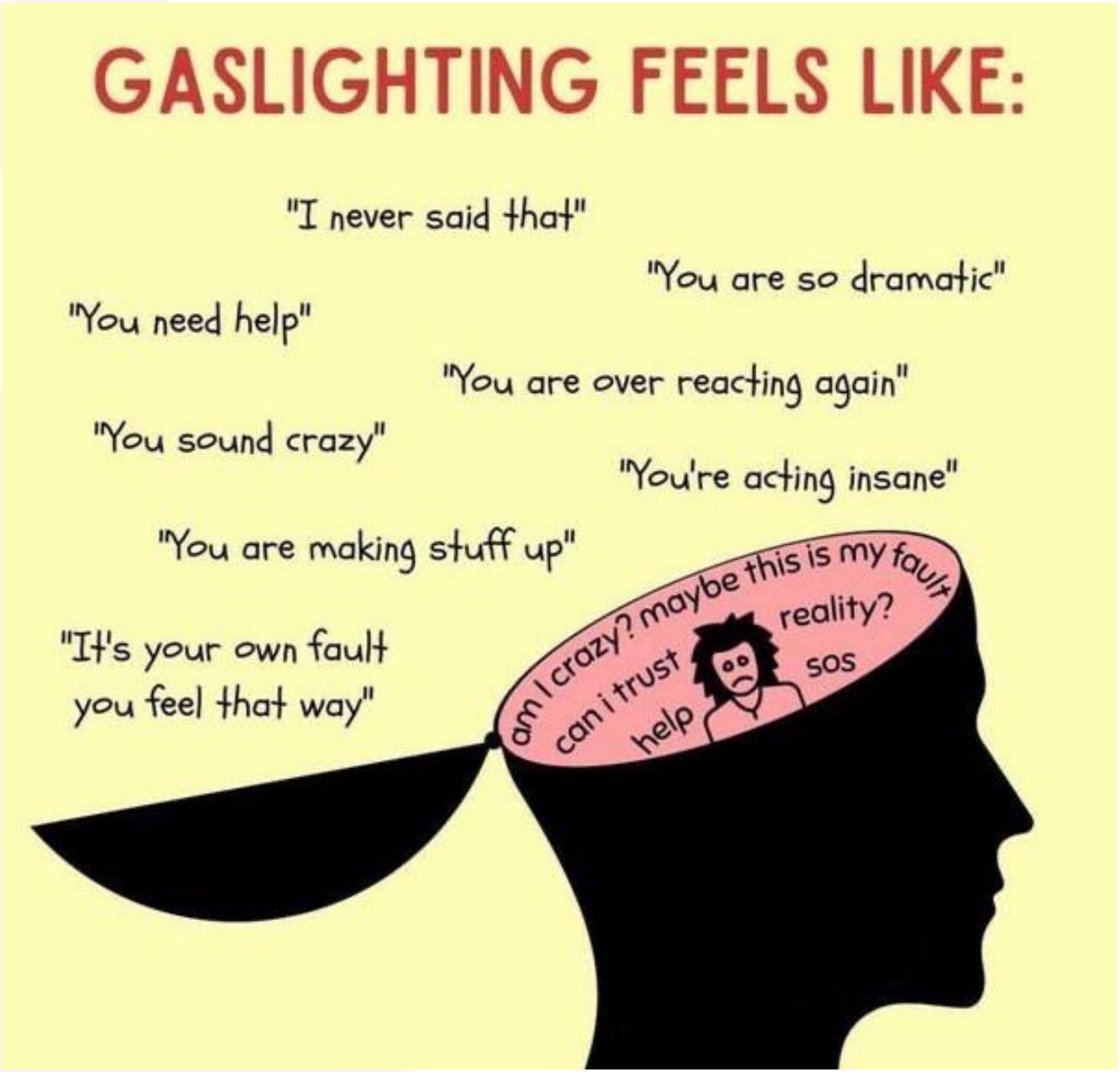
Mr P Julian Owen
C&P Diabetes LES, 13/9/23

B12: Pacebo or is there a risk of healthcare professionals GaslighGng?



Key Point

An over-reliance on a 'Serum B12' Competitive Binding Luminescent Assay (CBLA) with a 35% sensitivity for Vitamin B12 Deficiency (B12d) has led to a National Health Service that under-diagnoses and under-treats B12d, a known comorbidity in a broad-spectrum of health conditions'

Outline

- Biological Anthropology
- B12 Deficiency (B12d)
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- Underdiagnosis
- Undertreatment
- Diabetes
- Reawakening
- club-12

Mr P Julian Owen

THE JOURNAL OF CLINICAL NUTRITION

VOLUME 1, NUMBER 6 SEPTEMBER–OCTOBER, 1953

VITAMIN B_{12} *Excretion and* DIABETIC RETINOPATHY

By BERNARD BECKER, M.D., CALVIN A. LANG, A.B., AND BACON F. CHOW, PH.D.

TABLE III

Urinary Excretion after Injection of Vitamin B_{12} (50 μg.)

Subjects	No. of subjects	Vitamin B_{12} excreted ($\bar{x} \pm SE$)*
		μg.
Diabetics without retinopathy	13	4.2 ± 1.7
Diabetics with retinopathy	22	19 ± 2.1
Healthy controls	6	9.6 ± 1.4

* ($\bar{x} \pm SE$)—Mean and standard error.

