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Our Healthier South East London Integrated Care System

NHS

Southwark PLT March 2023

CKD Management in Primary Care (Adults)

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Agenda

13:00 – 13:10	Introduction and CKD Quiz	CESEL
13:10 – 13:30	CKD: the forgotten risk factor for CVD	Dr Kate Bramham
13:30 – 13:40	Southwark CKD data	CESEL
13:40 – 14:20	Case Studies + CESEL CKD guide	CESEL and Dr Kate Bramham
14:20 – 14:30	Q&A	All

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- ✓ Slides will be shared
- ✓ Please answer questions at menti.com (code above)
- ✓ Questions will be collated and answered either in real time in the chat, or at the end in Q&A session
- ✓ Practice support around CKD is available through CESEL and your facilitators

Southwark team

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POP QUIZ

How much do you already know about CKD?

Mentimeter question 1

A kidney health check consists of:

1) Renal profile blood test (eGFR) only
2) Renal profile blood test (eGFR) and Urine ACR
3) Renal profile blood test (eGFR), Urine ACR, Renal ultrasound
4) Renal profile blood test (eGFR), Urine ACR, urine dipstick
5) Renal profile blood test (eGFR), Urine ACR, Renal ultrasound and urine dipstick

You should offer a statin to patients with CKD who have

1) CKD stage 3-4
2) QRISK >10%
3) QRISK >20%
4) All patients with CKD

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Mentimeter answer 1

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Mentimeter question 2

Which of the following patients need their urinary ACR checked? (select all that apply)

1) Newly found eGFR <60ml/min
2) Incidental protein/blood on urine dipstick
3) Patient with benign prostatic hypertrophy
4) Patient on long term tacrolimus
5) AKI 2 years ago
6) Patient with well controlled hypertension
7) Patient with Systemic Lupus Erythematous

You can have CKD with a normal eGFR

1) Yes
2) No

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Mentimeter answer 2

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You can have CKD with a normal eGFR

1) Yes
2) No

Why is CKD important?

Dr Kate Bramham- Consultant Nephrologist, Kings College Hospital

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Learning Objectives

- Understand the role of CKD as a major contributing factor to CVD risk
- Update on NICE recommended treatments for prevention of CVD and renal disease progression in CKD
- Discuss strategies to embed new treatments into clinical care

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CVD Prevention in Primary Care

CVD prevention is a national priority

"Cardiovascular disease causes a quarter of all deaths in the UK and is the largest cause of premature mortality in deprived areas.

This is the single biggest area where the NHS can save lives over the next 10 years."

Ambition: To Prevent 150,000 strokes, heart attacks and cases of dementia in 10 years

National CVDPREVENT audit introduced in 2021 – to identify variation, trends, and opportunities in the prevention and management of CVD conditions.

CVDPREVENT

NHS Long Term Plan
#NHSLongTermPlan

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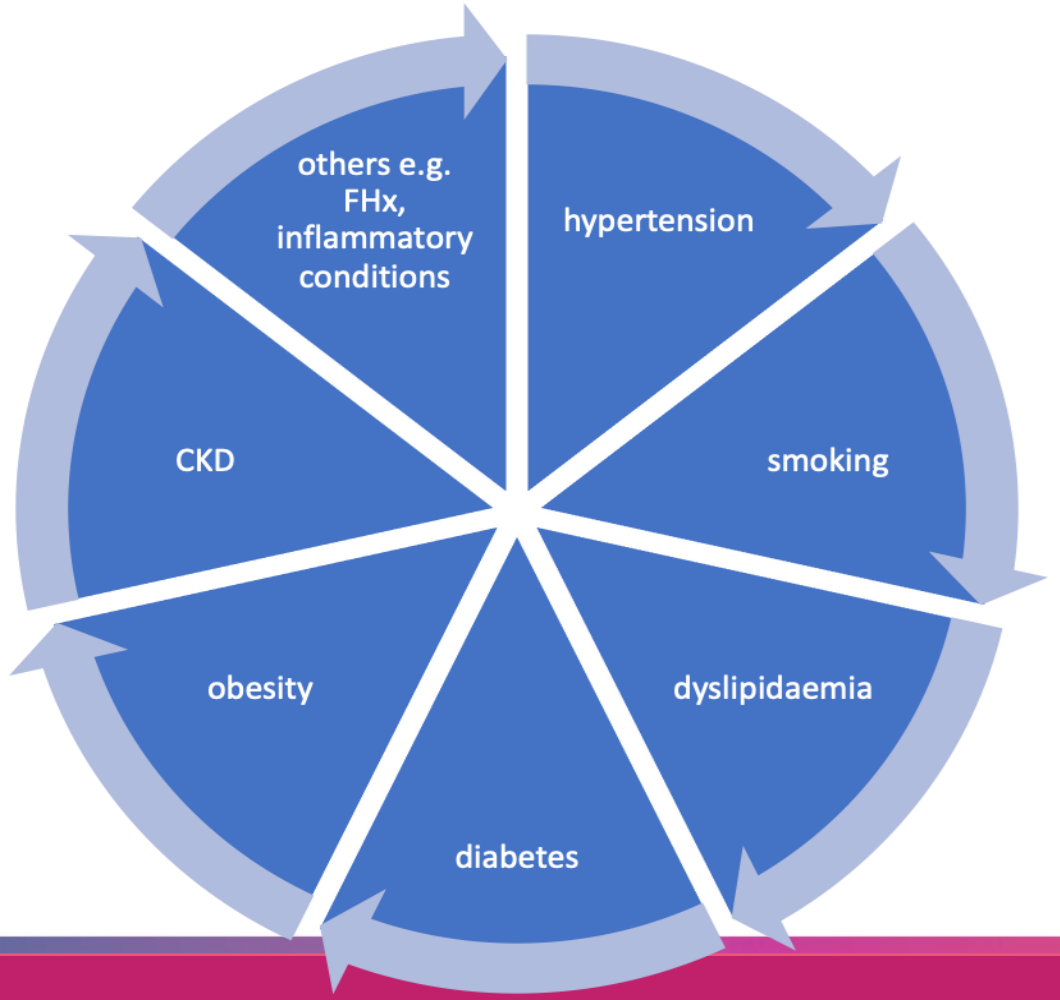
CKD is a relatively unrecognised risk factor – with previously limited opportunities to modify



