Clinical Effectiveness South East London

Our Healthier South East London Integrated Care System

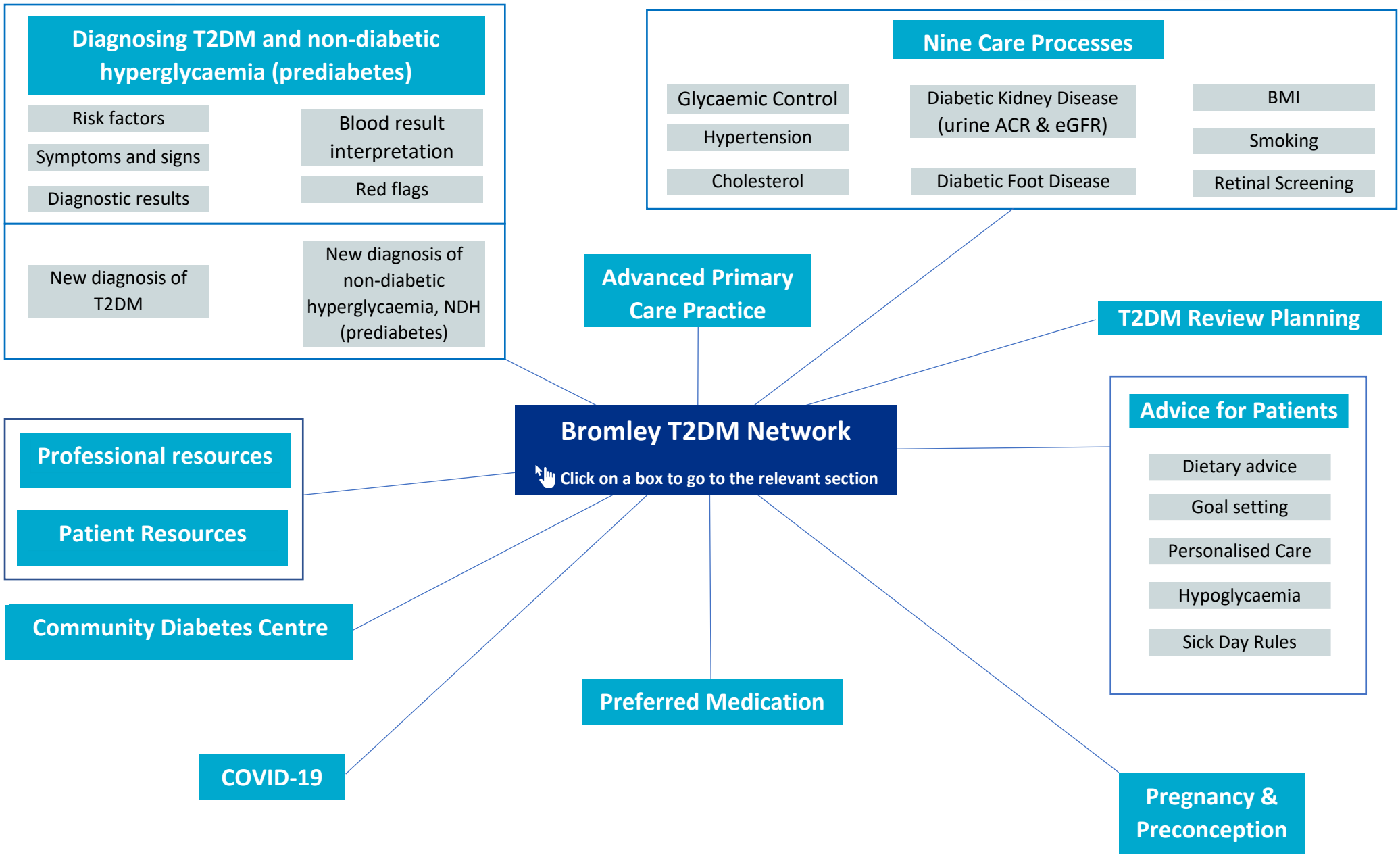
NHS

Type 2 Diabetes Mellitus in Adults

A GUIDE FOR BROMLEY GENERAL PRACTICE

1. **Lifestyle measures**: reduce weight, increase exercise, reduce alcohol, healthy diet, stop smoking
2. **Blood pressure**: Treat to target adjusting for age and comorbidities
3. **Cholesterol**: statin if QRISK2/3 ≥ 10% or history of CVD
4. **Optimise HbA1c** (adjust depending on hypoglycaemic risk and frailty)
5. **Maximise dose of metformin** to 1g BD if possible

November 2021, updated June 2023


Diagnosing T2DM and non-diabetic hyperglycaemia (prediabetes)
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1.1 Why is type 2 diabetes mellitus (T2DM) important in Bromley?

T2DM is common
There are over 17,000 adults living with diabetes in Bromley.

T2DM is underdiagnosed
QOF prevalence data shows that T2DM in Bromley was underdiagnosed in 2019-2020. This is likely to be a greater issue following COVID-19 (60,000 missed or delayed diagnoses of T2DM across the UK between March and December 2020).[1,2]

T2DM is a risk factor for mortality with COVID-19
23,698 people with COVID-19 died in hospital in England up to 11th May 2020 and 31% of these people had T2DM. [3]

T2DM is preventable and treatable
Management of non-diabetic hyperglycaemia and risk factors can reduce the risk of developing T2DM. Primary care intervention with weight management, glycaemic control, lipid lowering, blood pressure control and smoking cessation reduces complications, morbidity and mortality for patients with T2DM.[4,5,6,7,8]

There is scope to enhance patient care in Bromley
Bromley can improve care by better addressing all Care Processes as measured by the National Diabetes Audit. Urine albumin:creatinine ratio measurement and foot checks offer the greatest scope for improvement.

- 2019/2020 51% T2DM patients had all 8 Care Processes checked [9]
- 2020/2021 23% T2DM patients had all 8 Care Processes checked [10]

1.2 Diagnosing T2DM and non-diabetic hyperglycaemia (prediabetes)

1.2.1 Risk factors for T2DM [11, 12]

Modifiable risks

- Obesity
- Inactivity
- Drug treatment e.g. long-term corticosteroids
- Metabolic syndrome (hypertension, dysplipidaemia, fatty liver, central obesity, thrombotic tendency)

You can calculate T2DM risk using the Emis QDiabetes (Data Entry Template)

Non-modifiable risks

- Age
- Ethnicity: increased for Asian, African, and Afro-Caribbean
- History of gestational diabetes
- Family history of type 2 diabetes
- History of coronary heart disease or stroke
- Polycystic ovarian syndrome
- Serious mental illness
- COVID-19 infection may precipitate a diabetes diagnosis [13]

1.2.2 Symptoms and signs of T2DM [14]

- Most patients are asymptomatic
- Polydipsia and polyuria
- Weight loss (more common in type 1 diabetes)
- Recurrent infections
- Tiredness
- Blurred vision
- Acanthosis nigricans (type 2 diabetes)

1.2.3 Diagnostic results for HbA1c and glucose measurements

Test	Non-diabetic hyperglycaemia (prediabetes) [15]	Diabetes[14]
HbA1C	42-47mmol/mol (6-6.4%)	≥ 48mmol/mol (6.5%)
Fasting glucose	5.6-6.9 mmol/l	≥ 7mmol/l
Random glucose	N/A	≥ 11.1 mmol/l

Diagnose diabetes if:

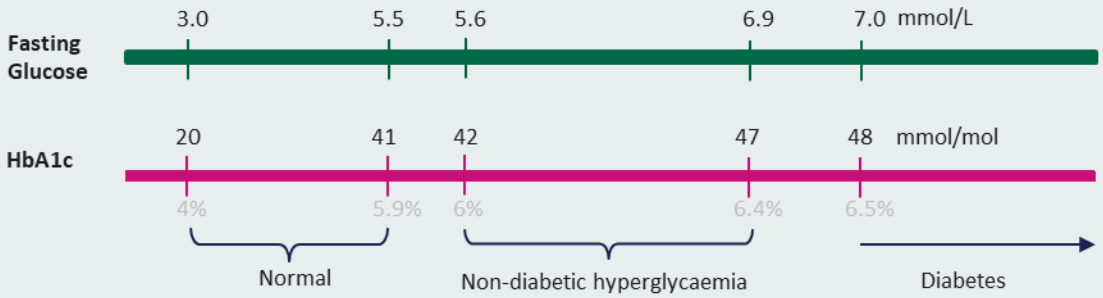
Symptomatic *and* 1 diagnostic result

OR

Asymptomatic *and* 2 diagnostic results

Diagnosing T2DM and non-diabetic hyperglycaemia (prediabetes) continued

1.2.4 Blood Result Interpretation



- If initial result is within the diagnostic range, repeat the same test, as soon as possible - **do not delay** (it is good practice to repeat the test even if symptomatic).
- If repeat test is normal, monitor regularly for development of diabetes (use clinical judgement to decide on frequency of monitoring).
- Transient severe hyperglycaemia can occur with acute infection, trauma, circulatory or other stress and is not diagnostic of T2DM in these scenarios.
- HbA1c should be used with caution in conditions with abnormal red blood cell turnover/abnormal haemoglobin type (including haemoglobinopathy, severe anaemia, altered red cell life-span e.g. post-splenectomy, recent blood transfusion, chronic kidney disease).
- HbA1c may underestimate hyperglycaemia in the following conditions and other tests should be considered for diagnosis: pregnancy, symptoms <2months, <18 years, end-stage renal disease, HIV infection and acute pancreatic damage.