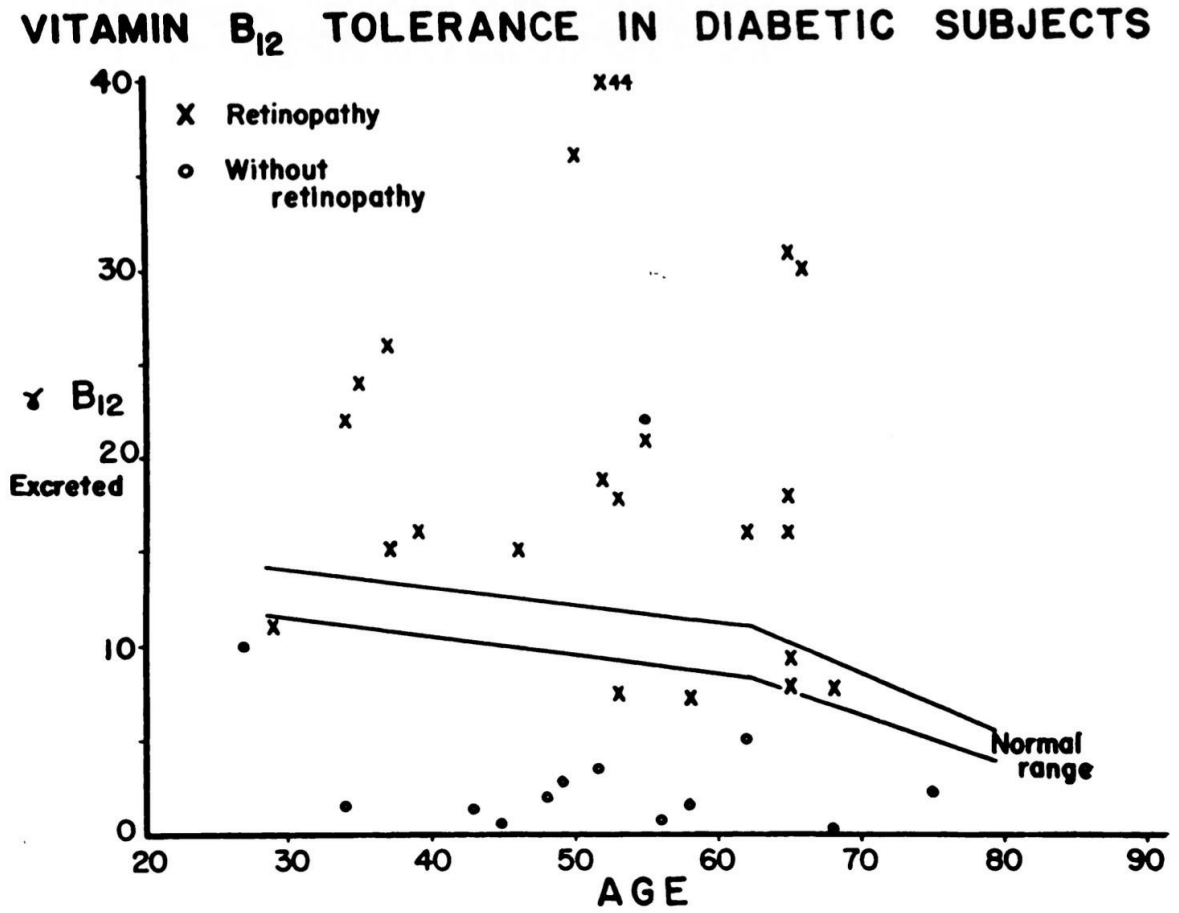


Fig. 1. The urinary excretion after intramuscular injection of vitamin B_{12}.

'diabe'cs with re'nopathy excreted an average of approximately 19 µg. of vitamin B12, and subjects without re'nopathy excreted only 4.2 µg'

Becker, 1953
DOI: 10.1093/ajcn/1.6.417

Received July 26, 1954. P.S.E.B.M., 1954, v87.

Vitamin B_{12} Serum Levels and Diabetic Retinopathy.* (21277)

BACON F. CHOW, DAVID A. ROSEN, AND CALVIN A. LANG.

From the Department of Biochemistry, School of Hygiene and Public Health, The Johns Hopkins University and The Wilmer Institute, The Johns Hopkins Hospital, Baltimore, Md.

Chow, 1954
DOI: 10.3181/00379727-87-21277

'Data are presented to demonstrate that the serum levels of vit. B12 ac9vity in diabe9cs with or without re9nopathy are widely different'

'Those with the re9nal lesions have a much higher ac9vity (292+/-24) than those without re9nopathy (162+/-18). This difference is sta9s9cally significant'