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What is Chronic Kidney Disease? (CKD)

'The presence of **kidney damage, mainly albuminuria,** and/or decreased kidney function (estimated glomerular filtration rate [eGFR] **<60 mL/min/1.73** m^2) for at least 3 months (Levey and Coresh, 2012)'

eGFR Calculated by CKD-EPI equation

Albuminuria not proteinuria testing

Recent Key Changes:
No longer use ethnicity Correction for eGFR Calculation (NICE CKD Guidelines 2021)

Classification of chronic kidney disease using GFR and ACR categories

GFR and ACR categories and risk of adverse outcomes			ACR categories (mg/mmol), description and range		
			<3 Normal to mildly increased	3–30 Moderately increased	>30 Severely increased
			A1	A2	A3
GFR categories (ml/min/1.73 m^2), description and range	≥90 Normal and high	G1	No CKD in the absence of markers of kidney damage		
	60–89 Mild reduction related to normal range for a young adult	G2			
	45–59 Mild–moderate reduction	G3a[1]			
	30–44 Moderate–severe reduction	G3b			
	15–29 Severe reduction	G4			
	<15 Kidney failure	G5			

Increasing risk

Increasing risk

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Why is CKD a risk factor for CVD?

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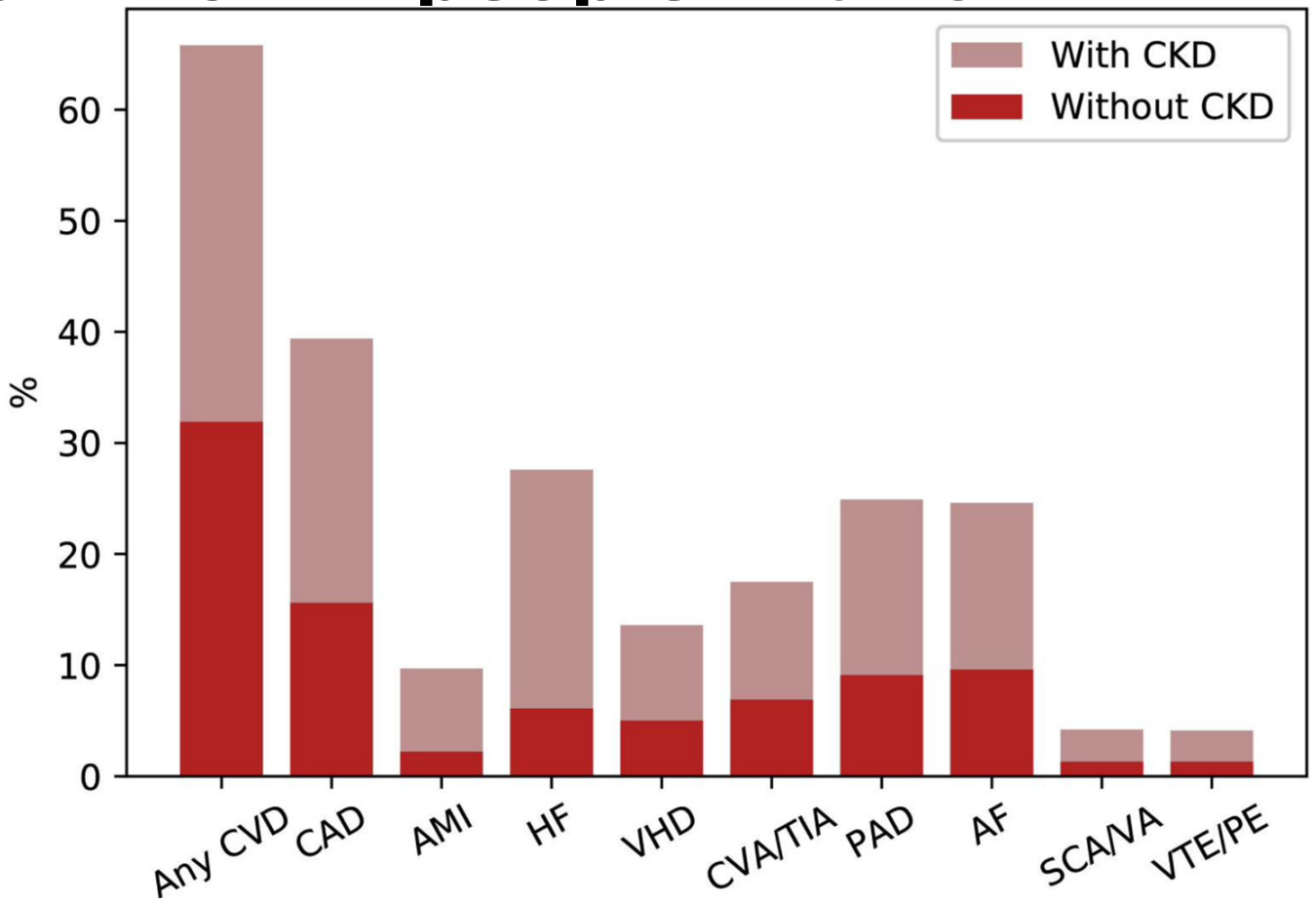
All forms of Cardiovascular Disease are more common in people with CKD



Prevalence of common cardiovascular diseases in patients with or without CKD in United States (2015)

Derived from Provenzano et al 2019
https://doi.org/10.3389/fcell.2019.00314

AF, atrial fibrillation; AMI, acute myocardial infarction; CAD, coronary artery disease; CKD, chronic kidney disease; CVA/TIA, cerebrovascular accident/transient ischemic attack; CVD, cardiovascular disease; HF, heart failure; PAD, peripheral arterial disease; SCA/VA, sudden cardiac arrest and ventricular arrhythmias; VHD, valvular heart disease; VTE/PE, venous thromboembolism and pulmonary embolism