1.2.5 Red flags at diagnosis (atypical presentations)

New diabetes and unexplained weight loss or HbA1c >85mmol/mol
Consider type 1 diabetes, ketosis-prone T2DM, latent autoimmune diabetes in adults (LADA) or other diabetes types. Seek specialist advice.

New diabetes and unexplained weight loss and >60 years
Consider 2 week wait referral to Upper GI for suspected cancer of pancreas. [16]

1.3 Actions following diagnosis of non-diabetic hyperglycaemia and T2DM

1.3.1 New diagnosis of non-diabetic hyperglycaemia, NDH (prediabetes)

Offer structured education, covering nutritional and physical activity support, with strategies and tools to help make change.

Offer annual review to include: HbA1c + the **Vital 5**: BP, BMI, smoking status, mental health and alcohol intake.

Code as 'non-diabetic hyperglycaemia'

REFER

ROP - Diabetic Medicine / Referrals

Walking Away from Diabetes
2 sessions over 1 month: online and telephone

National Diabetes Prevention Programme
13 sessions over 12+ months: online and telephone

1.3.2 New diagnosis of T2DM

Support patients to reach an understanding of the diagnosis, implications and what they can do to care for themselves.

Emphasise to patients and carers that structured education is integral to their care.

Offer referral to a Structured Education Programme (QOF: within 9 months of diagnosis).

Monitor annually and manage as per all **9 Care Processes**:

- HbA1C, BP, cholesterol, urine ACR, foot check, smoking status, BMI, eGFR (serum creatinine), retinopathy screen.

Emphasise the importance of managing the 9 Care Processes and how this can reduce the risk of diabetes complications.

- Use Diabetes UK Information Prescriptions to support personal care (can be downloaded into EMIS).

Agree a clear review date.

Code as 'type 2 diabetes mellitus'

REFER

ROP - Diabetic Medicine / Referrals

DESMOND

Patients can self-refer to DESMOND or other structured education but self-referral does not count towards QOF:
diabetesbooking.co.uk T2DM courses

1.3.3 Patient Resource: Diabetes UK

Diabetes UK www.diabetes.org.uk is a national charity which provides information, support, and advocacy for people with diabetes and their families.

Has a confidential helpline.

Hosts an online community for peer support.

Has a wide range of education and information patient resources.

1.4 Routine Care in T2DM: Nine Care Processes

1 HbA1c: check 3 monthly until stable, then 6 monthly

Target ≤48mmol/mol (6.5%). Unless taking a drug that could cause adverse low sugars/hypoglycaemia, e.g. gliclazide, insulin. [17]

Target ≤53mmol/mol (7%) if on a drug that could cause hypoglycaemia.[17]

Target ≤75 mmol/mol (9%) if moderate/severe frailty (QOF). [18]

Individualise target especially in frailty, reduced life expectancy, risk of falls and/or multimorbidity.

Consider using NICE patient decision aid to support discussions.

For guidance on HbA1c targets for women who are planning a pregnancy/are pregnant, refer to NICE guideline on diabetes in pregnancy

2 Blood pressure

QOF ≤140/90mmHg (excludes those with moderate or severe frailty). [18]

NICE ≤140/90mmHg under 80years; ≤ 150/90mmHg over 80 years; ≤ 130/80mmHg if CKD. [19]

3 Cholesterol [20]

Primary prevention: Atorvastatin 20mg OD if QRisk2/3 ≥10% after addressing modifiable risk factors.

Secondary prevention (history of CVD): Atorvastatin 80mg OD.

QOF target excludes those with moderate or severe frailty.

Women of childbearing age need contraception during statin treatment and for 1 month afterwards. Statins should be discontinued for 3 months before attempting to conceive.

4 Renal function and urine albumin:creatinine ratio

Measure serum eGFR and urine albumin:creatinine ratio (urine ACR). *Advise against meat consumption 12 hours before blood test.*

Consider chronic kidney disease (CKD) if eGFR <60 ml/min/1.73m^2 and/or urine ACR ≥3 for more than 3 months.

5

Ideally early morning urine – confirm any raised random urine ACR with early morning sample (due to risk of false positive with random ACR).

If urine ACR ≥3, exclude UTI and start an ACEI/ARB even if normotensive.

Identify patients with eGFR <45 ml/min/1.73m^2 who are at high risk of diabetic kidney disease: Use OneLondon Diabetic Kidney Disease Risk Stratification [21]

6 Foot check

Perform foot check at least annually (more frequently if moderate/high risk).

Low risk - Manage in primary care.

Moderate/high risk – Refer to Foot Protection Team, Bromley Healthcare Podiatry Service.

Current active foot tissue damage – Rapid (same day) referral to MDfT Specialist Foot Team (or A&E during out-of-hours).

TIME IS TISSUE! If infection is suspected, refer immediately to be seen within 24 hours.

REFER

ROP - Diabetic Medicine / Referrals/ Podiatry

Select condition requiring referral and you will be guided to the optimum referral pathway

7 Body mass index [22]

Overweight: BMI ≥25, obese: BMI ≥30.

Consider treating Asian people with BMI ≥23.

Agree an initial weight loss target of 5–10% of body weight, maximum 1kg/week [17]

Referral options vary with BMI and are automatically selected via the ROP.

8 Smoking

Deliver 'Very Brief Advice: ASK ADVISE ACT'. See Very Brief Advice Training Module.

If ready to quit, arrange appointment with practice cessation services or advise self-referral to Stop Smoking London: helpline (0300 123 1044) and online support.

9 Retinal screening

Coding a diagnosis of T2DM in EMIS will automatically refer the patient; no GP action is required. Recall is managed by central team but GP should f/u patients who do not attend.

Additional considerations: check **mental health** and **alcohol** intake; **immunise** [23] - flu annually, pneumococcal once, COVID-19 as per local/national guidance.

1.5 Why is glycaemic control important? [24]

Persistent hyperglycaemia leads to several serious complications and reduced life expectancy. Risk is reduced with good glucose control and this should be emphasised to patients.

1.5.1 Macrovascular complications

- Atherosclerotic cardiovascular disease
- Myocardial infarction
- Stroke
- Peripheral arterial disease
- Heart failure

1.5.2 Microvascular complications

- Diabetic kidney disease
- Retinopathy
- Autonomic neuropathy
- Peripheral neuropathy

1.5.3 Foot disease

- Ulcers
- Charcot arthropathy
- Osteomyelitis
- Deep tissue infection
- Lower limb ischaemia and amputation
- Sepsis