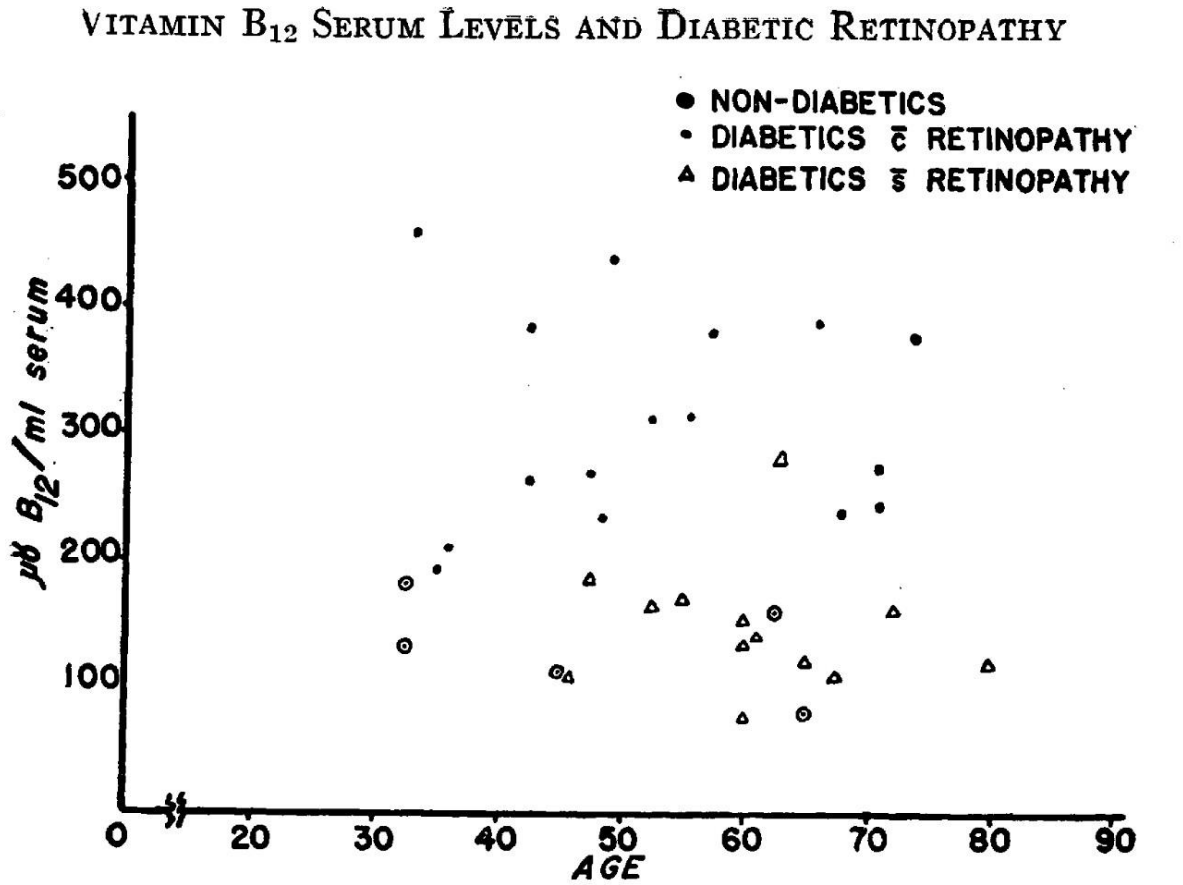


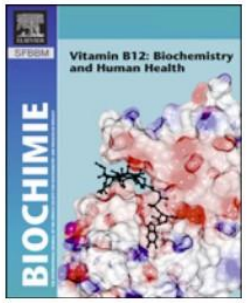
FIG. 1. Vitamin B_{12} levels in sera of diabetics with and without retinopathy.

Biochimie 95 (2013) 1056–1061

Contents lists available at SciVerse ScienceDirect

Biochimie

journal homepage: www.elsevier.com/locate/biochi



Research paper

Serum vitamin B12 not reflecting vitamin B12 status in patients with type 2 diabetes

Rima Obeid [a,*], John Jung [a], Julia Falk [b], Wolfgang Herrmann [a], Jürgen Geisel [a], Bettina Friesenhahn-Ochs [c], Frank Lammert [c], Klaus Fassbender [b], Panagiotis Kostopoulos [b]

[a] *Department of Clinical Chemistry, Saarland University Medical Centre, Homburg, Germany*
[b] *Department of Neurology, Saarland University Medical Centre, Homburg, Germany*
[c] *Department of Medicine II, Saarland University Medical Centre, Homburg, Germany*

Obeid, 2013
DOI: 10.1016/j.biochi.2012.10.028

Serum vitamin B12 not reflecting vitamin B12 status in patients with type 2 diabetes

- Pa;ents with type 2 diabetes showed normal extracellular vitamin B12, but disturbed intracellular B12-dependent biochemical reac;ons
- Concentra;ons of total vitamin B12 and holoTC did not differ significantly between the groups, but plasma MMA concentra;ons were significantly higher in diabe;cs (250 vs. 206 nmol/L)

Obeid, 2013
DOI: 10.1016/j.biochi.2012.10.028

Hindawi Publishing Corporation
Journal of Diabetes Research
Volume 2014, Article ID 921616, 6 pages
http://dx.doi.org/10.1155/2014/921616

Research Article

Urinary Methylmalonic Acid as an Indicator of Early Vitamin B12 Deficiency and Its Role in Polyneuropathy in Type 2 Diabetes

Ai-li Sun,[1] Yi-hong Ni,[1] Xiao-bo Li,[1] Xiang-hua Zhuang,[1] Yuan-tao Liu,[1] Xin-hua Liu,[2] and Shi-hong Chen[1,3]

[1] *The Second Hospital of Shandong University, 247 Beiyuan Street, Ji'nan, Shandong 250033, China*
[2] *Qingdao Haici Hospital, Qingdao 266033, China*
[3] *Department of Endocrinology, The Second Hospital of Shandong University, 247 Beiyuan Street, Ji'nan, Shandong 250033, China*

Sun, 2014
DOI: 10.1155/2014/921616

Table 2: Logistic analysis of influencing factors of diabetic polyneuropathy.

Parameters	OR value (95% CI)	*P* value
Age (year)	0.73 (0.84–1.08)	0.59
Duration (year)	1.543 (1.302–1.829)	0.045
Low-density lipoprotein cholesterol (mmol/L)	0.76 (0.63–0.89)	0.587
High-density lipoprotein cholesterol (mmol/L)	1.03 (0.81–1.42)	0.407
Triglycerides (mmol/L)	0.27 (0.11–0.36)	0.816
Serum creatinine (umol/L)	1.15 (0.79–1.54)	0.313
HbA1c (%)	1.19 (0.85–1.43)	0.254
Mean corpuscular volume (fL)	0.18 (0.11–0.25)	0.884
Hemoglobin (g/L)	0.99 (0.70–1.27)	0.458
Ferritin (ug/L)	1.08 (0.93–1.21)	0.340
Folic acid (ng/L)	0.92 (0.86–0.96)	0.532
Urinary methylmalonic acid/creatinine (mmol/mol)	4.07 (3.15–5.46)	0.001
Blood methylmalonic acid (pg/mL)	2.152 (1.799–2.42)	0.02
Vitamin B12	0.88 (0.794–0.997)	0.547
Holotranscobalamin (pmol/L)	3.89 (2.77–4.56)	0.003