AND with microalbuminuria – risk is intensified

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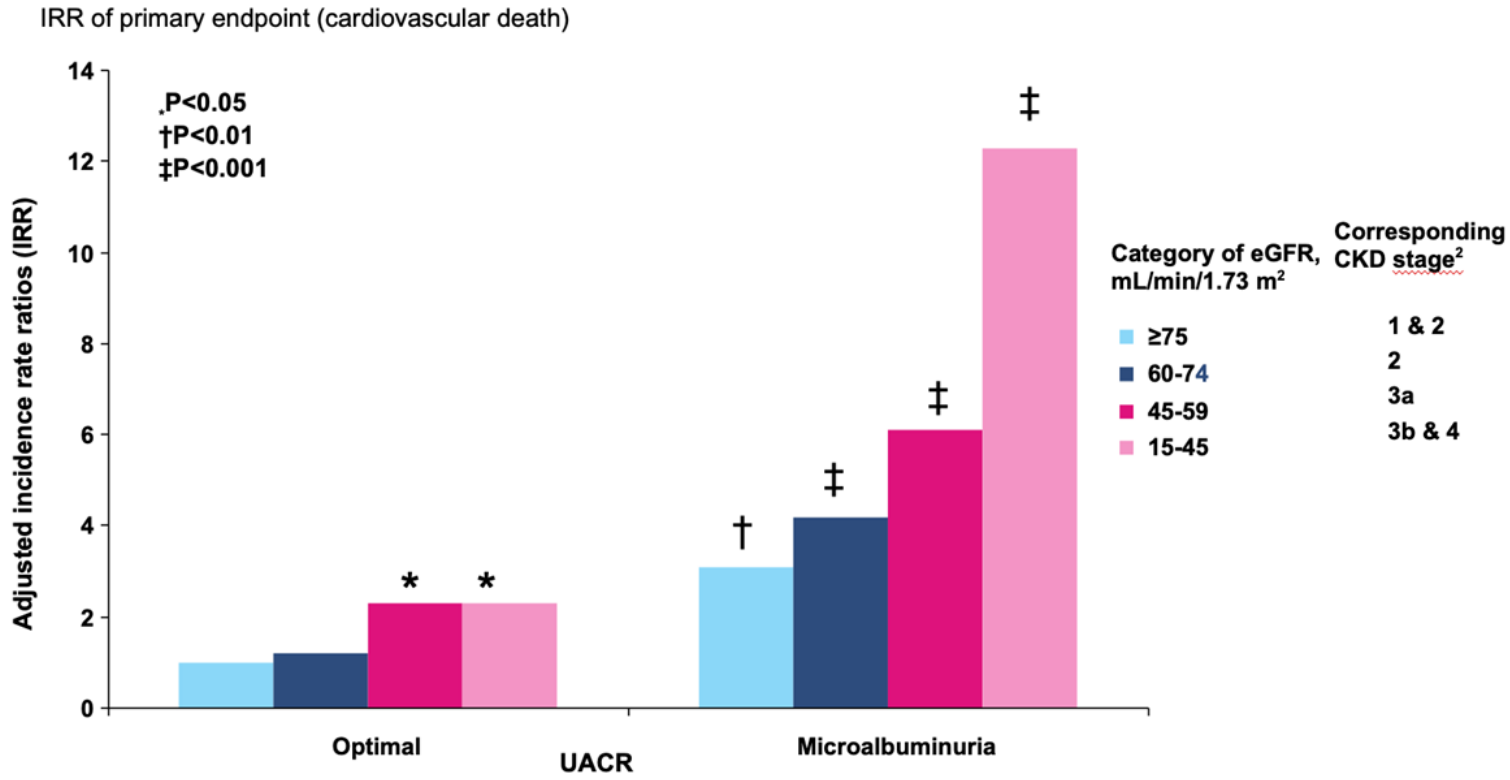

Microalbuminuria with eGFR >75 mls/min/1.73m^2 is associated with higher risk of cardiovascular death than CKD Stage 4 without albuminuria