1.5.4 Metabolic

- Diabetic ketoacidosis
- Hyperosmolar hyperglycaemic state
- Dyslipidaemia

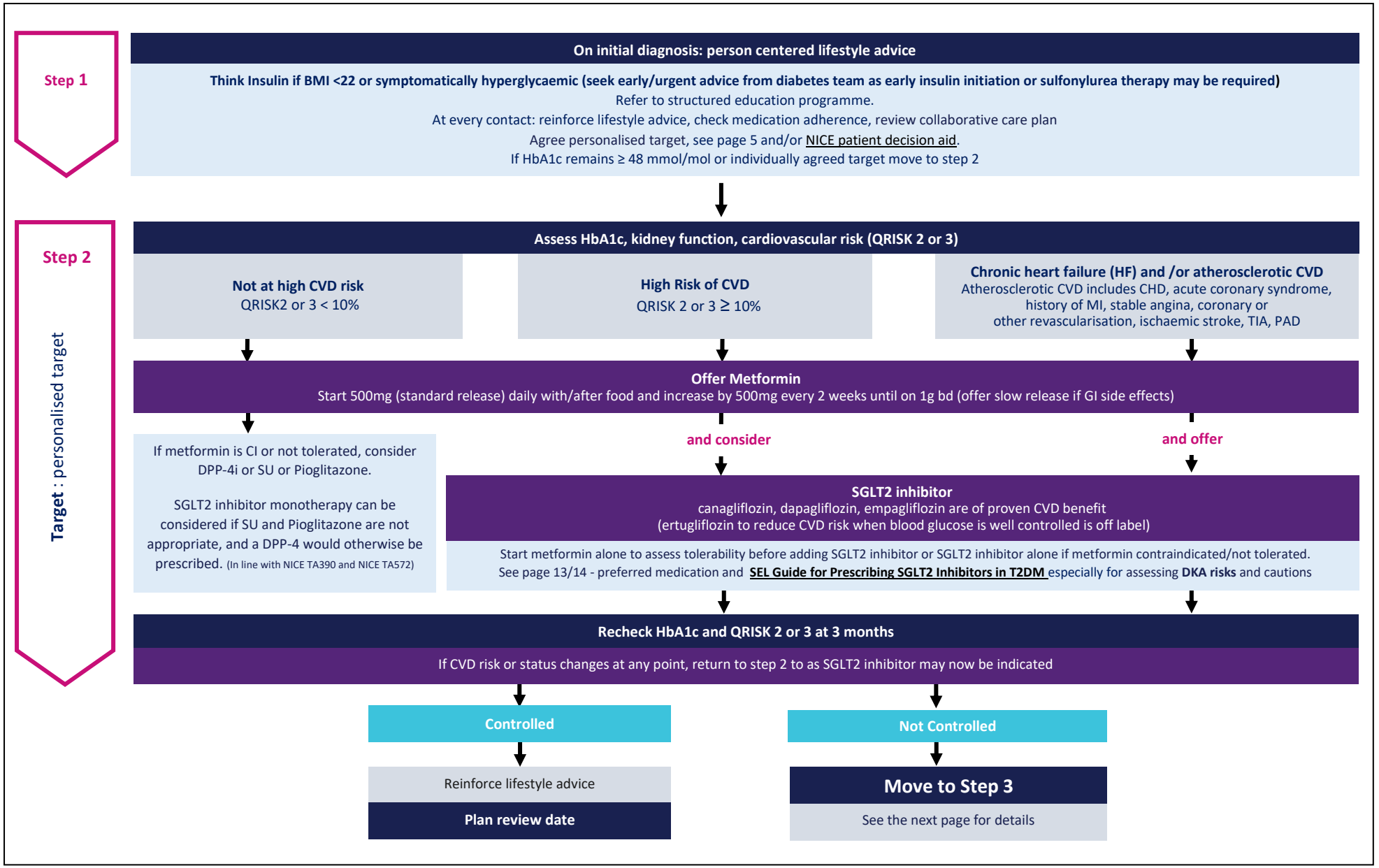
1.5.5 Erectile dysfunction

Proactively ask about this and explore with patient.

1.5.6 Psychosocial

- Anxiety
- Depression
- Decreased QoL

1.6 Glycaemic control [17, 34, 35]



Step 3

1st intensification

Target : personalised target

Add therapy

Informed by clinical judgment and patient preferences

	Metformin	SGLT2 inhibitor (flozins)	Sulfonylureas (SU)	DDP-4 inhibitor – (gliptins)	Pioglitazone (Pio)
			Gliclazide is preferred SU in SEL	1st line sitagliptin linagliptin in severe renal impairment	
Hypoglycaemia risk Hypoglycaemia risk may increase if antidiabetic drugs are used with insulin and/or sulfonylurea therapy. Consider reducing dose of sulfonylurea or insulin if clinically indicated.	low	low	moderate: higher risk in older and frail patients	low	low
Weight effect	none	loss	gain	none	gain
Side Effects/Notes For doses, more cautions and side effects see page 11, sick day rules page 10, BNF and/or EMC	GI disturbance Caution in renal impairment	GU infections, hypotension, dehydration, DKA Caution in renal impairment. See **SEL Guide for Prescribing SGLT2 inhibitors in T2DM**	**Hypoglycaemia:** caution in elderly, frail and certain occupations e.g. operating heavy machinery. See SEL Self - Monitoring and DVLA guidance	Pancreatitis Caution in renal impairment	Oedema, Heart Failure, Fractures, ↑ Bladder Ca risk
Which SGLT2 inhibitor? See **SEL Guide for Prescribing SGLT2 Inhibitors in T2DM**	**Dual therapy** **SGLT2 inhibitor + Metformin** If S/U is contraindicated or not tolerated or person is at significant risk of hypoglycaemia or its consequences canagliflozin, dapagliflozin, empagliflozin are of proven CVD benefit (ertugliflozin to reduce CVD risk when blood glucose is well controlled is off label)		**Triple therapy** **SGLT2 inhibitor + metformin+ SU** Canagliflozin, empagliflozin or dapagliflozin	**Triple therapy** **metformin+ DDP-4inhibitor** + **Ertugliflozin** only if not controlled on dual therapy (metformin + DDP-4i**)** and SU AND Pio not appropriate	**Triple therapy** **SGLT2 inhibitor+ metformin + Pioglitazone** Canagliflozin, empagliflozin

Step 4

2nd Intensification

Target : personalised target

Recheck HbA1c and CVD risks at 3 months

If CVD risk or status changes at any point (if the patient develops a QRISK 2 or 3 >10% or chronic Heart failure or CVD), return to step 2 to consider/offer SGLT2 inhibitor

Controlled
Reiterate lifestyle advice

Plan review date

When to refer to secondary care (page 16)

If the patient is on insulin, has poor glycaemic control, very high blood glucose and/or is very symptomatic, seek specialist advice to consider a regime for rapid reduction of blood glucose. Also consider referrals for patients with comorbidities e.g. CKD + diabetes or vascular disease + diabetes.

Not Controlled
Switch or add treatments from different drug classes up to triple therapy (dual therapy if metformin C/I)

If still not controlled

Consider GLP-1 analogues

When triple therapy with metformin and 2 other drugs not effective, not tolerated or contraindicated. Refer to page 11 for BMI criteria.
See SEL GLP-1 analogue pathway

OR

Consider Insulin based therapy

If HbA1c is >11mmol/mol above individual's target insulin is preferred option. Refer to accredited clinician for initiation.
SEL IMOC Insulin safety guidance

Remains uncontrolled?

Refer to Specialist Diabetes Team (page 16)

Additional considerations

Rescue therapy: if blood glucose is very high and/or symptomatically hyperglycaemic, seek specialist advice to consider a regime for rapid reduction of blood glucose. Specialist advice is available from the Bromley Community Diabetes Centre (see Section 3.1 - Community Diabetes Centre).

If a patient is not achieving their HbA1c target with the steps above:

- Reinforce lifestyle advice, including diet.
- Check adherence with antidiabetic drug treatment.

REFER (Community Diabetes Centre)

ROP - Diabetic Medicine/Referrals/BHC Diabetes Service Referral Form

Community Diabetes Referral Form (Bromley Healthcare Diabetes Service)

If patient achieves a lower HbA1c than their target without hypoglycaemic effects:

- Encourage them to maintain it.
- Consider alternative reasons for low HbA1c, including deteriorating renal function and sudden weight loss.
- Review medication.

1.7 Diagnosing Hypertension [19]

1.7.1 Measuring blood pressure

Clinic BP readings

- Measure sitting BP and standing BP after 1 minute.
- If significant postural drop (≥ 20 systolic), treat to target on the standing BP.
- Confirm diagnosis with ambulatory blood pressure monitoring (ABPM) or home blood pressure monitoring (HBPM).

Home BP readings

- Corresponding HBPM measure are 5mmHg lower than clinic measures.
- Ensure accurate BP machine and advise to record two BP readings every morning and evening for 7 days.
- Disregard the first day's readings and take an average of all other readings.
- Signpost patients to British Heart Foundation advice; send as an AccuRx link.

REQUESTING ABPM

ROP – Cardiology / Diagnostics / (12 lead ECG/24ECG/24hBP/ (Community Service))

1.7.2 BP thresholds for initiating antihypertensives in patients with T2DM

Hypertension	Clinic BP (confirm with ABPM/HPBM)	ABPM/HBPM	Under 80	Over 80
Stage 1	Systolic 140-159 Diastolic 90-99	Systolic 135-149 Diastolic 85-94	Discuss starting treatment	Consider treatment if clinic BP>150/90*
Stage 2	Systolic 160-179 Diastolic 100-119	≥150/95	Offer treatment	Offer treatment*
Stage 3 (severe hypertension)	≥180/120	-	Same day referral if symptomatic/retinal haemorrhage/papilloedema/AKI/suspected phaeochromocytoma, otherwise request urgent ABPM and investigate for target organ damage** (including ECG, urine dip, renal function, fundoscopy). Review within 7 days or sooner if target organ damage is confirmed and treat if persistent hypertension.	

Discuss lifestyle interventions for all hypertension stages (including healthy, low sodium diet; regular exercise; reduced alcohol and caffeine intake; smoking cessation).

* Use clinical judgement with frailty and multimorbidity.

**Target organ damage: damage to organs such as the heart, brain, kidneys and eyes. Examples are left ventricular hypertrophy, chronic kidney disease or hypertensive retinopathy.

1.8 Hypertension Management [19]

1.8.1 Antihypertensive medications – stepwise

See SEL Hypertension Guidance for Primary Care: https://selondonccg.nhs.uk/download/11532/

BP review recommended at least annually, or more frequently when clinically indicated.

Drugs to avoid at conception/in pregnancy include ACEI/ARB/thiazide or thiazide like diuretic (increased risk of congenital abnormalities). NICE advises: Stop ACEI/ARBs and change medication (preferably within 2 working days of notification of pregnancy). Offer alternatives: labetalol (if no CI e.g. asthma), nifedipine or methyldopa. Can remain on amlodipine if already prescribed. Target BP ≤ 135/85 mmHg. Offer aspirin 75 - 150mg OD from week 12 of pregnancy. [27] All patients with diabetes who are pregnant or contemplating pregnancy should be referred for specialist care: see Section 1.19 Diabetes, Preconception & Pregnancy.

