South East London Integrated Care System

NHS South East London

SMR's in problematic polypharmacy: diabetes focus

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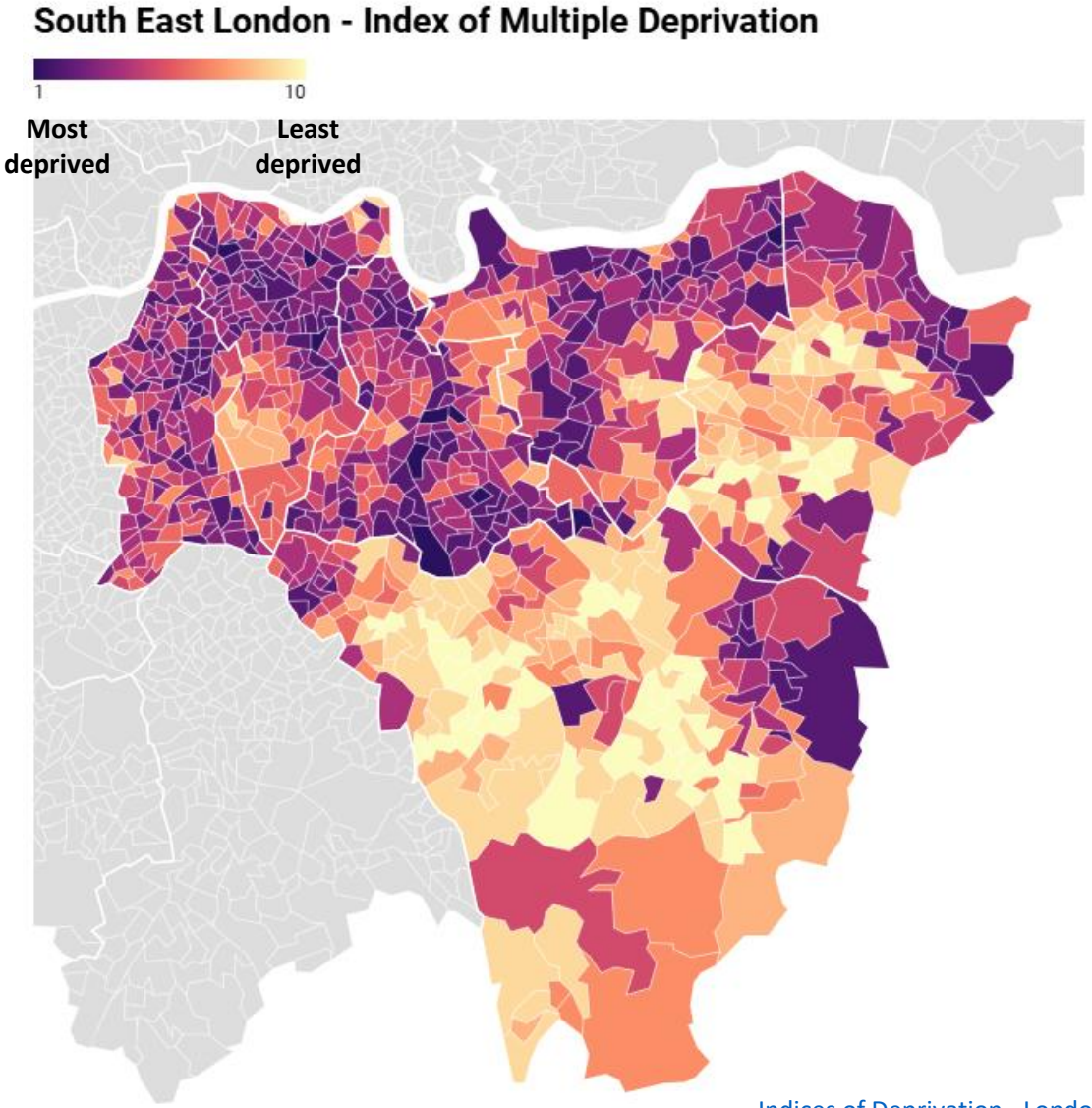
Declaration of interests