1. Adapted from Hallan et al. *Archives Internal Medicine* 2007 167;22;2490-2496
2. NICE Management of CKD: *NICE*

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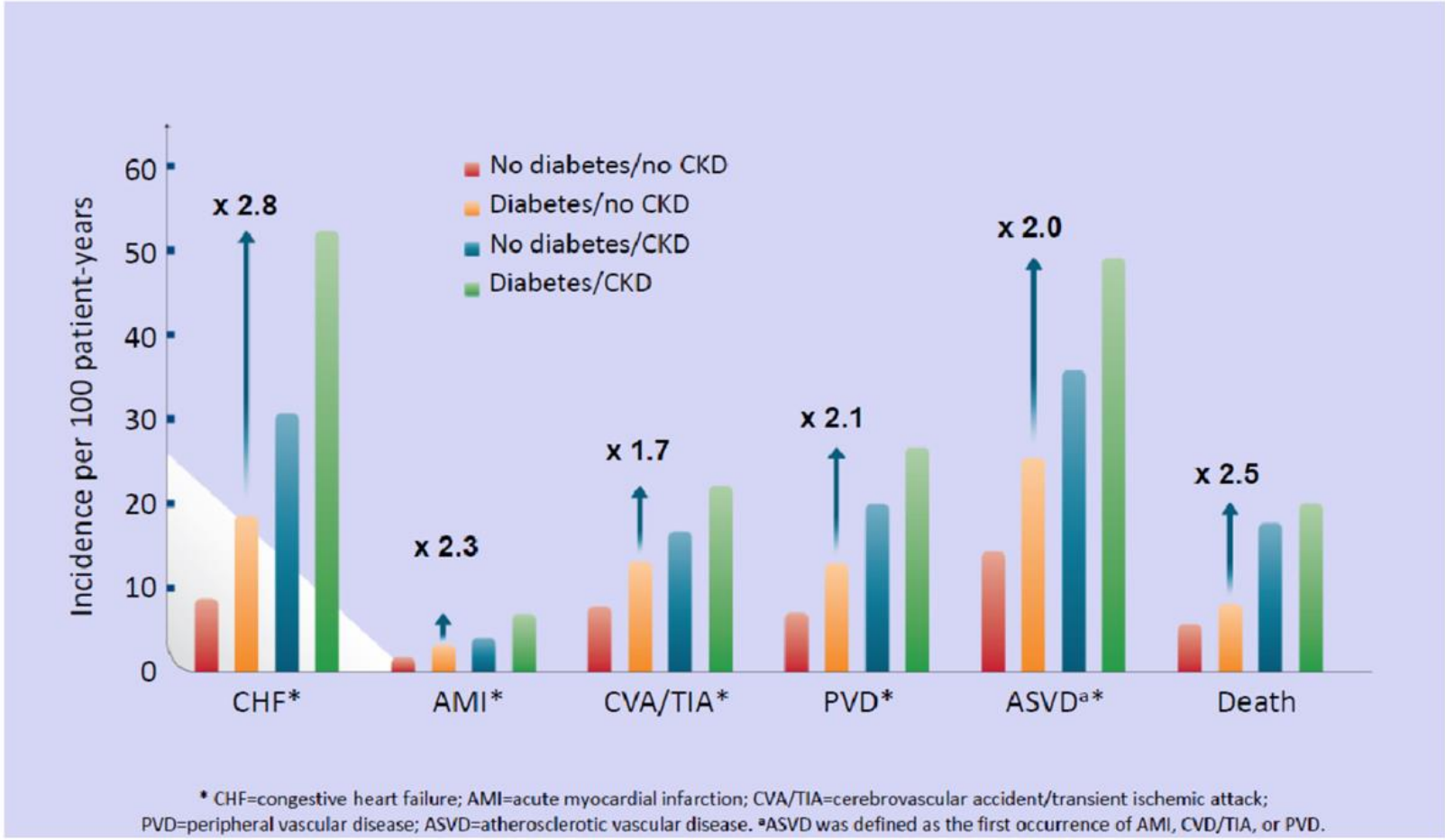
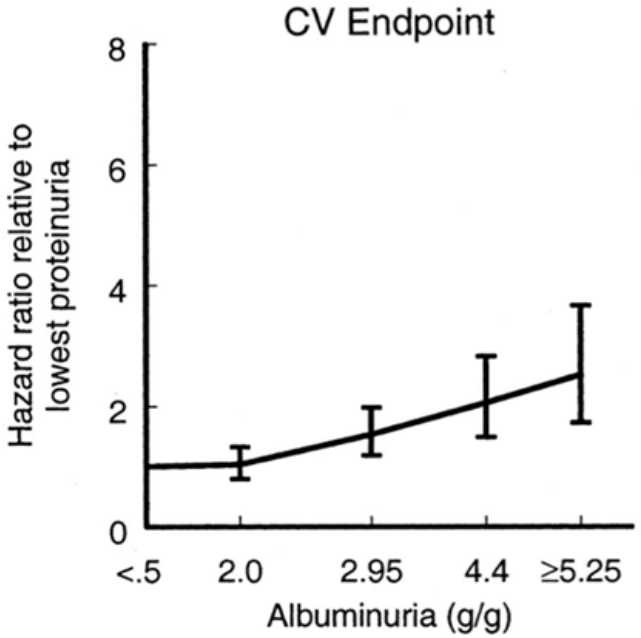
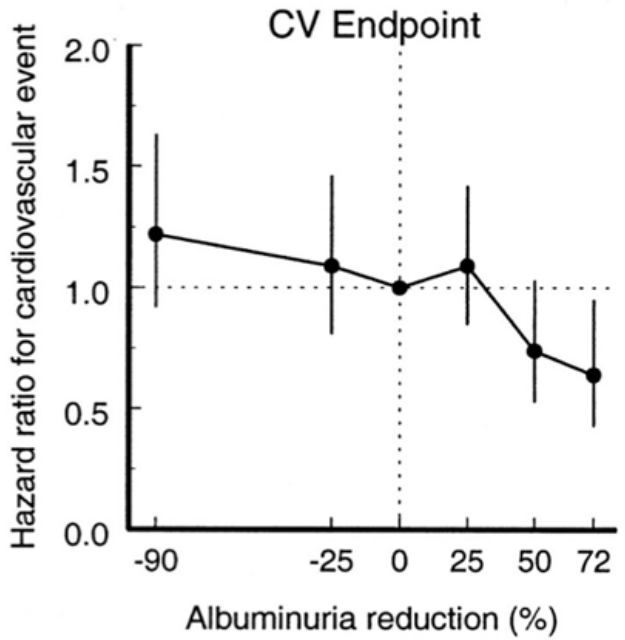
CKD is a 'stronger' risk factor for ALL cardiovascular events than Diabetes



Foley RN, et. al. Am. Soc. Nephrol. 2005

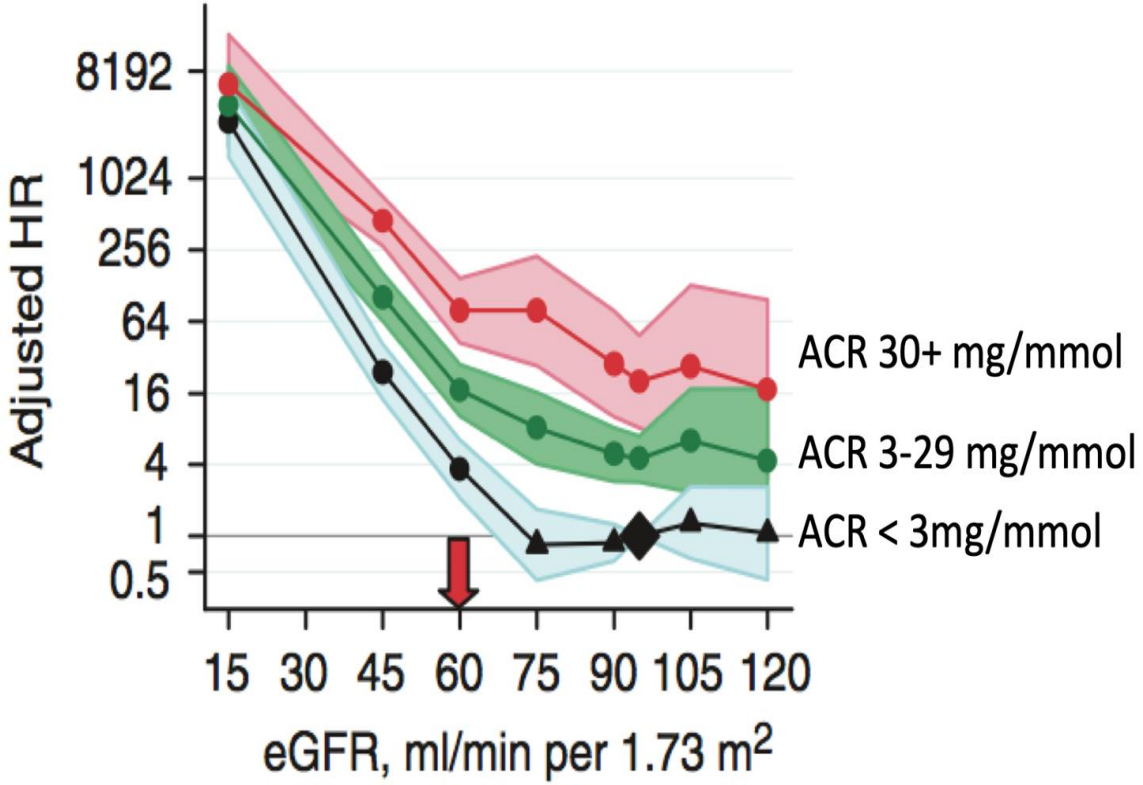
Cardiovascular events are more common with albuminuria and less likely to occur if albuminuria is reduced