Sun, 2014
DOI: 10.1155/2014/921616

Medicines & Healthcare products Regulatory Agency

Drug Safety Update

Latest advice for medicines users

The monthly newsletter from the Medicines and Healthcare products Regulatory Agency and its independent advisor the Commission on Human Medicines

Volume 15 Issue 11 June 2022

Contents

Metformin and reduced vitamin B12 levels: new advice for monitoring patients at risk:

- Decreased vitamin B12 levels, or vitamin B12 deficiency, is now considered to be a common side effect in paGents on meMormin treatment, especially in those receiving a higher dose or longer treatment duraGon and in those with exisGng risk factors
- We are therefore advising checking vitamin B12 serum levels in paGents being treated with meMormin who have symptoms suggesGve of vitamin B12 deficiency
- We also advise that periodic monitoring for paGents with risk factors for vitamin B12 deficiency should be considered

Medicines and Healthcare products Regulatory Agency
Drug Safety Update volume 15, issue 11: June 2022: 1.
https://www.gov.uk/drug-safety-update/metformin-and-reduced-vitamin-b12-levels-new-advice-for-monitoring-patients-at-risk

Advice for healthcare professionals:

- me#ormin can commonly reduce vitamin B12 levels in pa6ents, which may lead to vitamin B12 deficiency
- the risk of low vitamin B12 levels increases with higher me#ormin dose, longer treatment dura6on, and in pa6ents with risk factors for vitamin B12 deficiency
- test vitamin B12 serum levels if deficiency is suspected (for example, in pa6ents presen6ng with megaloblas6c anaemia or new-onset neuropathy) and follow current clinical guidelines on inves6ga6on and management of vitamin B12 deficiency (for example, see Clinical Knowledge Summary from NICE)
- consider periodic vitamin B12 monitoring in pa6ents with risk factors for vitamin B12 deficiency (see list of risk factors in ar6cle)
- administer correc6ve treatment for vitamin B12 deficiency in line with current clinical guidelines; con6nue me#ormin therapy for as long as it is tolerated and not contraindicated
- report supected adverse drug reac6ons associated with me#ormin on a Yellow Card

Medicines and Healthcare products Regulatory Agency
Drug Safety Update volume 15, issue 11: June 2022: 1.
https://www.gov.uk/drug-safety-update/metformin-and-reduced-vitamin-b12-levels-new-advice-for-monitoring-patients-at-risk

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

Product informa6on update

- The current literature suggest that the frequency of this adverse drug reaction is higher than previously thought
- The Glucophage product information for healthcare professionals and patients has now been updated to state that vitamin B12 deficiency is a common adverse drug reaction, and may affect up to 1 in 10 people who take it.
- The product information has also been updated to note that the risk of this adverse reaction occurring increases with increasing metformin dose and treatment duration and in patients with risk factors known to cause vitamin B12 deficiency.

Medicines and Healthcare products Regulatory Agency
Drug Safety Update volume 15, issue 11: June 2022: 1.
https://www.gov.uk/drug-safety-update/metformin-and-reduced-vitamin-b12-levels-new-advice-for-monitoring-patients-at-risk

Summary 1: Diabetes, MeKormin & B12d

MHRA 2022

- ‘vitamin B12 deficiency, is now considered to be a common side effect in paSents on meTormin’
- ‘advising checking vitamin B12 serum levels in paSents being treated with meTormin who have symptoms suggesSve of vitamin B12 deficiency’
- ‘periodic monitoring for paSents with risk factors for vitamin B12 deficiency should be considered’

The Science

- Sole measurement of plasma vitamin B12 is no longer enough to idenSfy vitamin B12 (B12) deficiency
- When plasma vitamin B12 is in the low-normal range, especially between 201 and 350 ng/L, B12 deficiency should be assessed by measurements of plasma homocysteine and/or plasma methylmalonic acid (MMA)

Summary 2: Diabetes, Metformin & B12d

The Science 2

- uMMA/C is a promising biomarker to assess vitamin B12 status in doubtful cases, notably during renal impairment
- Urinary methylmalonic acid correlates with serum vitamin B12 levels in person with diabetes and is a sensitive marker of early polyneuropathy
- The UMMA test appears to meet the criteria for an acceptable screening test and is the only cobalamin-deficiency assay that has been validated as a screening tool

Should C&P ICS introduce uMMA/C to screen for B12d in 'at risk' groups such as DiabeEcs?

Key Points

- *In Diabetes B12 not geMng into the cells so effecOvely*
- *More of the injected B12 is lost in the Urine*
- *Raising serum B12 is just the start*
- *GeMng MMA down is the goal*

Outline

- Biological Anthropology
- B12 Deficiency (B12d)
- ExacerbaFng Factors in the 21st Century
- Underdiagnosis
- Undertreatment
- Diabetes
- Reawakening
- club-12