- **Anna Hodgkinson, within employed role:**
  - Part of pilot with Abbott around use of Freestyle Libre 2 (intermittently scanned CGM) in defined cohorts in T2DM
  - Part of joint working project with Boehringer Ingelheim optimising outcomes in T2DM
  - Provided education to NovoNordisk employees as part of education/training program

Background to our local population, South East London

- **Ethnically diverse** population (>40% non-white)
- **High burden of cardiorenal metabolic diseases** with onset at an earlier age
- QoF registers in SEL:
  - **125,000** people with diabetes
  - **63,000** people with CKD 3-5
  - **40,000** people with established CV disease



Indices of Deprivation - London Datastore

Cardio-renal metabolic disease

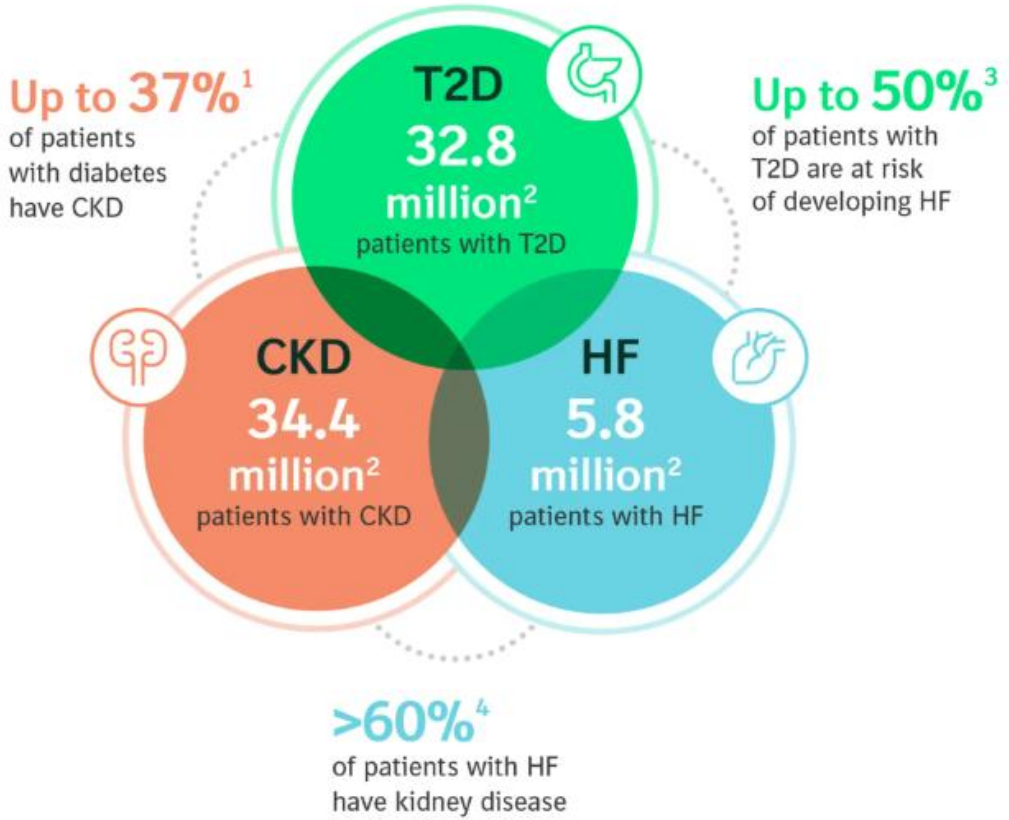
Cardiovascular disease is the greatest long term risk in diabetes

Approximately 1/3 of people with diabetes have kidney disease

People with CKD are 20 times more likely to die of cardiovascular disease than end-stage renal disease

Every week diabetes leads to >190 amputations, 770 strokes, 590 heart attacks and more than 2300 cases of heart failure