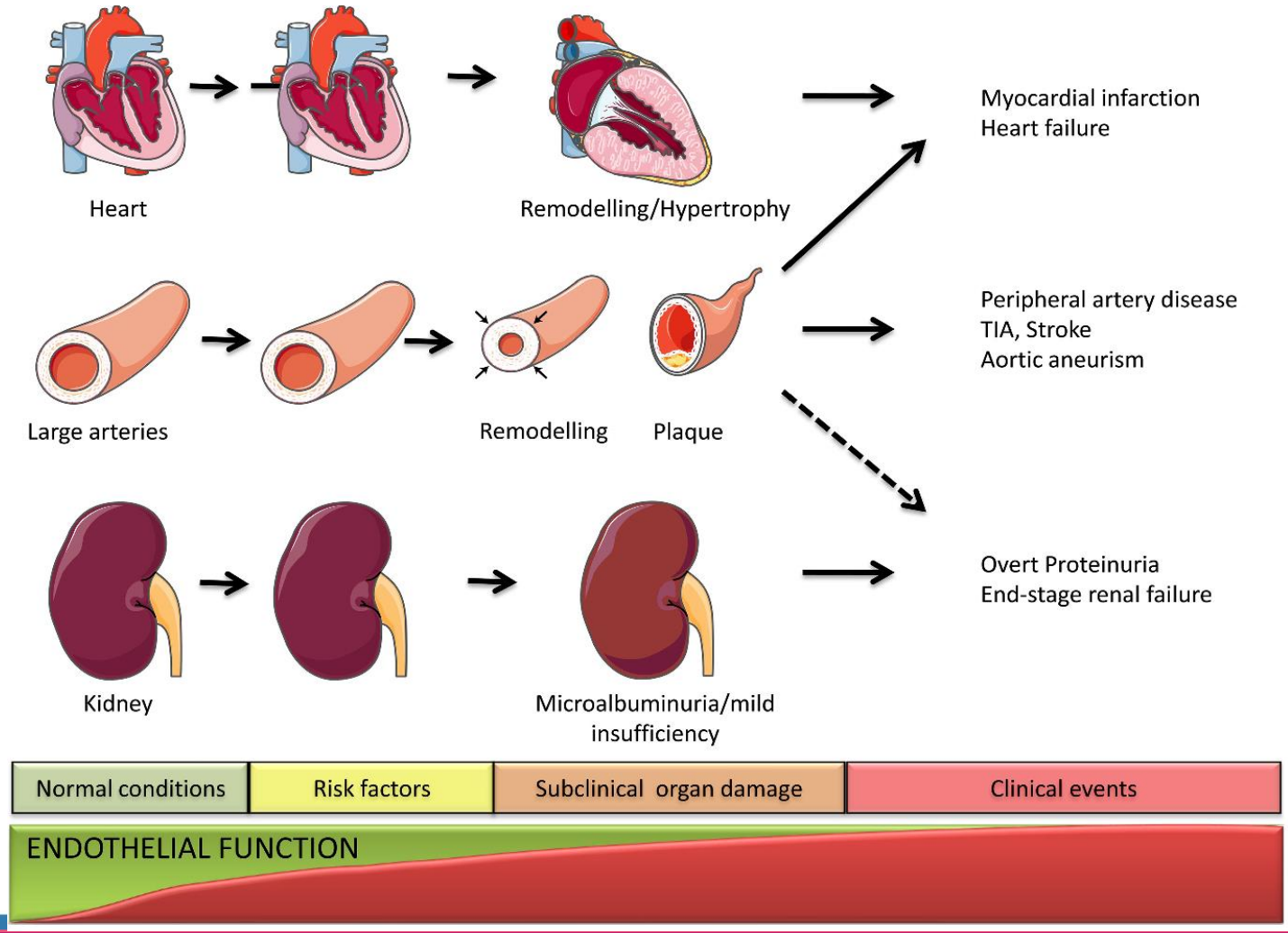
Post hoc analysis of 'RENAAL' trial (1513 patients with diabetic nephropathy – Losartan v placebo) de Zeeuw et al Circulation 2004 DOI: 10.1161/01.CIR.0000139860.33974.28

Albuminuria is a also risk factor for End Stage Kidney Disease (ESKD)



KDIGO Levy Kidney International 2011

Albuminuria is an early marker of cardiovascular disease



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CKD is associated with unplanned admissions

With CKD **Stage 3:**
36 unplanned admissions annually

With CKD **Stage 4:**
75 unplanned admissions annually

Findings for every
100 Patients

National Chronic Kidney Disease Audit // National Report: Part 2 December 2017. https://www.lshtm.ac.uk/media/9951..