*For black African/Caribbean family origin use ARB instead of ACEI (as increased risk of angioedema with ACEI in this patient group).

Step 1	**ACEI or ARB***
	ramipril/lisinopril or losartan
Step 2	**ACEI or ARB* + CCB or thiazide-type diuretic**
	ramipril/lisinopril or losartan + amlodipine or indapamide
Step 3	**ACEI or ARB* + CCB + thiazide-type diuretic**
	ramipril/lisinopril or losartan + amlodipine + indapamide
Step 4	**Uncontrolled on optimal doses - regard as resistant hypertension.**
	Repeat ABPM/HBPM, assess for postural hypotension, discuss adherence.
	If good renal function and potassium ≤4.5mmol/L, consider adding low dose spironolactone.
	If potassium > 4.5mmol/L +/- reduced renal function, consider alpha blocker (doxazosin) or beta-blocker (atenolol/bisoprolol) +/- seeking specialist advice.

REFER
ROP - Cardiology/ Referrals/ Hypertension
Outpatient review or Advice and Guidance

1.8.2 Blood pressure targets for hypertension management in diabetes

QOF	≤140/90mmHg(clinic), ≤135/85mmHg (ABPM/HBPM) - excluding moderate or severe frailty
NICE: <80 years	≤140/90mmHg (clinic), ≤135/85mmHg (ABPM/HBPM)
NICE: ≥ 80 years	≤150/90mmHg (clinic), ≤145/85mmHg (ABPM/HBPM)
NICE: CKD	120-129/79mmHg

1.9 Lipid Management [20]

1.9.1 Cardiovascular risk assessment

Management of cardiovascular risk factors is essential to prevent and reduce macrovascular complications of diabetes.

- Perform baseline bloods (non-fasting lipid profile, LFT, TFT, HbA1c, renal function).
- Record weight, smoking status, BP.
- Calculate QRisk2/3 score except in CKD/albuminuria or familial hypercholesterolaemia.

You can calculate QRisk2 using the EMIS QRisk2 Data Entry Template

QRisk3 is an update of QRisk2 with new parameters and will be available on Emis in due course

1.9.2 Cardiovascular risk management

For all patients, consider education and lifestyle interventions to modify CVD risk and use shared-decision making to consider risk vs benefit of therapy. Initiate lipid lowering therapy according to the following two sections.

1.9.3 Primary prevention of cardiovascular disease

- If QRisk2/3 ≥10% or patient has CKD: start **atorvastatin 20mg OD** or rosuvastatin 10mg OD.
- Calculate baseline non-HDL level (total cholesterol minus HDL cholesterol) and again after 3 months.

Non-HDL level	Non-HDL decreased ≥40% from baseline	Non-HDL not decreased ≥40% from baseline
Action	Review annually	Check adherence to medication, dose timing, adverse effects/intolerance/hesitancy & diet/lifestyle interventions. Consider up-titration to maximum dose of statin (atorvastatin 80mg OD or rosuvastatin 20mg OD). If intolerant to higher dose, consider adding ezetimibe 10mg OD. If intolerant to any dose of statin, start ezetimibe 10mg OD and refer to Lipid Clinic. If still not achieving ≥40% reduction, refer to Lipid Clinic.

Refer to Lipid Management Pathway for South East London for more detailed guidance: https://selondonccg.nhs.uk/download/16002/

1.9.4 Secondary prevention of cardiovascular disease

- Offer daily, high dose, high intensity statin (**atorvastatin 40-80mg OD** or rosuvastatin 20mg OD) if history of CVD (including MI, angina, stroke/TIA, peripheral vascular disease, abdominal aortic aneurysm).
- Calculate baseline non-HDL level (total cholesterol minus HDL cholesterol) and again after 3 months.

Non-HDL level	Decreased ≥40% from baseline	Not decreased ≥40% from baseline
Action	Review annually	Check adherence, dose timing, adverse effects/intolerance/hesitancy & diet/lifestyle interventions. Ensure on maximum tolerated dose of statin and consider adding ezetimibe 10mg OD and review in a further 3 months - if non-HDL has not decreased ≥40% from baseline, refer to Lipid Clinic.

Refer to Lipid Management Pathway for South East London for more detailed guidance: https://selondonccg.nhs.uk/download/16002/

1.9.5 Referral to Lipid Clinic

Patients with very high levels of cholesterol/triglycerides, a positive family history or in whom target levels cannot be achieved with maximal doses of statin & ezetimibe, should be considered for referral to the Lipid Clinic: see Lipid Management Pathway for South East London (https://selondonccg.nhs.uk/download/16002/) for referral criteria.

Prior to referral to Lipid Clinic, identify, manage and reassess potential secondary causes of hyperlipidaemia such as uncontrolled diabetes mellitus, obesity, excess alcohol consumption, untreated hypothyroidism, proteinuria and some medications, for example, thiazide diuretics and ciclosporin.

REFERRAL TO LIPID CLINIC

SEL Lipid Clinic	Lipidologist for referrals	Contact Details
GSTT	Prof AS Wierzbicki/Prof MA Crook	via Choose & Book or gst-tr.diabetesandendocrine@nhs.net
KCH	Dr Nandini Rao	via Choose & Book or to book an appointment/query re appointment/blood test request forms Tel: 02032994181 or email: Laura.Gonzalez@nhs.net
PRUH	Dr Nandini Rao	via Choose &Book or kch-tr.br-referrals@nhs.net
LGT	Prof MA Crook	via Choose & Book or tlh-tr.LewishamReferrals@nhs.net or endocrinology at QEH: lipidology clinics at the Bromley diabetes centre, Outpatients QEH: Tel 02088364969

1.10 Diagnosing and Managing Diabetic Kidney Disease: eGFR and Urine Albumin/Creatinine Ratio [28,29]

1.10.1 What is diabetic kidney disease and why is it important?

Diabetes is the commonest cause of chronic kidney disease (CKD) and end-stage renal disease (ESRD).

- Microalbuminuria is usually the first sign of diabetic kidney disease.
- CKD is an independent risk factor for cardiovascular disease.

Intervention can prevent/reduce progression of renal disease

1.10.2 Diagnosing chronic kidney disease (CKD)

Annually:

- Request urine albumin: creatinine ratio (ACR) testing – early morning void wherever possible.
- If *random* urine ACR is raised, confirm result with early morning sample in case of a false positive result.
- Exclude UTI if ACR is raised.
- Measure serum creatinine to calculate eGFR (no meat for 12h before the test).

Do not adjust eGFR for ethnicity as this is no longer recommended and may lead to underdiagnosis.

Diagnose and treat chronic kidney disease if:

- Persistent* reduction in kidney function (eGFR<60 ml/min/1.73m^2)

and/or

- Persistent* microalbuminuria (urine ACR ≥3mg/mmol).

*For three months or more – repeat initial test after 3 month interval.

1.10.3 Managing diabetic kidney disease

- **Aim for a systolic blood pressure of 120-129 mmHg and diastolic less than 80 mmHg.**
- Start a low-cost ACEI/ARB even if normotensive (ramipril or losartan) or up-titrate existing dose to achieve the maximum tolerated dose, depending on contraindications, cautions, and drug interactions (see Section 1.20).
- **Do *not* co-prescribe ACEI & ARB**.
- Optimise blood glucose control.
- Advise on SICK DAY RULES (see Section 1.18).
- If not on a statin, offer atorvastatin 20mg once a day, irrespective of lipid profile.
- Provide patient education resources (see Diabetes UK: Diabetic nephropathy (kidney disease).

1.10.4 Referral to Renal Clinic (SEL Nephrology Service)

Referral criteria: eGFR<30ml/min, sustained decrease in eGFR of 15ml/min or 25% decrease, ACR≥30mg/ml with haematuria, ACR>70mg/ml in spite of optimal diabetes management, poorly controlled hypertension with co-existing CKD 3-5, known or suspected rare/genetic cause of CKD, suspected renal artery stenosis.

REFER
ROP – Nephrology / Referrals
For AKI: ROP – Acute / Referrals / Acute Referral Form

1.11 Diabetic Foot Disease: Risk Stratification and Management

1.11.1 Why is diabetic foot disease important?

- Diabetic foot disease is a significant cause of disability and amputation.
- Early detection and intervention can prevent progression to severe disease.

1.11.2 Diabetic foot checks [30]

Patient education and regular foot checks are the foundation of good diabetic foot care.

Feet should be examined at least annually. Face to face examination should include testing using 10g monofilament to detect nephropathy.

Diabetic foot pathology:

- Limb ischaemia
- Ulceration
- Callus
- Infection and/or inflammation
- Deformity
- Neuropathy
- Charcot arthropathy (usually presents as hot swollen joint/foot)
- Gangrene

1.11.3 When to refer

The traffic light system on the next page provides a useful guide about when and where to refer.

Time is tissue!