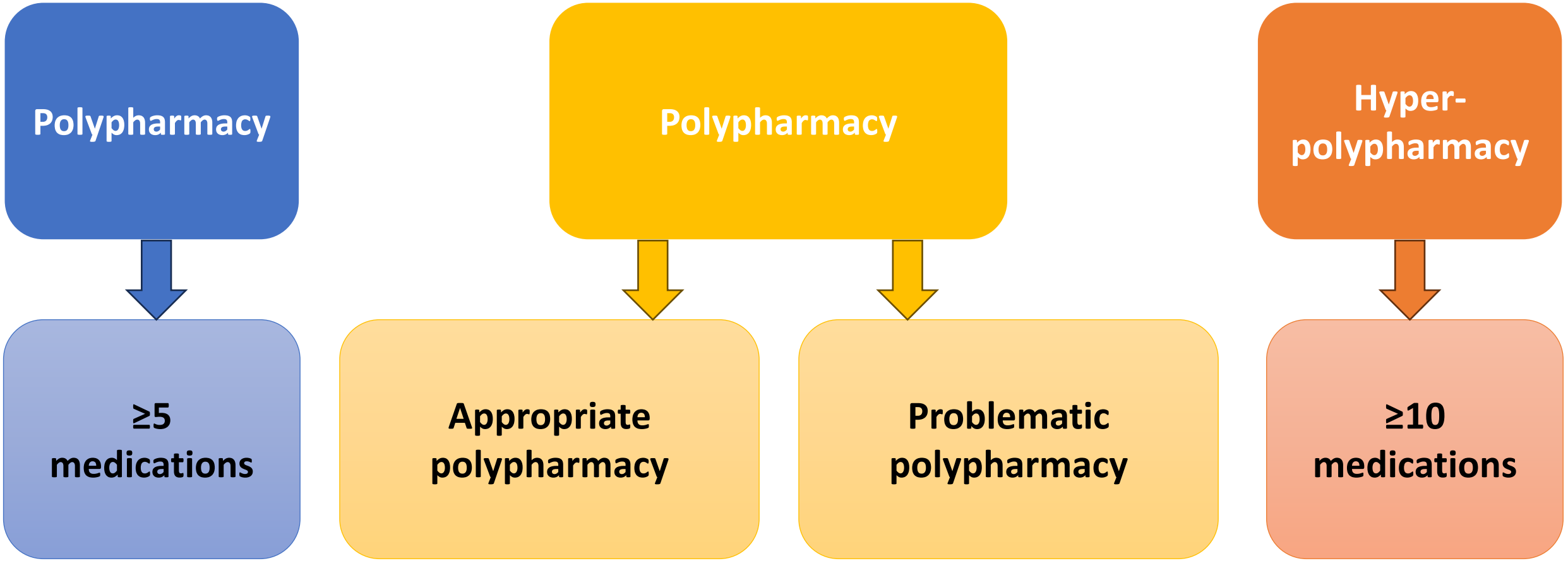
Optimal control of all risk factors can reduce CV events and mortality in diabetes by 50%