Mr P Julian Owen

medRxiv
THE PREPRINT SERVER FOR HEALTH SCIENCES

Cold Spring Harbor Laboratory · BMJ · Yale

Follow this preprint

Transcobalamin Receptor Autoantibodies in Central Vitamin B12 Deficiency

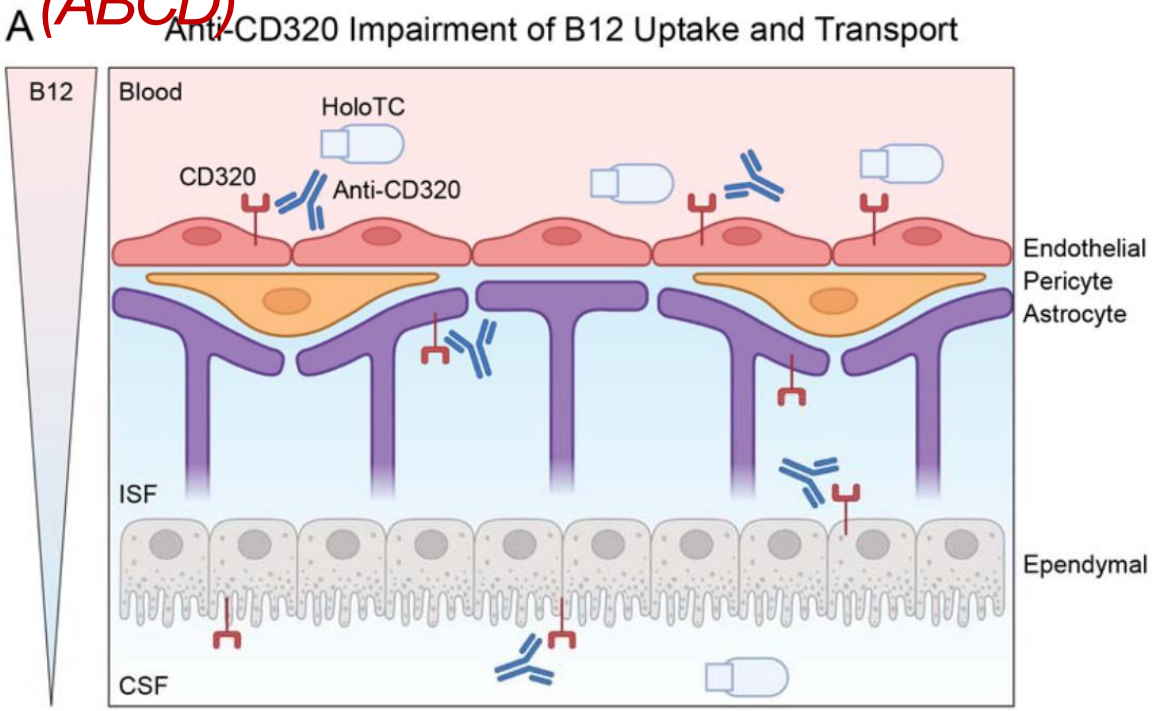
John V. Pluvinage, Thomas Ngo, Christopher M. Bartley, Aaron Bodansky, Bonny D. Alvarenga, Kelsey C. Zorn, Camille Fouassier, Colin Zamecnik, Adrian McCann, Trung Huynh, Weston Browne, Asritha Tubati, Sravani Kondapavulur, Mark S. Anderson, Ari J. Green, Ralph Green, Vanja Douglas, Martineau Louine, Bruce Cree, Stephen Hauser, William Seeley, Brandon B. Holmes, James A. Wells, Serena Spudich, Shelli Farhadian, Prashanth Ramachandran, Leslie Gillum, Chadwick M. Hales, Bryan Smith, Avindra Nath, Gina Suh, Eoin P. Flanagan, Jeffrey M. Gelfand, Joseph L. DeRisi, Samuel J. Pleasure, Michael R. Wilson

doi: https://doi.org/10.1101/2023.08.21.23294253

'Vitamin B12 is critical for hematopoiesis and myelination. Deficiency can cause neurologic deficits including loss of coordination, spasticity, and cognitive decline'

'diagnosis relies on vitamin B12 measurement in the blood which may not accurately reflect levels in the brain'

'we discovered an autoimmune cause of vitamin B12 deficiency restricted to the central nervous system (CNS), termed autoimmune B12 central deficiency (ABCD)'



Pluvenage, 2023
DOI: 10.1101/2023.08.21.23294253

NHS Cambridge University Hospitals NHS Foundation Trust · Cambridgeshire & Peterborough Integrated Care System · GIRFT GETTING IT RIGHT FIRST TIME · CORE20PLUS5 · CLUB-12

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

Outline

- Biological Anthropology
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- Reawakening
- club-12

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

Why's an Orthopaedic Surgeon focused on Vitamin B12?

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

Dunn NutriCon Unit

Milton Road

- Studied at the Dunn Nutrition Unit
- Examined in Food & Human Nutrition for Medical Sciences BSc at Cambridge University

NHS Cambridge University Hospitals NHS Foundation Trust

Cambridgeshire & Peterborough Integrated Care System

GIRFT GETTING IT RIGHT FIRST TIME

CORE20PLUS5

CLUB-12

Mr P Julian
Owen C&P Diabetes LES,
13/9/23

Georgina Elizabeth Owen
1998-2019

Followed a 'Vegan Lifestyle' for 3.5 years

Sporadically replenished Vitamin B12

Restarted 1mg Methyl Cobalamin spray aMer 6 month's without

Three weeks later she took her own life suffering an 'acute delusional episode' 21/9/19

Coroner found elevated 'Serum MMA'

NHS Cambridge University Hospitals NHS Foundation Trust

Cambridgeshire & Peterborough Integrated Care System

GIRFT GETTING IT RIGHT FIRST TIME

CORE20PLUS5

CLUB-12

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

CLUB-12

Formed in January 2020

'to facilitate the sharing of knowledge and coordinate research into Vitamin B12 between Scientists and Healthcare Professionals'

NHS Cambridge University Hospitals NHS Foundation Trust

Cambridgeshire & Peterborough Integrated Care System

GIRFT GETTING IT RIGHT FIRST TIME

CORE20PLUS5

CLUB-12

Aims & ObjecGves of cluB-12:

- SGmulate discussion on the uncertainGes surrounding Vitamin B-12
- Promote and encourage research into all aspects of Vitamin B-12 metabolism
- Encourage mulG-disciplinary conversaGons about Vitamin B-12
- Disseminate research findings to clinicians and the wider public