Do not delay referral for diabetic foot problems.

Refer immediately to be seen within 24 hours if you suspect foot infection.

REFER

ROP - Diabetic Medicine / Referrals/ Podiatry

Select appropriate foot condition and you will be guided to the optimum pathway

Nail cutting services are not available on the NHS. Patients who require help with nail cutting can be signposted to the patient-funded Age UK "Clip It" service: https://www.ageuk.org.uk/bromleyandgreenwich/our-services/footcare/clip-it-clinics/

1.11.4 Patient resources

The following patient information leaflet is available from the ROP (Diabetic Medicine/ Patient Resources / Diabetic Footcare Patient Information) or by clicking the hyperlink: Diabetes and Looking After Your Feet (Diabetes UK patient leaflet).

1.11.5 Professional resources

The SEL High Risk Foot EMIS Search is a risk stratification tool for identifying patients at greatest risk of foot disease. The search must be copied to a practice local search folder before it can be run. Find the folder within the *Population Reporting* module of EMIS Web: 'Clinical Effectiveness Group (Shared Folder) / SEL CCG High Risk Foot Search'.

1.12 Diabetic Foot Disease: Risk Stratification and Management – Traffic Light System [31]

Risk Level	Definition	Action
Low	Intact foot and at low risk of damage: • Normal foot sensation • Palpable foot pulses • No foot deformity • No history of ulceration or amputation	**Continue foot care within primary care setting (GP)** • Annual Foot Screening to check for tissue damage, neuropathy & circulatory problems – see here for a video on how to conduct a foot screening: http://bit.ly/How2FS • Provide patient with verbal information & Low Risk Foot Patient Leaflet: http://bit.ly/LR_Foot
Moderate	Intact foot but moderate risk of damage: • Peripheral neuropathy (i.e. abnormal sensation) • Peripheral vascular disease (i.e. absent foot pulses) • Deformity/lesions	**Refer for foot care within Foot Protection Team** • Diabetes foot checks and surveillance every six months • Foot check for tissue damage, neuropathy & circulatory problems • Regular podiatry and general foot care • Callus removal, nail care and regular foot care review as per NICE guidelines • Provide patient with verbal information & Moderate Risk Foot Patient Leaflet: http://bit.ly/MR_Foot
High	Intact foot but high risk of damage: • Previous foot ulceration • History of Charcot foot • Patients on dialysis • Previous amputation • Neuropathy and lower limb peripheral arterial disease together • Neuropathy in combination with callus/deformity • Lower limb peripheral arterial disease in combination with callus/deformity • Patients who are: on dialysis, blind, or unable to self-care	**Refer for foot care within Foot Protection Team** • Diabetes foot checks and surveillance every two — three months • Foot Check for tissue damage • Regular podiatry and general foot care • Callus removal, nail care and regular foot care review as per NICE guidelines similar to the yellow box above • Provide patient with verbal information & High Risk Foot Patient Leaflet: http://bit.ly/HR_Foot
Active	Current active foot tissue damage: • Any foot ulceration • Acute Charcot foot (hot/swollen/painful foot) • Any foot Infection	**Refer urgently (same day) to hospital based Multidisciplinary Diabetic Foot Team (MDfT)* or immediately to ED if the patient has suspected sepsis** • Triage of referrals within one working day • MDfT review within one additional working day • 'One-stop' case reviews • Coordinate OPAT Care • Refer housebound patients to FPT immediately • Ensure patients provided with written and verbal information and contact numbers *Housebound patients will be managed by the community based, Foot Protection Team under the guidance of the MDfT

All referrals should be made using the Referrals Optimisation Protocol: Diabetic Medicine / Referrals/ Podiatry & Foot Referrals

Service Details:	Foot Protection Team: (landline) 0300 330 5777, (mobile) 07821 809796, (email) bromh.cccpod4@nhs.net Multidisciplinary Diabetic Foot Team: (landline) 01689 865 202, (email) kch-tr.pruhdiabeticfootclinic@nhs.net

1.13 BMI - Weight Management [17,22,32]

1.13.1 Advice on physical activity

Provide general advice on healthy weight and lifestyle to all patients with T2DM.

- For all, recommend increased physical activity, even in absence of weight loss, brings health benefits.
- To prevent obesity, recommend 45-60 minutes moderate intensity exercise a day.
- With a history of obesity, recommend 60-90 minutes moderate intensity exercise a day to avoid regaining weight.

1.13.2 Weight management options

Tailor interventions to patient's circumstances and choices.

Consider referral at lower BMI for patients from BAME backgrounds.

- BMI ≥ 30kg/m^2 or (27.5kg/m^2 & BAME)
  - By default, offer referral to NHS Digital Weight Management Programme (Tier 2) (patient must have access to online technology).
  - Alternatively, recommend self-referral to other Tier 2 service e.g. Weight Watchers, Slimming World (list of services is available on the ROP).
- BMI ≥ 35kg/m^2
  - Offer referral to Tier 3 SEL Healthy Weight Programme (12 month intensive course).
- Patients newly diagnosed with diabetes and BMI 30-34.9kg/m^2
  - Discuss referral for bariatric surgery: Upper GI Service for Kings @ Beckenham Beacon – RJZ31 (Tier 4)
- BMI ≥ 40kg/m^2 or (BMI ≥ 35kg/m^2 with complex comorbidities)
  - Discuss referral for bariatric surgery: Upper GI Service for Kings @ Beckenham Beacon – RJZ31 (Tier 4)

REFERRALS

ROP - Dietetic and Weight Management / Weight Management / Referrals

Referral options are automatically displayed according to patient eligibility.

1.14 Smoking cessation

1.14.1 "Very Brief Advice" for smoking cessation

Patients who smoke should be offered advice on smoking cessation. Online training for providing advice is available free of charge Very Brief Advice Training Module.

1.14.2 Practice cessation services

There are currently no commissioned in-person smoking cessation services in Bromley. When the patient is ready to quit, offer referral to the surgery's smoking cessation service if available.

1.14.3 Stop Smoking London

- Self-referral to Stop Smoking London helpline (0300 123 1044) and online support.
  - Provides support through a 4-week quit attempt.
  - Patient buys NRT or vapes over-the-counter or GP can prescribe NRT.
  - For proof of behavioural support, Stop Smoking London can send a confirmatory email to the patient to share with the GP.
- See London Borough of Bromley resource: Get help to stop smoking - London Borough of Bromley.

1.15 Diabetic Eye Screening (Retinal Screening)

Retinal screening is carried out by the SEL Diabetic Eye Screening Programme at two sites in Bromley. There is a central administration team which automatically invites patients for screening and results are sent to the GP electronically.

1.15.1 Referral to retinal screening

Patients correctly coded with diabetes will identified automatically; the GP does *not* need to make a referral.

Patients whose diabetes is in remission should be coded as "diabetes in remission" not "resolved" as they should continue to receive eye screening

1.15.2 Results of screening visit

Grade	Action for GP and Patient	Action for retinal Screening Programme (DESP)
R0M0	No retinopathy. Maintain good control/optimise BP and glucose control.	Rescreen patient in 1 year
R1M0	Background diabetic retinopathy. Optimise BP and glucose control	Rescreen patient in 1 year
R1M1	Background diabetic retinopathy with maculopathy. Changes are reversible in the early stages with good systemic control of Glucose and BP. Encourage attendance at appointments	Closer monitoring in screening programme (3-9 month recall) or referral to hospital eye service
R2M0	Patient has developed pre-proliferative diabetic retinopathy. Encourage improvement of systemic control to slow down progression. Encourage attendance at appointments	Closer monitoring in screening programme (3-9 month recall) or referral to hospital eye service
R2M1	Patient has developed pre-proliferative changes and maculopathy. Patients are at risk of visual loss and need to improve systemic control in a controlled manner. Encourage attendance at appointments	Closer monitoring in screening programme (3-9 month recall) or referral to hospital eye service
R3M0/R3M1	Patient has developed proliferative disease (with or without maculopathy), high risk of visual loss. Patient needs to improve control in a controlled manner. Encourage attendance at appointments	Will arrange referral and urgent appointment with hospital eye service
R3SM0/R3SM1	Patient has developed proliferative disease with maculopathy that is now stable following treatment. Patient needs to improve control in a controlled manner	Stable, treated retinopathy. Will arrange referral if required or closer monitoring in screening programme
U	Patient has non-assessable images using screening camera	Will arrange appointment for slit-lamp bio screening within 13 weeks. May need referral for cataracts

1.15.3 Patients who do not attend

The patient's GP is notified of non-attendance for retinal screening and should make efforts to encourage attendance.

Patients who are not suitable for screening or who opt out:
Patients may be excluded from screening if they are unable to sit upright and use chin rest, or follow instructions. The programme may contact the GP to confirm if patient is unsuitable. Patients can choose to opt out of screening by completing opt-out form.

Service contact details: 020 718 81979, gst-tr.seldesp.admin@nhs.net or www.gstt.nhs.uk/seldesp.