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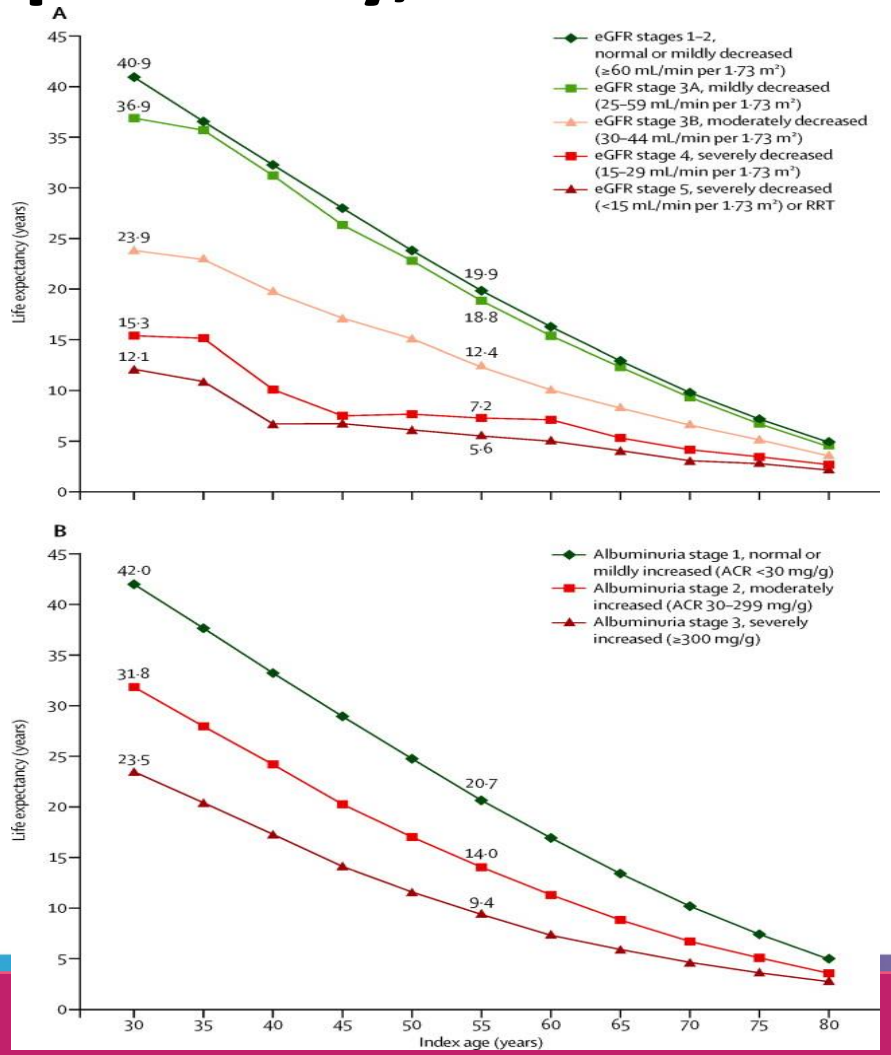
CKD is also associated with reduced life expectancy, even at early stages

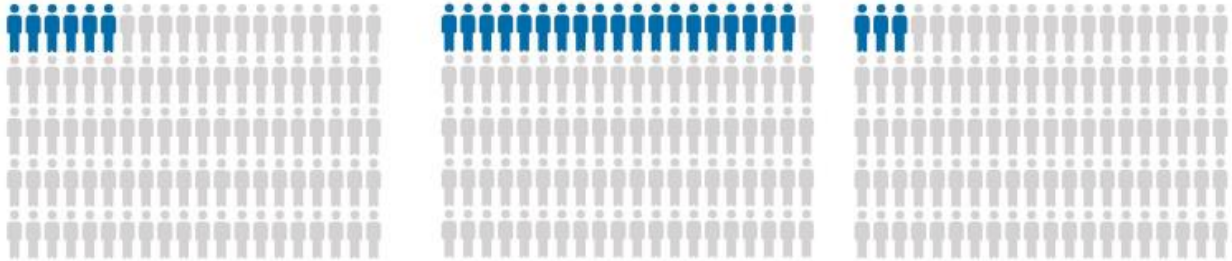


Findings for every **100 Patients**

With CKD **Stage 3:**
6 patients
die annually

With CKD **Stage 4:**
19 patients
die annually

With **other renal codes:**
3 patients
die annually



National Chronic Kidney Disease Audit // National Report: Part 2 December 2017. https://www.lshtm.ac.uk/media/9951..

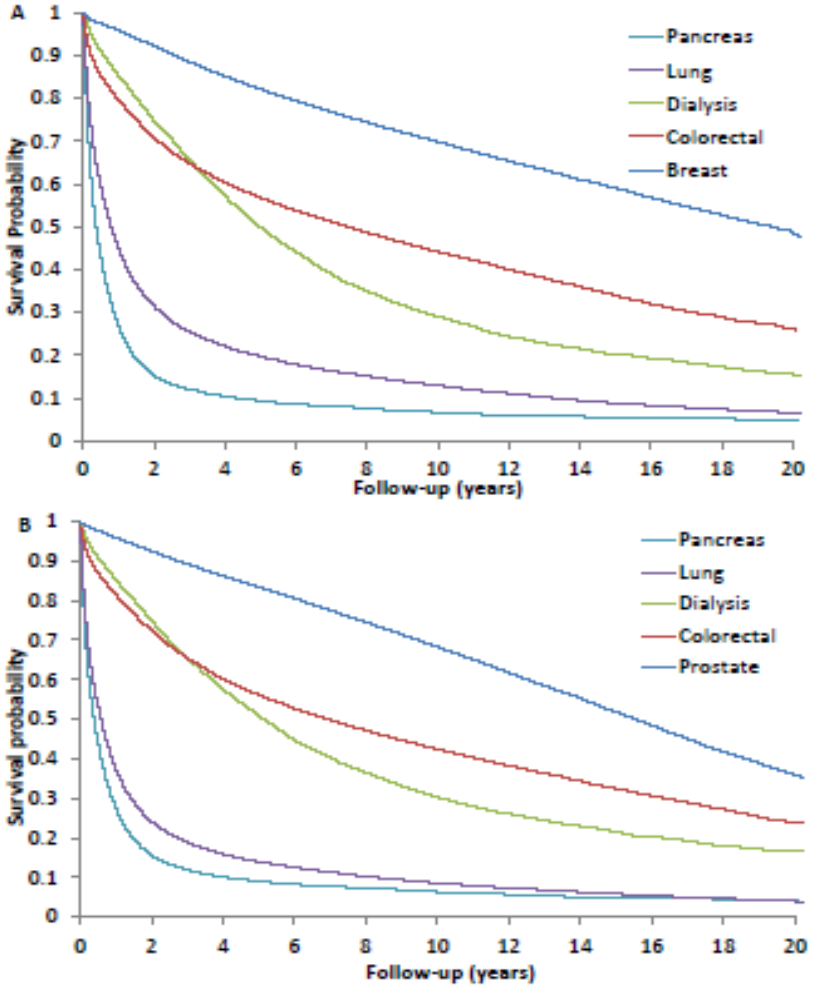


Figure 1. Survival probabilities for all-cause mortality in (A) female maintenance dialysis patients and patients with cancer (log-rank $P < 0.001$) and (B) male maintenance dialysis patients and patients with cancer (log-rank $P < 0.001$).