Mr P Julian
Owen C&P Diabetes LES,

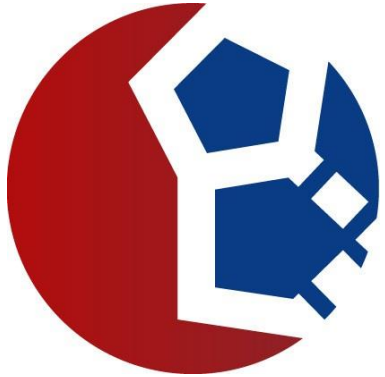
cluB-12
170+ Members

- Clinical Specialists
  - Neurology
  - Haematology
  - Psychiatry
  - Gastroenterology
  - Endocrinology
  - Obs & Gynae
  - Trauma & Orthopaedics
- Primary Care / GP
- Psychology
- Clinical Chemistry
- Biochemistry
- Genetics
- Charity & Lay Members

Some Notable Achievements

- C-19: BSH C-19 Guidance
- PA 'Task & Finish' Group, led by Dr Kourosh Ahmadi
- club-12 Members involved in NICE B12d & PA
- Supported 'James Lind Alliance' PSP
- Research Collaborations Formed
- EJN Paper – Plant Based Diets
- GiRFT B12
- NHS Patient Safety
- BMJ Therapeutics – In Preparation

Working with ChariAes: club-12's B12 Alliance



B12 institute

A Way Forward in C&P?

Update C&P B12d Pathway

- In collabora6on:
  - GiRFT
  - NICE
  - cluB-12
    - World Clinical Experts
    - B12-Alliance
- Include MMA
  - & make available to Primary Care
- Embrace:
  - Shared Decision Making
  - Personalized Medicine

Raise Awareness / Educate

- B12 is safe
  - Brittany Park, HCU Network America
- S/C B12 is safe
  - As used in Europe

Re-look at Depot B12

- Trial in C&P
  - NIHR JLA to Pump Prime

Monitor potential benefits

- Reduced Disease burden?
  - Dementia, Parkinson's, MS etc.
  - Anxiety, Depression, Psychosis

Mr P Julian Owen
C&P Diabetes LES, 13/9/23

A B12 Truth

To the stalwart liLle band of invesMgators of vitamin B12 - now more raMonally termed cobalamin - there is comfort in knowing that the stream of important scienMfic problems will never end

If the past is any guide to the future, they will be difficult problems inciting tumult and controversy, and in the end they will yield broad biologic insights and many surprises

William S. Beck MD.
1998

cluB-12's Committee
are delighted to announce as hosts

The 14th International Conference
One-Carbon Metabolism
B Vitamins and Homocysteine

17th-20th September 2023

The Old Divinity School, St John's College
Cambridge, UK

HCY2023

CLUB-12

https://www.club-12.org/hcy2023

https://www.eventbrite.com/e/hcy2023-club-12-tickets-668178869987

Thank you

Please do contact me for further information

Mr P. Julian Owen

FRCS Tr&Orth

julian.owen@nhs.net

julian@club-12.org

www.club-12.org

Cambridgeshire & Peterborough
Integrated Care System

Vascular Disease in the patients with Diabetes

Mr Andrew Busuttil, Mr Gail Curran

NHS
Cambridge University Hospitals
NHS Foundation Trust

Diabetes LES Session - Vascular surgery

Mr Andrew Busuttil MD PhD FRCS - Consultant vascular surgeon
Ms Gail Curran RN INP - Lead Vascular nurse NWAFT, President of the Society for Vascular nursing

Sept 2023

Peripheral Arterial disease

Cambridge University Hospitals NHS Foundation Trust

Chronic Presentation

Intermittent Claudication

- Pain in specific muscle group
- Brought on by exertion
- Released by rest
- Reproducible
- Angina of the legs

- Critical Limb Ischaemia
  - Pain at rest
  - Tissue loss
  - Very short IC distance (5-10 yards)
  - Perfusion pressure of less than 40mmHg

Peripheral Arterial disease

Chronic Presentation

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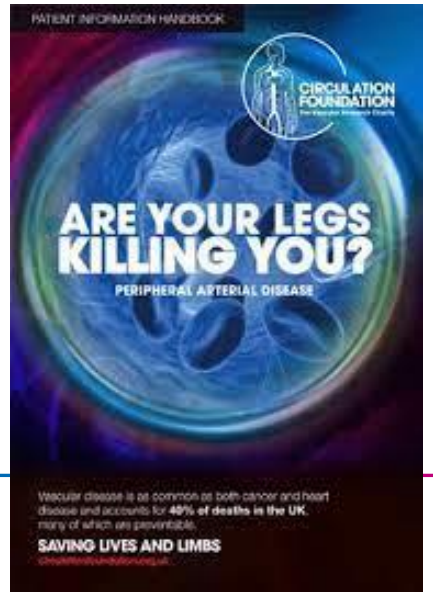


- Clinical assessment - identify risk factors
- Physical examination
- Blood pressure assessment
- HBA1C
- Starting HMGCo-A Reductase inhibitor
- Anti-platelet and/or Low dose NOAC
- Smoking cessation
- Exercise advice - healthy you

Peripheral Arterial disease

NHS
Cambridge University Hospitals
NHS Foundation Trust

Original article

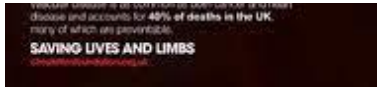
Risk of major amputation in patients with intermittent claudication undergoing early revascularization

J. Golledge[1,2,3,4], J. V. Moxon[1,2], S. Rowbotham[1,5,6], J. Pinchbeck[1], L. Yip[1], R. Velu[3,4], F. Quigley[4], J. Jenkins[6] and D. R. Morris[1,7]

[1]Queensland Research Centre for Peripheral Vascular Disease, College of Medicine and Dentistry, and [2]Australian Institute of Tropical Health and Cook University, [3]Department of Vascular and Endovascular Surgery, Townsville Hospital, and [4]Department of Vascular and Endovascular Surgery, Mater Hospital, Townsville, [5]School of Medicine, University of Queensland, Brisbane, and [6]Department of Vascular and Endovascular Surgery, Royal Brisbane and Women's Hospital, Herston, Queensland, Australia, and [7]Nuffield Department of Population Health, University of Oxford, Oxford, UK