1.16 T2DM Review Planning and Tasks

	Tasks/Activity	Who?	Where?	Tools/Support
Review planning	Recall patients at least annually or more frequently if diabetes is unstable/medication changes have been made.	Admin colleague with clinician support: GP/nurse/pharmacist		Eclipse can be used to identify those patients who would most benefit from review.
Pre-patient review	• Advise patient to attend for bloods: predefined diabetes blood test group in tQuest + submit urine ACR specimen (preferably early morning sample). • Where possible, ask the patient to measure their BP and weight.	HCA/nurse/pharmacist	Remote or F2F	AccuRx and eConsult have facility for pre-review information gathering; text/contact patient to encourage to complete ahead of review.

Patient review	• Explore patient concerns, expectations.
	• Review trend of BMI and BP.
	• Review investigations: urine ACR, renal function, HbA1c, cholesterol.
	• Re-calculate QRISK2/3:
	  • For primary prevention if not on statin.
	  • If >10% discuss option of adding or substituting an SGLT2i. If you add an SGLT2i to a regime which includes drugs which may cause hypoglycaemia, consider reducing the dose of those drugs especially if HbA1c target is already on target. Upon initiation, provide education about symptoms of hypoglycaemia and reassess HbA1c in three months.
	• Discuss risk-reduction + lifestyle
	• Medication review
	  • Check patient concerns, side-effects and adherence.
	  • Adjust medications if necessary.
	  • Signpost to community pharmacy for New Medicines Service.
	• Include foot check and advice on foot care, share link via accuRx Diabetes UK advice on Footcare.
	• Check patient has attended for eye screening.
	• Ask patient about their mental health.
	• Ask men about erectile dysfunction.
	• Agree goals including self-management.
	• Consider referral to Social Prescriber.
	• Agree next review date.
		GP/nurse/pharmacist	Remote or F2F	Use recommended EMIS/Ardens templates (ensures correct coding, annual review, medication review).
				
				Signpost or refer to Diabetes Book and Learn for structured education.
				
				Self-management resources - send links via AccuRx.
				Diabetes UK Information Prescriptions to support personal care

1.17 Diabetes Review: Advice for Patients

1.17.1 Dietary advice

I have type 2 diabetes – what can I eat? | Diabetes UK

Advise on healthy eating:

- Eat
  - plenty of vegetables.
  - sufficient fibre
  - fish, especially oily fish (mackerel, salmon, sardines) regularly.
- Avoid
  - sugary food and drinks.
  - energy dense foods such as crisps, cakes, biscuits and pastries.
  - alcohol.
  - salty, processed foods.

Consider signposting the patient to the NHS Diet Advice for Diabetes (diabetes.co.uk).

Consider 'Healthy Eating & Active Lifestyles for Diabetes (HEAL-D)' for African and Caribbean people: HEAL-D | Lifestyle for diabetes in African & Caribbean communities

Professional resource: CDEP Nutrition learning module to increase your knowledge of diet and T2DM.

1.17.2 Goal setting

🎬 Watch this short patient video on achieving goals.

Support your patients to make **SMART** goals e.g.

Specific:	**Measurable:**	**Achievable:**	**Realistic:**	**Timed:**
'I want to lose weight'	'I'll aim to lose 2kg'	'I'll attend a Book and Learn course to help me'	'I'll ask my family to help too'	'I'll do this over the next 6 months'

1.17.3 Personalised Care

"A one-size-fits-all health and care system simply cannot meet the increasing complexity of people's needs and expectations. Personalised care is based on 'what matters' to people and their individual strengths and needs." NHS England. Consider learning through the Personalised Care Institute.

1.17.4 Hypoglycaemia

See TREND Guidance 'Hypoglycaemia in adults in the community: recognition, management and prevention'

1.18 Diabetes Review: Advice for Patients - Sick Day Rules

If available, increase glucose monitoring to at least 4 times a day when unwell.

Maintain fluid and carbohydrate intake. Sugary fluids if glucose low and sugar-free fluids if glucose high.

NEVER stop insulin: adjust dose of insulin and gliclazide according to glucose readings.

If adjusting medication doses, remember to change them back once in recovery.

SADMANS rules Classes of drugs that should be temporarily stopped during dehydrating illness			
S	Sulfonylureas (Continue if eating and drinking normally and blood glucose is high)	**M**	Metformin
A	ACE inhibitors	**A**	ARBs
D	Diuretics	**N**	NSAIDs
		S	SGLT2 inhibitors

Patients should seek medical advice if they:

- have no access to glucose monitoring and experience symptoms of high glucose – e.g. thirst, polyuria, fatigue.
- are unable to maintain hydration or take carbohydrates due to vomiting.
- have persistently high or low glucose despite adjusting medication doses.
- have any other concerns when they feel unwell.

1.18.1 Patient Resources

Patient Information Leaflet: Type 2 Diabetes: What to do when you are ill (TREND) [33]

London Clinical Network Guidance Sick day rules: how to manage Type 2 diabetes if you become unwell with coronavirus and what to do with your medication

NHS Video library guide to using glucometer

1.19 Diabetes, Preconception & Pregnancy

1.19.1 Preconception planning and care for patients with diabetes

Preconception planning for diabetic patients is extremely important to reduce the risk of adverse maternal and fetal outcomes.

If a woman living with diabetes wishes to conceive:

- Refer immediately to Bromley Healthcare Diabetes Clinic and specify 'Preconception, Type 2 (or 1) diabetes'. The patient will be reviewed every 4-6 weeks.
- Start folic acid 5mg once a day, at least 3 months before trying to conceive.
- Check HbA1c (aim for <6.5%), thyroid function and renal function.
- Start regular home glucose monitoring (will be arranged in preconception clinic if not already established). Measure blood glucose on waking and before and after meals (aim for blood glucose 4-7 before meals, 5-8 after meals).
- Review medication for contraindications in pregnancy and stop where possible e.g. ACEI, ARB and statin. Seek specialist advice if necessary.
- See Section 1.8.1 for the management of hypertension in pre-conception and pregnancy.

REFER to Bromley Healthcare Diabetes Clinic (Preconception)
ROP - Diabetic Medicine / Referrals/ BHC Diabetes Service Referral Form
Community Diabetes Referral Form - Specify 'Preconception and Diabetes Type (1 or 2)'

1.19.2 Pregnant and diabetic

REFER URGENTLY to Antenatal Clinic (Pregnant)

Self-referral (preferred route)
Self-referral form, under 'Referrals': Maternity | Princess Royal University Hospital (PRUH) (kch.nhs.uk)
Patient sends form to PRUH Antenatal Clinic kch-tr.br-maternitypruh@nhs.net

GP referral
ROP/ Obstetrics/ Antenatal Referral Form

If pregnant and not already under the Preconception Diabetes Clinic, urgent assessment in the Diabetes Antenatal Clinic is needed.

If there are specific, acute concerns, bleep the diabetes nurse for maternity at the PRUH (bleep 477).

The Diabetes Antenatal clinic runs every Tuesday and Thursday morning (01689 863 560).

1.19.3 Gestational diabetes

Gestational diabetes is defined as diabetes that develops during pregnancy and usually resolves after delivery of the baby. It is associated with adverse maternal and fetal outcomes.

Screening for gestational diabetes occurs for at-risk patients at the antenatal booking appointment and patients are managed in the Antenatal Diabetes Clinic.

Patients who have a history of gestational diabetes are at increased risk of developing type 2 diabetes later in life and they should be offered:

- HbA1c check in primary care at 13 weeks postnatal and when the patient wishes to conceive again.
- Screen for diabetes annually.

1.20 T2DM: Preferred Medication [17,19,20,34,35,36,37]

	Drug	Starting dose	Daily Range	Notes (these are not extensive, please refer to the latest BNF and/or SPC for further information especially titration increments/cautions/contra-indications)
Biguanide	Metformin	500mg OD	Metformin standard release Start 500mg daily with/after food and increase by 500mg every 2 weeks until on 1g BD or maximum tolerated dose	• Maximum dose standard release: 2-2.5g daily (3g in 3 divided doses in exceptional circumstances) Maximum dose for M/R: 2g once daily with evening meal. • Routine renal function at least annually, 6 monthly for those at risk of renal impairment. • Review dose if eGFR is <45ml/min (also review at 60ml/min if on >2g daily). Stop/avoid if eGFR <30ml/min. • Consider slow-release preparation if standard preparation causes gastrointestinal side effects. • Take with meals to reduce gastrointestinal side effects • Remember sick day rules ☛ page 11 • Manufacturer advises patients and carers should be informed to seek urgent medical advice if symptoms of lactic acidosis e.g. dyspnoea, cramps, abdominal pain • Long term use can reduce B12 absorption – if suspicion of B12 deficiency, monitor B12 serum levels
Sulfonylureas	Gliclazide is SEL preferred sulfonylurea	40mg – 80mg daily	160mg-320 mg daily, doses over 160mg divided. Titrate every 2 weeks according to pre-meal blood glucose – 4-6mmol/L or individualised target or against 3 monthly HbA1c.	• Inform patients of risk of adverse events/hypoglycaemia, particularly if renal impairment • Advise patients on how to manage hypoglycaemia • Self-monitor according to SEL SMBG guidance and DVLA guidance and consider alternative if Group 2 driver (large lorries and buses) • Consider alternative if BMI >35 • Caution in use in elderly, housebound, frail and in certain occupations e.g. operating heavy machinery • Kidneys: gliclazide – use in caution with eGFR 30-60mL/min due to increased risk of hypoglycaemia. Avoid if eGFR<30mL/min • Liver: AVOID in severe hepatic impairment due to increased risk of hypoglycaemia

GLP-1 analogues	Liraglutide, Dulaglutide, Semaglutide	See SEL information sheet	See SEL information sheet	• If triple therapy with metformin and 2 other oral drugs is not effective, not tolerated or contraindicated, consider triple therapy by switching one drug for a GLP-1 analogue: only prescribe in those who
				  • have a BMI of ≥35 kg/m^2 - (lower in certain ethnic groups) and specific psychological or other medical problems associated with obesity **OR**
				  • have a BMI <35 kg/m^2 and – for whom insulin therapy would have significant occupational implications or – weight loss would benefit other significant obesity related comorbidities.