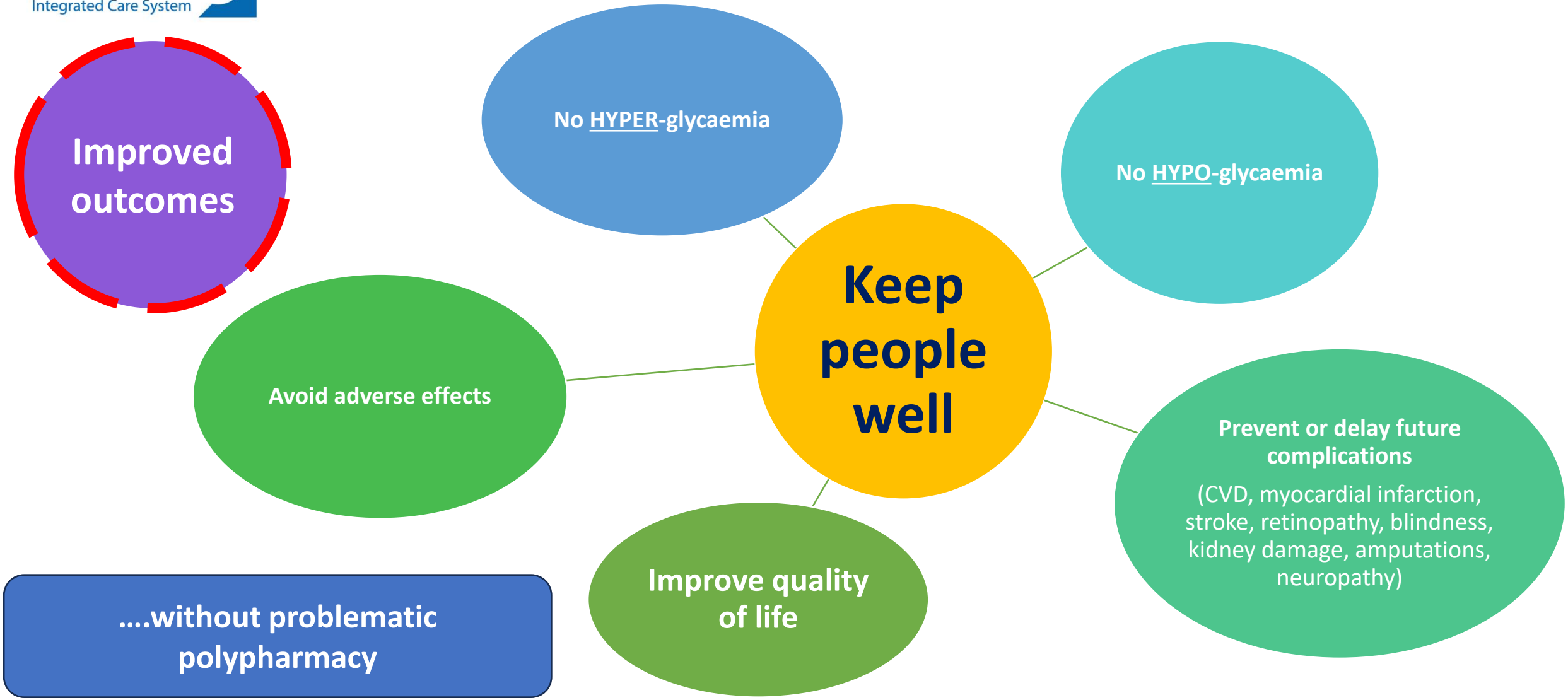
CRM evidence based prognostic therapies

HbA1c	BP	Cholesterol	CKD CVD (HF)
Metformin	RAS inhibitor	Statin	RAS inhibitor
SGLT2 inhibitor	Calcium channel blocker		SGLT2 inhibitor
Gliptin/SU/ Pioglitazone	CV risk reduction		MRA
GLP-1 analogues	SGLT2 inhibitor	GLP-1 analogues	?GLP-1 analogues

Polypharmacy in diabetes/CVRM



Diabetes - aims of treatment



Case study 1 – Thomassina

80F, South Asian

- **Past medical history:**
  - CKD stage G3aA1
  - T2DM
  - Hypertension
  - Depression
  - NKDA

Social history

- Lives alone
- Non-smoker, nil alcohol
- Exercise limited
- Wears glasses
- Does not drive

Drug history:

- Metformin 1g BD
- Sitagliptin 100mg OD
- Gliclazide 80mg with breakfast, 160mg with evening meal)
- Repaglinide 500 micrograms with breakfast
- Atorvastatin 20mg OD
- Ramipril 10mg OD
- Amlodipine 10mg OD
- Sertraline 100mg OD
- Co-codamol 30/500mg, 2 QDS PRN
- Gabapentin 300mg BD
- Laxido sachets OD PRN

OTC:

- No herbal/alternative/internet medication

Results

- eGFR: 56ml/min
- K+: 4.2 mmol/L
- uACR: 2.9 mg/mmol
- HbA1c: 63 mmol/mol
- Total cholesterol: 3.9 mmol/L
- LDL-C: 1.8 mmol/L

Observations

- BP 135/79 mmHg
- BMI 26.6 kg/m2
- KFRE: 2year <0.1%, 5 years 0.1%

Referred to community diabetes team for optimisation of HbA1c level

Additional SMR information

- **Blood glucose levels**
  - pre-breakfast 6-8mmol/L
  - pre-evening meal 5 -10mmol/L
  - reports readings 3.4-3.8mmol/L ~midday once or twice a week
- **Renal function & profile stable**
- **9 care processes undertaken:**
  - Smoking
  - HbA1c
  - Creatinine and uACR
  - BMI
  - Blood pressure and cholesterol
  - Eye screening and foot checks
- **Ordering medication regularly**
  - Adherence screening identified no concerns apart from gabapentin
- **No recent hospital admissions**
- **Recent change in vision**
- **Dietary intake:**
  - **Breakfast:** porridge with blueberries or scrambled eggs and tomatoes
  - **Lunch:** cheese sandwich, one piece of fruit, water
  - **Evening meal:** rice, fish, vegetables, yoghurt or ice cream
  - **Snacks:** crisps, nuts
  - **Drinks:** tea with milk, water