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End Stage Kidney Disease has worse survival rates than colorectal and breast cancer

Naylor et al AJKD 2019 doi: 10.1053/j.ajkd.2018.12.011

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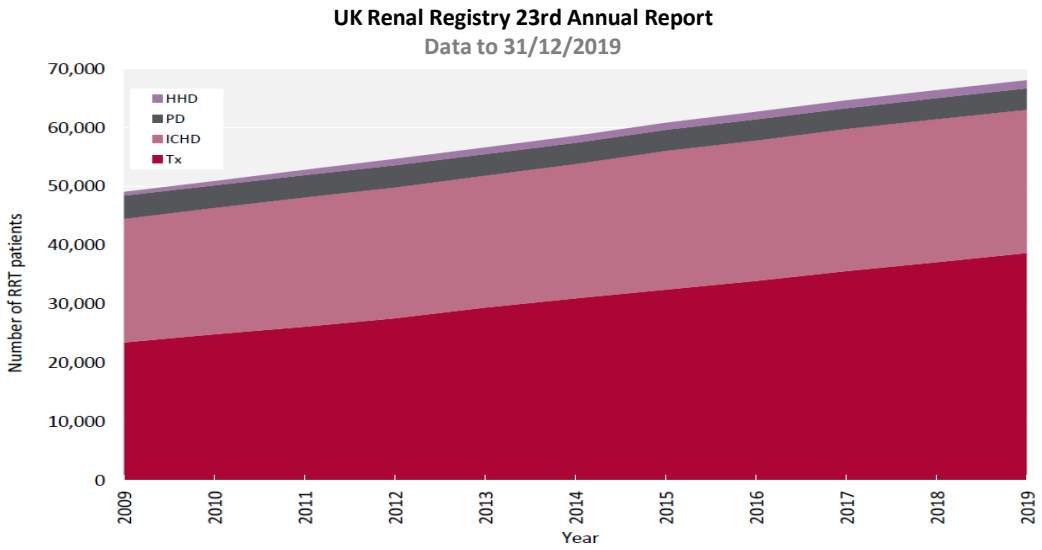
BIG PROBLEM #1

CKD Epidemic

- Global prevalence of CKD has risen by 87% between 1990–2016
- Estimated further increase of 17% in prevalence of CKD by 2030
- 2020 (3.63 million) 2030 (4.38 million) (Xie et al., 2018)
- Including 34% of CKD cases which are undiagnosed
- Higher rates of CKD in under-served communities – likely to widen health inequalities



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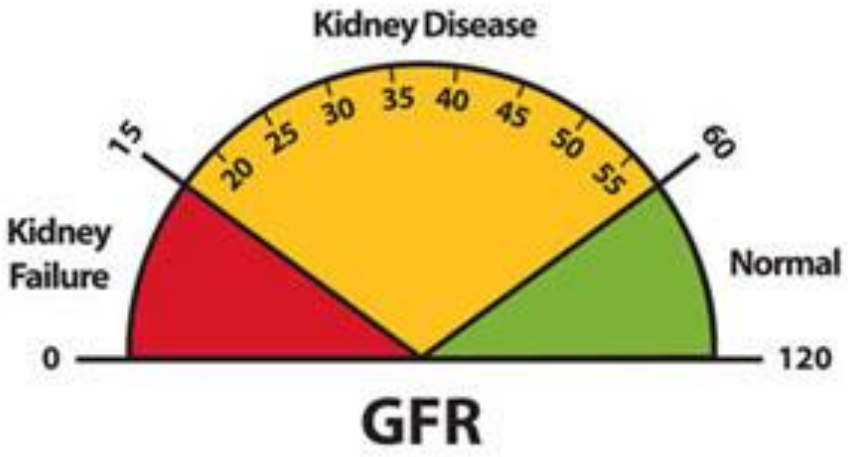
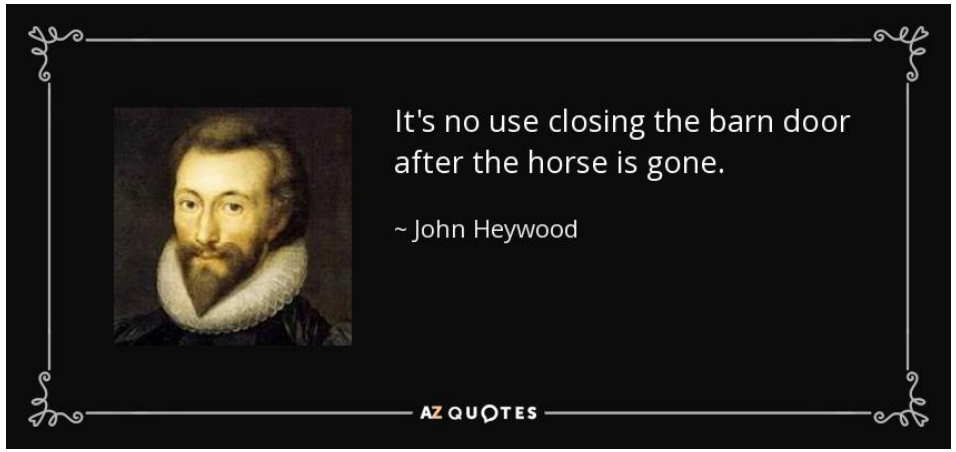
BIG PROBLEM #2

Nephrology services focus on advanced disease

- NICE recommendations for referral to nephrology services GFR <30mls/min/1.73m^2





Missed opportunities for management of CKD progression / CVD prevention

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Early CKD identification and management in primary care