Pioglitazone		15-30mg once daily	Adjust according to response up to 45mg daily	• Safety & efficacy should be reviewed every 3-6 months in continued therapy. • Contraindicated in people with heart failure history, uninvestigated macroscopic haematuria, DKA, hepatic impairment or current/history of bladder cancer • Caution: risk factors for heart failure or for those at increased risk of bone fractures, risk factors for bladder cancer, concomitant use with insulin, elderly. • Patient on dual or triple therapy of pioglitazone with an SU or dual therapy with insulin may be at risk of dose related hypoglycaemia, therefore dose reduction of SU or insulin may be needed.
DPP-4 inhibitors (gliptins)	Sitagliptin 1st line	100mg once daily	Sitagliptin eGFR 30-44 reduce dose to 50mg OD eGFR <30: 25mg OD	• Increased risk of pancreatitis: Dipeptidylpeptidase-4 inhibitors: risk of acute pancreatitis • Patient on dual or triple therapy of DPP4 inhibitors with a SU or dual therapy with insulin may be at risk of dose related hypoglycaemia, therefore dose reduction of SU or insulin may be needed • NB Alogliptin and Saxagliptin are not on SEL formulary. Any initiation should weigh risk of heart failure in patients.
	Linagliptin in severe renal impairment	5mg once daily		

	Drug	Starting dose	Daily Range	Notes (these are not extensive, please refer to the latest BNF and/or SPC for further information especially titration increments/cautions/contra-indications)	
SGLT2 inhibitors (flozins) See SEL guide for prescribing SGLT2 inhibitors and hepatic impairment dosing Note glycaemic benefit will be limited for all SGLT2 inhibitor below eGFR of 45ml/min as the glucose lowering efficacy of SGLT2 inhibitor therapy is dependent on renal function. Further glycaemic control may be required	Canagliflozin	100mg once daily	Increase to 300mg daily if tolerated and required for glycaemic control. eGFR 45-59: max 100mg once daily eGFR <45: Not recommend for glycaemic control in T2DM	**Use with CAUTION in the following circumstances** - Body mass index <25kg/m2 (<23kg/m2 in South Asian people) - Person adhering to a ketogenic/low calorie/low carbohydrate diet/intermittent fasting - Recent weight loss - Potential for pregnancy - People at risk of hypotension/hypovolaemia (e.g. elderly) - People diagnosed with or at risk of frailty - Cognitive impairment or use of medicine compliance aids (may imply inadequate understanding required to follow sick day rules and take action to prevent and identify DKA) - On high dose diuretics for heart failure (may need dose adjustment, contact heart failure team for advice) - On long term or recurrent courses of steroids (either IV or oral) - Raised haematocrit - Severe hepatic impairment - Recurrent urinary tract or genital tract infections - Long duration of diabetes (generally over 10 years since diagnosis) - Person with very high HbA1c (HbA1c >86mmol/mol) - Person considered at high risk of acute effects of hyperglycaemia e.g. dehydration due to non-adherence to medication - Past history of active foot disease/foot ulceration - Existing diabetes foot ulcers - Previous lower limb amputation - History of peripheral arterial disease (PAD) - Taking sulfonylureas and/or insulin – increased risk of hypoglycaemia if started on SGLT2 inhibitors if eGFR>45 ml/min - Recurrent problematic hypoglycaemia - Those with risk factors for DKA e.g. low reserve of insulin secreting cells, conditions that restrict food intake or can lead to severe dehydration, a sudden reduction in insulin or increased requirement for insulin due to illness, surgery.	**AVOID in the following circumstances** - Age <18 years - Pregnant, breastfeeding, planning pregnancy, female in their child-bearing years and sexually active without contraception - Person with excess alcohol consumption or intravenous drug user - Hypersensitivity to active substance or excipients - Acutely unwell person (acute medical illness including COVID19, surgery or planned medical procedure) - Active foot disease or acute ischaemic limb event - Inpatient with vascular event who is not stable - Eating disorder - eGFR lower than allowed in the up-to date licensing of the medication being considered (see SPC) - Multiple pre-disposing risks for Fournier's gangrene - Clinical features of significant insulin deficiency e.g. weight loss, symptoms of hyperglycaemia - Organ transplant (unlicensed - discuss with diabetes team) - T1DM or suspected or possible T1DM - Current/past history of DKA including ketone prone T2DM - Any diagnosis or suspicion of latent autoimmune diabetes (LADA), other genetic causes of diabetes, known pancreatic disease or injury - Rapid progression to insulin (within 1 year of diagnosis) - Recent major surgery **Discuss risks and benefits, side effects and sick day rules** Side effects include: Increased risk of urinary tract and genital tract infections, polyuria and polydipsia, thirst, postural dizziness, hypotension, dehydration, hypoglycaemia with insulin or SU. Uncommon but serious: DKA, Fournier's gangrene, lower limb amputation, fracture risk **Ensure adequate understanding of:** - Routine, preventative foot care. - Importance of keeping hydrated and drinking plenty of sugar free fluids. If restricting fluid due to other conditions e.g. heart failure, please contact heart failure team for advice and guidance (unless advised to restrict fluids by healthcare professional due to kidney or heart problems or some other reason) - Minimising risk of DKA by not starting a very low carbohydrate diet or ketogenic diet without discussing with healthcare professional first - Management and prevention of hypoglycaemia
	Dapagliflozin	10mg once daily	eGFR <45: Not recommend for glycaemic control in T2DM		
	Empaglifozin (Initiation not recommended in adults >85yrs)	10mg once daily	eGFR ≥ 60: Increase to 25mg if tolerated and required for glycaemic control eGFR 45-59: Continue with 10mg for those already taking empagliflozin eGFR 30-59: Initiate 10mg only if established CVD eGFR <30: Not recommend for glycaemic control in T2DM		
	Ertugliflozin (ertugliflozin to reduce CVD risk when blood glucose is well controlled is off label)	5mg once in the morning	Increase to 15mg once daily if tolerated and required for glycaemic control eGFR 45-59: do not initiate, continue 5mg or 15mg for those already taking eGFR <45: Not recommended for glycaemic control in T2DM		