Thomassina:

- Thinks her diabetes levels are too high but doesn't know what to do
  - She checks her glucose levels twice daily but she doesn't know what to do with the numbers
- Wonders if one of her tablets is causing dizziness before lunch. She knows she has to check her glucose levels when it is low and have a sugary drink if <4mmol/L
- Would like to know what her medications are for – are they all needed, there seems to be a lot
- Stopped taking gabapentin a few weeks ago as she didn't think it was working

Medical approach

A: A1c

HbA1c 63mmol/mol
Below target (~64)

Current meds:

- Metformin 1g BD
- Sitagliptin 100mg OD
- Gliclazide 80mg MANE, 160mg NOCTE
- Repaglinide 500 micrograms MANE

B: BP

BP 135/79mmHg
~At target

Current meds:
-Ramipril 10mg OD
-Amlodipine 10mg OD

C: Chol

TC 3.9
LDL 1.8

Current meds:
-Atorvastatin 20mg OD

D(KD)

eGFR 56ml/min
Urine ACR 2.9
CKD G3aA1

Current meds:
-Ramipril 10mg OD
- Atorvastatin 20mg OD

Holistic review & shared decision making




Current plan	• Stop repaglinide • H • •			• eGFR stable
Future plan	• • • •			

Address Thomassina's concerns and questions

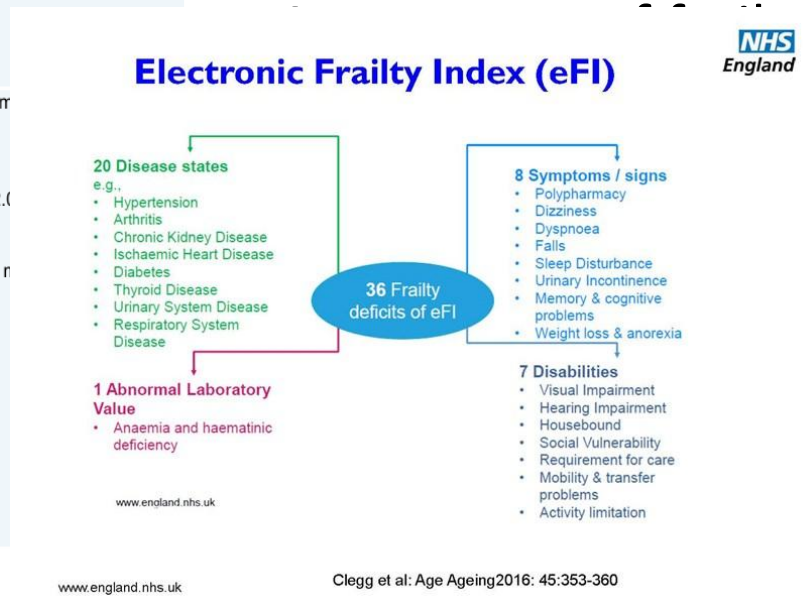
Diet and lifestyle

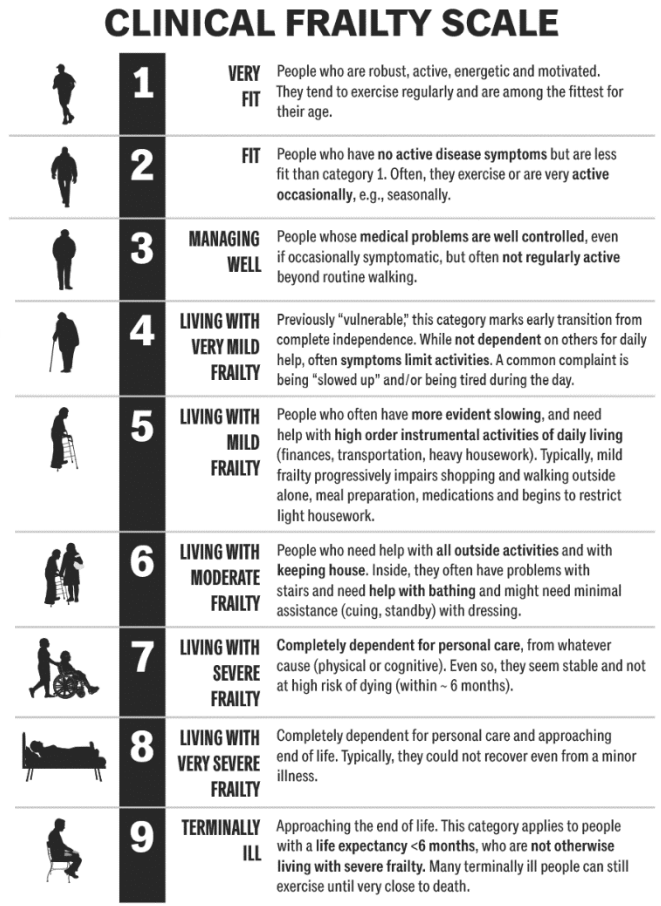
T2DM & Frailty UK Guidelines

Level of frailty	Status	Treatment goals	Recommended interventions	Recommended targets