Correspondence to: Professor J. Golledge, Director, Queensland Research Centre for Peripheral Vascular Disease, College of Medicine and Dentistry, James Cook University, Townsville, Queensland, Australia, 4811 (e-mail: Jonathan.Golledge@jcu.edu.au)

Screenshot

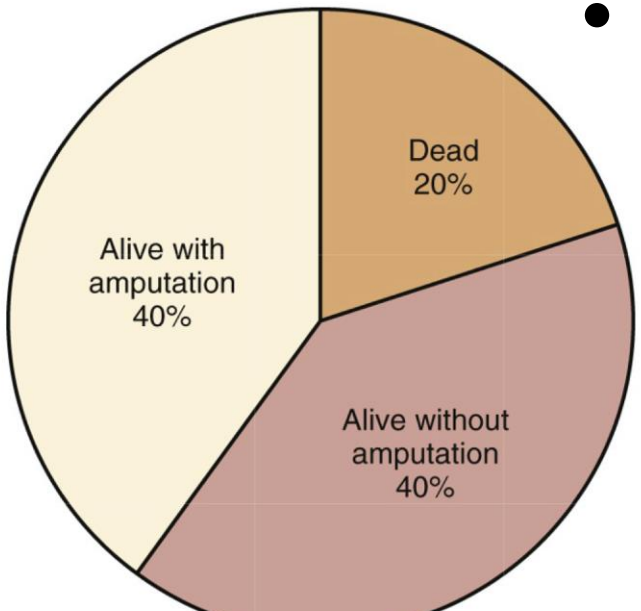


Peripheral Arterial disease

Chronic Presentation

- Urgent assessment - CLI clinic or early consultant review
- End stage disease
- Often need difficult revascularisation - MDT
- High risk of limb loss and death at 1 year

- Critical Limb Ischaemia
  - Pain at rest
  - Tissue loss
  - Very short IC distance (5-10 yards)
  - Perfusion pressure of less than 40mmHg



The Pulseless Foot?

Likely cause? - PAD - below the knee disease

Who to refer? -

Acute limb (6 P’s)

Tissue loss

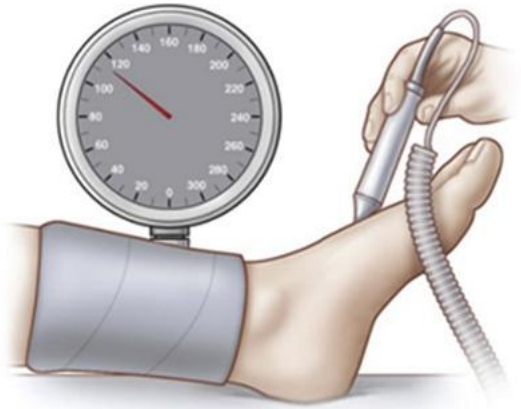
Rest Pain

Critical Analysis and Limitations of Ankle-Brachial Index (ABI) In Diagnosis of Peripheral Arterial Disease (PAD)

Retrospective review

2226 ABIs and 1383 duplex ultrasound (DUS) examinations

Resting ABI to detect ≥ 50% stenosis on DUS



Patients with PAD	Sensitivity	Overall Accuracy
All	57%	74%
Diabetics	51%	66%
Non-Diabetics	66%	81%
With CKD*	43%	67%
No CKD*	60%	76%

*CKD = Chronic Kidney Disease

43%

of symptomatic patients with PAD with ≥50% stenosis on DUS had normal/ inconclusive resting ABIs

(49% in diabetic, 57% in CKD patients)

JVS Journal of Vascular Surgery
Official Publication of the Society for Vascular Surgery

AbuRahma et al. *J Vasc Surg, March 2020*

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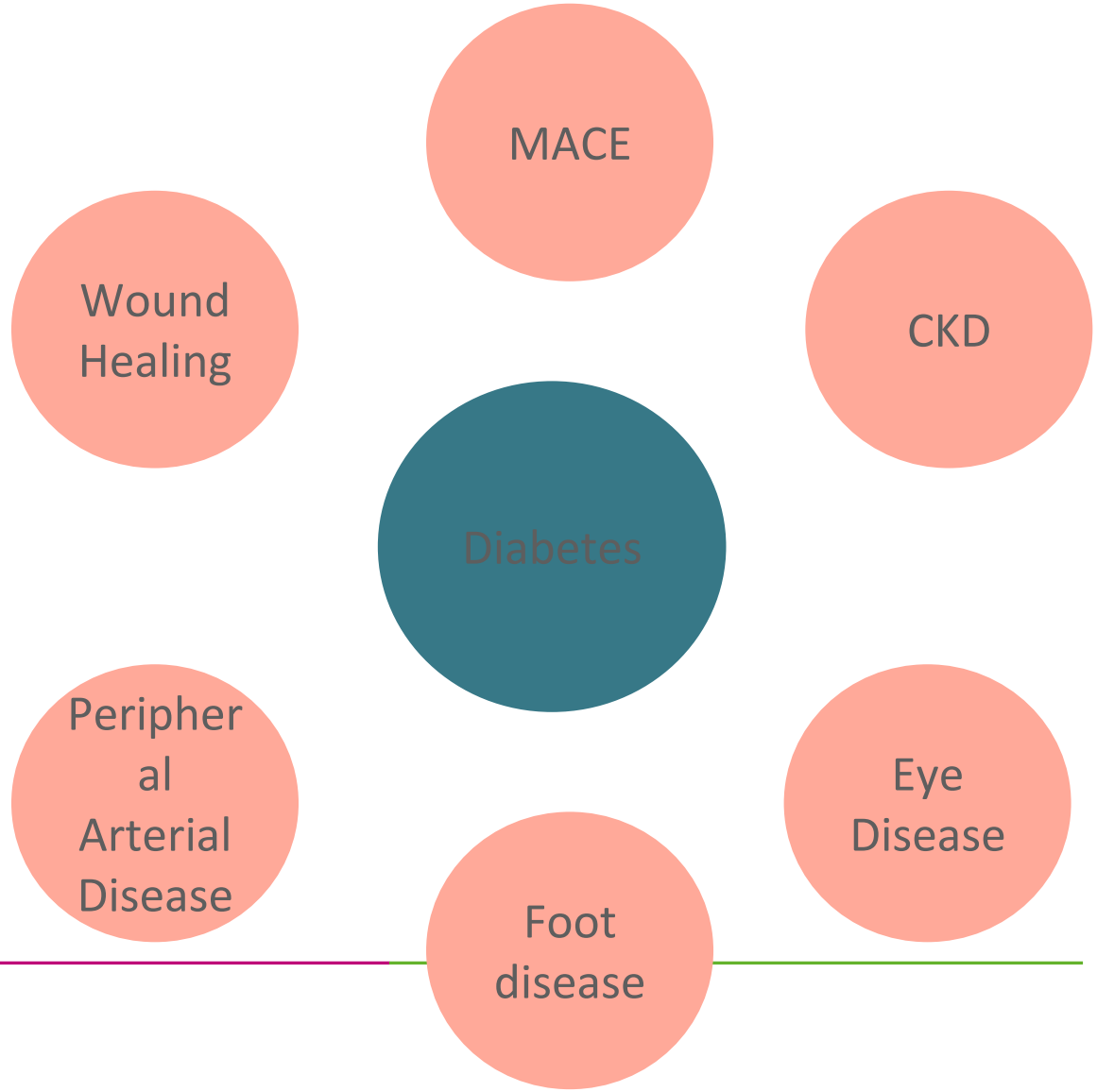
@TheJVascSurg