	Drug	Starting dose	Daily Range	Notes (these are not extensive, please refer to the latest BNF for further information especially titration increments/cautions/contra-indications)
ACEI	1st line Ramipril	2.5mg OD (1.25mg OD in frail/elderly patients)	2.5mg-10mg OD	• For people of Black African or African-Caribbean family origin, use ARB instead of ACEI (as increased risk of angioedema with ACEI) • Check base line U&Es and renal profile (Na/K/Cr/eGFR). Hyperkalaemia may occur, therefore close monitoring of serum potassium is required • Re-check renal profile within 2 weeks of initiation or dose increase and then at least annually. • **Titrate ACEI/ARB up at 2-4 weekly intervals to achieve optimal BP control** • Initiation/dose titration: if Cr increases by >20% (or eGFR falls by >15%) stop ACEI and seek specialist advice. ACEI dose should only be increased if serum creatinine increases by <20% (or eGFR falls by <15%) after each dose titration and potassium <5.5mmol • **ACEI/ARB dose should be optimised before the addition of a second agent** • Side effects: symptomatic hypotension can occur on first dosing – suggest take at night. Dry cough with ACEI, consider switch to ARB • **Caution:** Do not combine ACEI and ARB to treat hypertension • For diabetic nephropathy ARB of choice: losartan and irbesartan
	2nd line Lisinopril	10mg OD	10-80mg OD (maintenance dose 20mg for hypertension)	
ARBs	Losartan	50mg OD (25mg OD if >75yrs old)	50-100mg OD	
	Candesartan	8mg OD	8mg-32mg OD	
CCBs	Amlodipine	5mg OD	5-10mg OD	• Increase after 2-4 weeks to maximum dose of 10mg OD. • Caution: Interacts with simvastatin – consider switching to atorvastatin. • If amlodipine causes ankle oedema consider using a thiazide-like diuretic instead • CI: unstable angina, aortic stenosis, severe hypotension • Side effects include flushing and headaches at initiation; swollen ankles especially at higher doses
Thiazide-like diuretics	Indapamide (IR)	2.5mg OD	2.5mg OD	• Check baseline renal profile, then after 2 weeks, then at least annually. If K < 3.5mmol/L or eGFR <25ml/min, stop indapamide and seek specialist advice.
Aldosterone receptor antagonist (K+ sparing diuretic)	Spironolactone	25mg OD	25mg OD	• Step 4: Spironolactone is the preferred diuretic at step 4 (NICE), but is an unlicensed indication in resistant hypertension (BNF) • Consider only if potassium ≤4.5mmol/L (caution in reduced eGFR <30ml/min, as increased risk of hyperkalaemia). Monitor Na/K/renal function within 1 month and repeat 6 monthly thereafter • If K>4.5mmol/L should be stopped.
α-B	Doxazosin (IR)	1mg OD	2-16mg OD (or BD dosing when >8mg/day)	• Consider at Step 4 if potassium ≥ 4.5mmol/L. Initial dose of 1mg usually increased after 1-2 weeks to 2mg OD • At doses above 8mg/day, consider split dosing from OD to BD to reduce BP variation • **Caution:** Initial dose as may cause postural hypotension, avoid in elderly as orthostatic hypotension risk
β-B	Atenolol	25mg OD	25-50mg OD	• Consider at Step 4 if potassium ≥ 4.5mmol/L. • **Particular caution in T2DM – symptoms of hypoglycaemia may be masked.** • Beta blockers may be considered in younger people and in those with an intolerance/CI to ACEI/ARBs, women of childbearing potential, co-existent anxiety/tachycardia/heart failure. • **CI:** asthma, 2nd/3rd degree AV block, severe PAD • **Caution:** beta blockers can cause bradycardia if combined with certain CCBs e.g. Verapamil/Diltiazem
	Bisoprolol	5-10mg OD	5-20mg OD	
Statin (See page 9)	Atorvastatin (alternative is rosuvastatin)	20mg OD	20-80mg OD	• Seek specialist advice if eGFR <30ml/min, liver disease, untreated hypothyroidism, heavy drinker • CI in pregnancy, breast feeding, avoid or address contraceptive needs women of childbearing age. Advise to stop 3 months before conception. • Multiple drug interactions, check BNF for advice, avoid grapefruit juice • Advise patient to visit GP if they experience unexplained muscle pains • Refer to SEL IMOC Guidelines on Lipid Management

2 Educational Resources

2.1 Professional resources

Cambridge Diabetes Education Programme comprehensive, competence-based learning. Free for all Bromley clinicians www.cdep.org.uk – contact BETH at broccg.beth@nhs.net for the registration code.

Diabetes in Healthcare Diabetes UK free online learning for health professionals

RCGP Diabetes Hub

RCGP Quality Improvement Toolkit for Diabetes Care

Personalised Care Institute

Primary Care Diabetes Society

2.2 Patient resources

Diabetes Book and Learn NHS South London Diabetes Education Booking Service

The Diabetes UK Bromley Group Support and information for everyone with diabetes and their carers.

Diabetes UK Website

Health and Care videos on Diabetes

Diabetes and Looking After Your Feet Diabetes UK patient leaflet

HEAL-D | Lifestyle for diabetes in African & Caribbean communities

3 Bromley Clinical Support

3.1 Community Diabetes Centre

Telephone Advice:

- Office Hours: Community Diabetes Centre 01689 865911
- Out of Hours: Consultant Connect: (your practice has a specific phone number for Consultant Connect or contact via the Consultant Connect app)

REFER
ROP - Diabetic Medicine / Referrals/ Community Diabetes Referral Form

4 T2DM and COVID-19

4.1 COVID-19

https://selondonccg.nhs.uk/covid_19/diabetes/ SEL COVID-19 clinical support

5 Advanced Primary Care Practice

5.1 Advanced Primary Care Practices (APCPs) in Bromley

5.1.1 What is an Advanced Primary Care Practice (APCP)?

An APCP is a Bromley practice that works with Bromley Healthcare (BHC) Diabetes Service and signs up to either:

- initiate and manage injectable antidiabetic therapies
  or
- manage injectables which have been started by the BHC Bromley Diabetes Service (referred by the GP to the Diabetes Service and discharged once stable, usually within 6-8 weeks)

5.1.2 What courses are needed for APCP healthcare professionals?

An APCP needs two or more healthcare professionals from their practice (including a GP) who have attended an advanced diabetes course which includes initiation and management of insulin:

- university-accredited: Warwick, Kings, Leicester
  or
- RCGP/RCN courses: MERIT, TOPICAL.

The professionals must maintain their continuing professional development and show annual evidence of Diabetes CPD.

5.1.3 Key Performance Indicators (KPIs)

An APCP agrees to meet a set of KPIs and share their data with BHC. This is added to a dashboard which can be monitored for achievement by BHC and the allocated diabetes specialist nurse, allowing assessment of what areas of support may be required and thus enabling a bespoke training/support package to be offered.

KPI payments to practices are based on the number of patients on the practice register who had a Diabetes Care Plan documented for that year, pro-rata.

5.1.4 Practice and Patient Benefits

Practice benefits:

- In-house specialist support for practice staff.
- Enhanced skills in diabetes.
- Ability to give quicker access to treatment for patients.
- Supported by a named DSN who has direct access to a consultant.
- Virtual facilitation clinics - enabling review of multiple patients in a short period of time.
- Improved clinical outcomes.
- Access to performance reports.
- Bespoke template and reporting tools built into EMIS.
- Increased QOF and NDA compliance.
- Easier access to specialist services for complex patients – pumps, preconception, Young Adult Clinics, renal clinics, etc.

Patient benefits:

- Seen by a primary care professional, who is more likely to know their medical history as well as social/psychological issues.
- Quicker access to diagnosis and treatment.
- Seen close to home - does not have to travel to a hospital site: easier access.
- Relationship with the HCP is already in place.
- Complex patients can be seen at BHC diabetes service rather than travelling to Kings at Denmark Hill.

6 Abbreviations

6.1 Abbreviations

2WW – Two week wait referral

α-B – Alpha blocker

A&E – Accident and Emergency

ABPM – Ambulatory blood pressure monitoring

ACEI– Angiotensin converting enzyme inhibitor

ACR – Albumin-creatinine ratio

ALT – Alanine aminotransferase

APCP – Advanced Primary Care Practice

APL – Active Patient Link tools

ARB – Angiotensin receptor blocker

AST – Aspartate aminotransferase

BAME – Black, Asian and Minority Ethnic

β-B – Beta blocker

BD – Twice daily (dosing)

BHC – Bromley Healthcare

BMI – Body mass index

BP – Blood Pressure

CES – Clinical Effectiveness Southwark

CCB – Calcium channel blocker

CK – Creatinine Kinase

CKD – Chronic Kidney Disease

Cr – Creatinine

CVD – Cardiovascular disease

DASH – Dietary approaches to stop hypertension

DESMOND – Diabetes Education and Self-Management for Ongoing and Diagnosed

DPP – Diabetes Prevention Programme

DVLA – Driver and Vehicle Licensing Agency

DXS – Point-of-care tool for EMIS Web

ECG – Electrocardiogram

eGFR – Estimated glomerular filtration rate

ERS – Electronic Referral System

F2F – Face to face

FBC – Full blood count

GSTT – Guy's and St. Thomas' Hospital

IMOC – Integrated Medicines Committee

IR – Immediate release

K – Potassium

KCH – King's College Hospital

HbA1c – Haemoglobin A1c %

HBPM– Home blood pressure monitoring

IGR – Impaired glucose regulation

IHD – Ischaemic Heart Disease

LFT – Liver function tests

LGT – Lewisham and Greenwich NHS Trust

LADA – Latent autoimmune diabetes in adults

MDft – Multidisciplinary foot team

NDA – National Diabetes Audit

NSAID – Non steroidal anti-inflammatory

OD – Once daily (dosing)

PAD – Peripheral Arterial Disease

PCOS – Polycystic Ovarian Syndrome

PHM – Population health management (contract)

PLT – Protected Learning Time

PMS – Primary medical services (contract)

PRUH – Princess Royal University Hospital

QOF – Quality and outcomes framework (contract)

QRISK2 – a prediction algorithm for CVD. EMIS currently using QRISK2 (although QRISK3 released in 2017)

RCGP – Royal College of General Practitioners

Renal profile – this includes serum sodium/potassium/creatinine/eGFR

ROP – Referrals Optimisation Protocol

SEL – South East London

SPC – summary of product characteristics

SPLW – Social Prescribing Link Worker

T2DM – Type 2 Diabetes Mellitus

TIA – Transient ischaemic attack

TFT – Thyroid function blood tests

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Access this guide online at: Clinical Effectiveness South East London (CESEL) - South East London CCG (selondonccg.nhs.uk) or via the Referrals Optimisation Tool (Diabetic Medicine/Professional Resources).

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