Healthy/pre-frail/mild frailty	• Functional and independent • Life expectancy of >10 years	• Reverse frailty or limit its progression • Maintain functional status, independence and QoL • Prevent or delay macro/ microvascular complications	• Tight glycaemic control • Resistance exercise and nutritional interventions. • Statin therapy unless contraindicated/ not tolerated	• HbA1c 58 mmol/mol but ≥53 mmol/mol • FPG 5.0–8.0 mmol/L • BP <140/90 mmHg
Moderate frailty	• > 2 comorbidities • Reduced life expectancy	• Prevent decline in QoL • Limit the progression of microvascular complications • Avoid metabolic emergencies such as hypoglycaemia	• Glycaemic control. • Assess and reduce cognitive decline • Statin therapy unless contraindicated/ not tolerated	• HbA1c <64 mmol/mol but ≥ 58 mmol/mol • FPG 6.0– 10.0 mmol/L • BP <140/90 mmHg
Severe frailty	• Significant comorbidity, functional deficits, and limited independence • Markedly reduced expectancy	• Improve QoL by reducing symptoms or hospitalisations • Maintain functional status, preventing further lower limb dysfunction, preventing significant disability	• Less aggressive glycaemic targets but avoid hypoglycaemia and be aware that hyperglycaemia can increased risk of infection and cause urinary incontinence, life thirst and dehydration • Consider whether statin therapy is beneficial	• HbA1c <69 m mmol/mol • FPG 7.0–12. • BP <150/90 m

2024 NHS Type 2 Diabetes & Frailty Prescribing Guideline
Available at: Type-2-diabetes-prescribing-in-frailty-v1.1-September-2024.pdf

- Prognosis and appropriate treatment goals for older adults with diabetes vary greatly according to frailty.
- Older adults are more prone to hypoglycemia and a its consequences, in hospitalization, card all-cause mortality.