How do we fit into the equation ?

- Multiple presentation with foot disease
- Increased arterial intervention
- Increased risk of post operative complication



What we offer

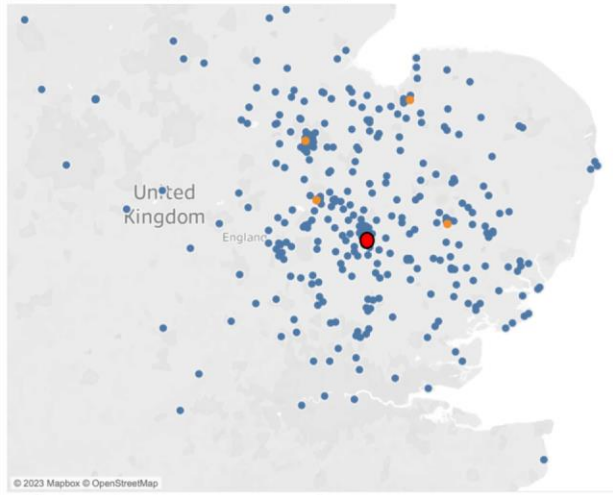
Cambridge University Hospitals NHS Foundation Trust

- Diabetic foot MDT clinic and WR
- Clinic review for short distance claudicants
- Arterial Reconstruction
- Urgent Diabetic foot review
- Wound Care advice
- Risk Factor management

How can we improve outcomes ?

- Reducing major limb amputations - early involvement of VS in foot disease
- Reducing MACE and MALE complications in Diabetics
- Improved risk factor control
- Smoking cessation
- Patient education and empowerment

A) All Amputations:

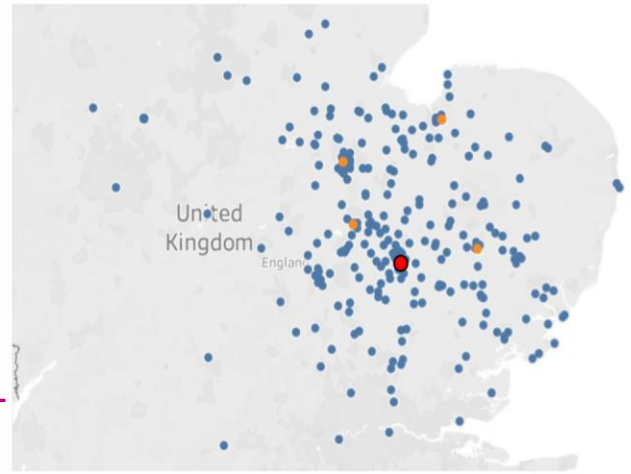


Patient postcode (>7 patients/point)

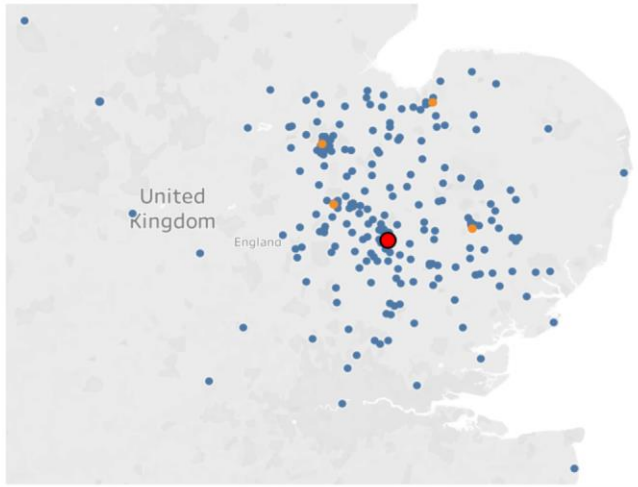
Regional "spoke" referring center

Regional "hub" receiving center

B) Major Amputations:



C) Minor Amputations:



Thank you

a.busuttil@nhs.net

Cambridgeshire & Peterborough
Integrated Care System

Close

Date of the CVD meeting: 1st November 23

Date of the Clinical Community meeting: 2nd November 23