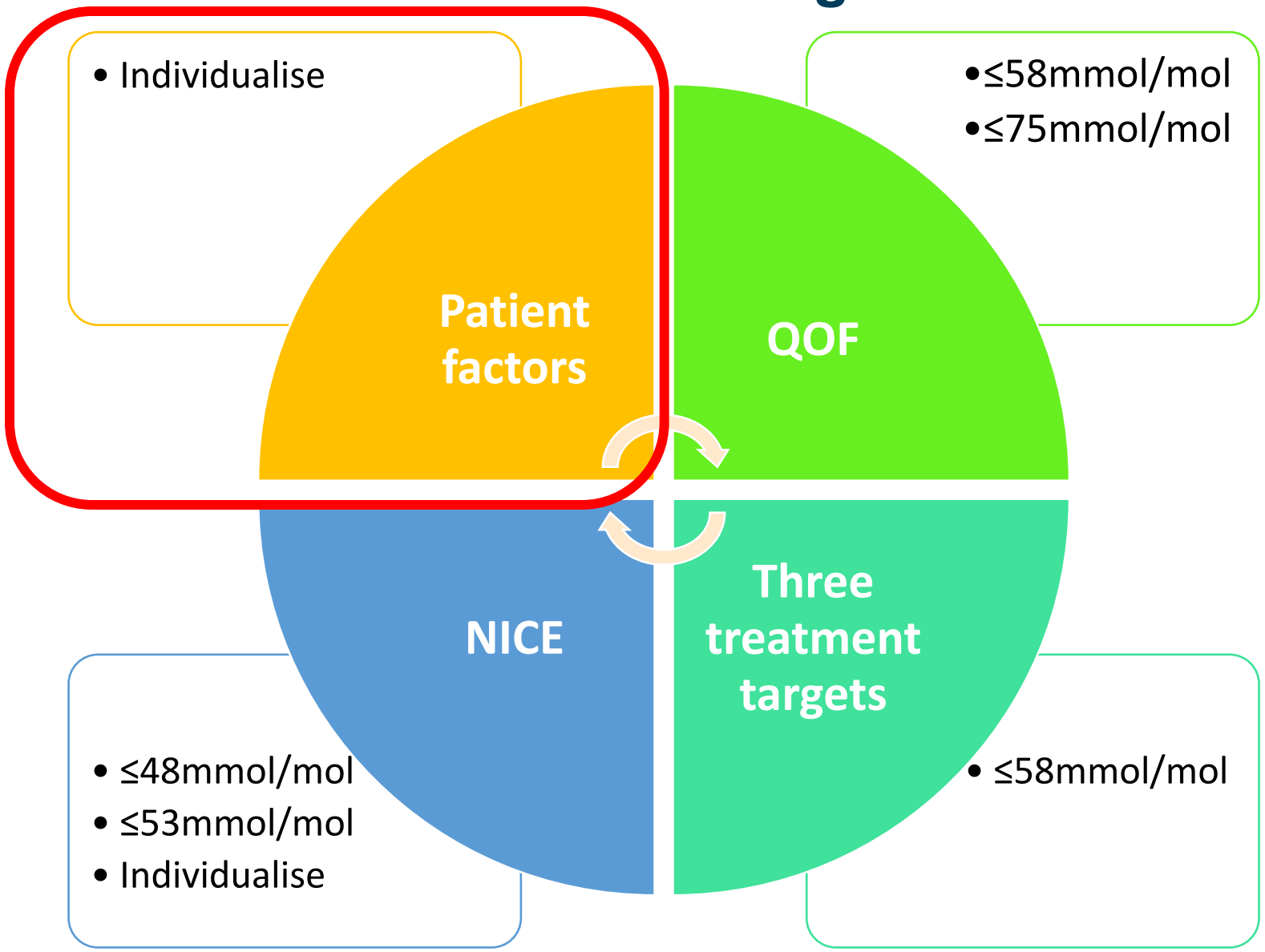




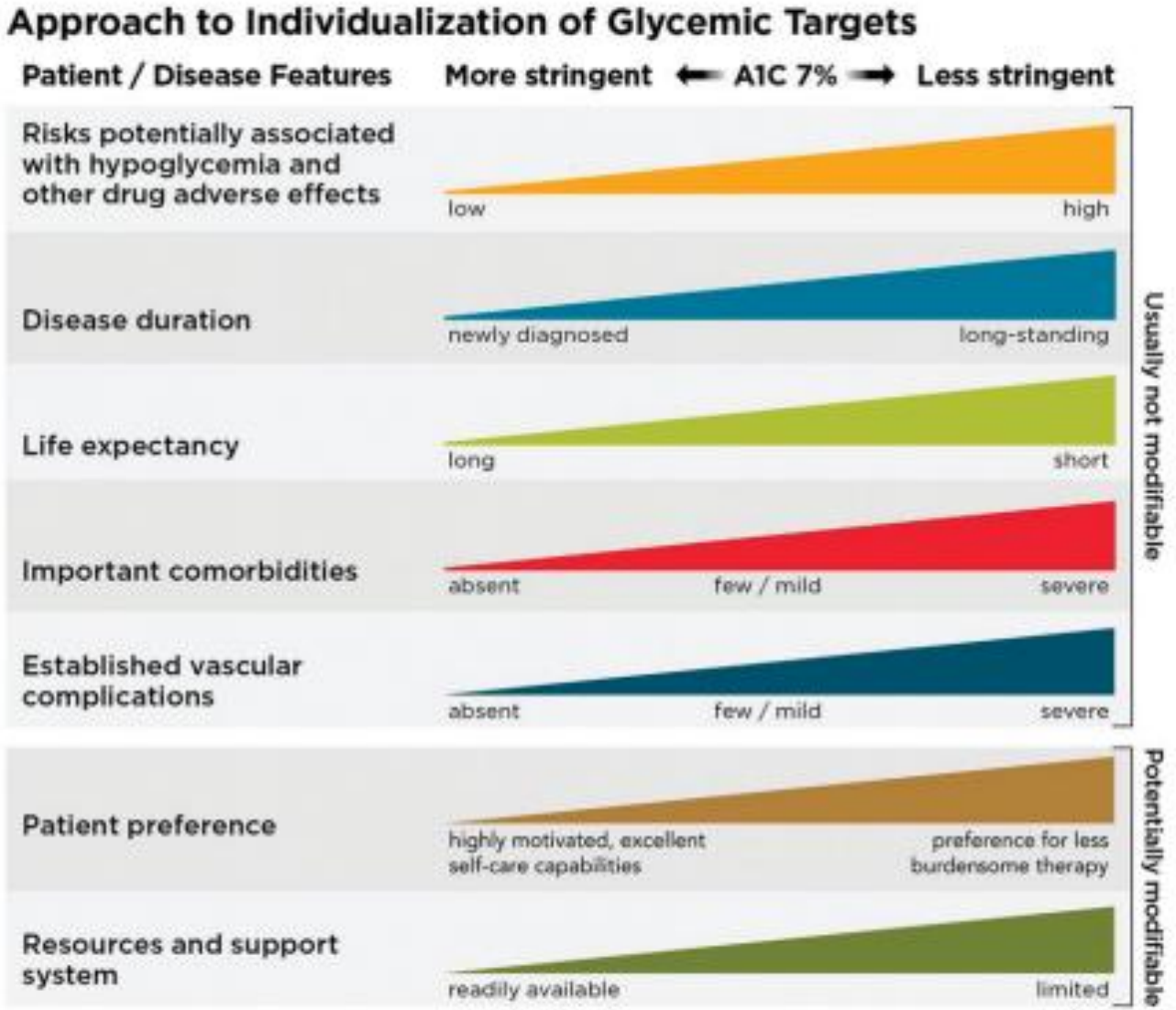
Essential to avoid hypoglycaemia

- **Older adults more prone to hypoglycaemia**
  - Renal dysfunction
  - Polypharmacy
  - High risk hypo meds
  - Weight loss
  - Changes to dietary intake
  - Cognitive impairment
- **Presentation may change**
  - Dizziness, confusion and visual disturbances > adrenergic symptoms
  - Can be mistaken for dementia or neurological problems
- **Impact can be significant**
  - Falls/fractures
  - Cognitive decline
  - CV events
  - Hospitalisations
  - All cause mortality - ACCORD
  - Counter regulation impaired – hypo unawareness
- **Impact wider than health**
  - Decrease in confidence
  - Social isolation
  - Self care capacity
  - Driving consequences
  - Cognitive status
  - Emotional wellbeing

T2DM HbA1c targets



Individualising HbA1c targets



Glycaemic targets: standards of Medical Care in Diabetes 2022. *Diabetes Care* 2022;45(Supplement_1):S83–S96

Summary

- **Polypharmacy is common in diabetes**
  - mLTC
  - Earlier diagnosis = people living with mLTC for longer
  - Number of evidence based prognostic medications
- **Right medication for the right patient**
  - Recognise that patient factors change: think medical, physiological and social aspects
  - Regular review essential
  - Holistic approach
  - Risk vs benefit
  - Avoid problematic polypharmacy
  - Think about wider impact of medications
- **Important to individualise HbA1c, glucose and blood pressure targets**
  - Person centred approach