Identification

- CKD Coding for identified CKD
- Case finding for unidentified CKD

Management

- Education – Cardiovascular health / lifestyle / modifiable risk-factors
- Optimisation – '**Three steps in three months**'
  - Maximum Renin Angiotensinogen Aldosterone inhibition
  - Sodium Glucose Transporter-2 inhibitor
  - Blood Pressure Optimisation

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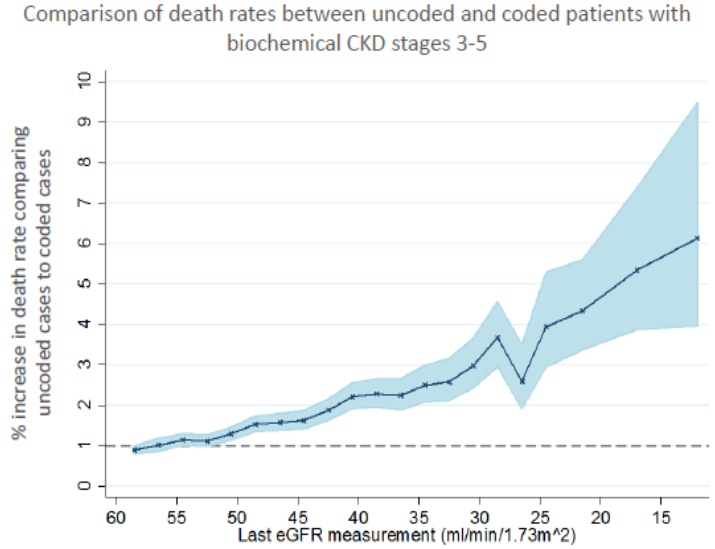
Why Code for CKD?

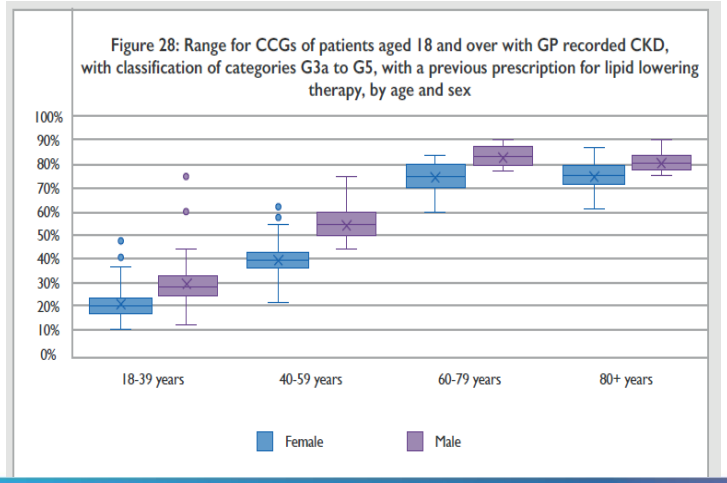
Uncoded patients with CKD have worse outcomes than coded patients (CKD audit, 2017)

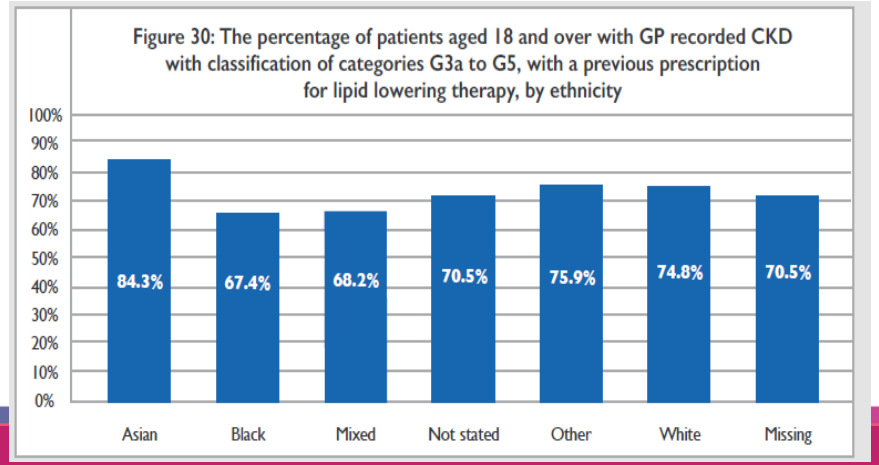
- x2 mortality
- higher admissions

Coding facilitates audit of care through CKDPrevent

e.g. Proportion of patients with CKD Stage 3-5 prescribed lipid lowering therapy







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Evidence for prevention of progression of CKD with BP control and RAAS-i


Annals of Internal Medicine

Search Journal

LATEST ISSUES IN THE CLINIC JOURNAL CLUB MULTIMEDIA CME / MOC AUTHORS / SUBMIT

Articles | July 17, 2001

Angiotensin-Converting Enzyme Inhibitors and Progression of Nondiabetic Renal Disease

A Meta-Analysis of Patient-Level Data

Tazeen H. Jafar, MD, MPH, Christopher H. Schmid, PhD, Marcia Landa, MA, Ioannis Giatras, MD, ... View all authors +

Author, Article and Disclosure Information

https://doi.org/10.7326/0003-4819-135-2-200107170-00007

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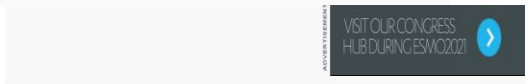
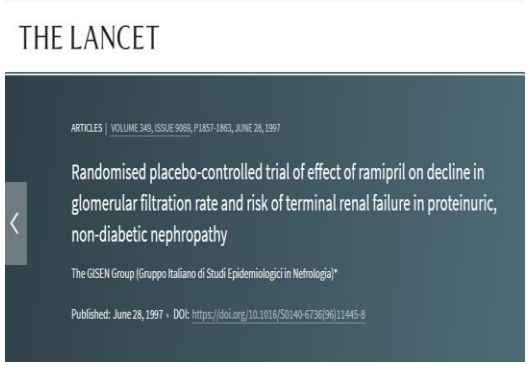



THE LANCET

ARTICLES | VOLUME 349, ISSUE 9069, P1857-1863, JUNE 28, 1997

Randomised placebo-controlled trial of effect of ramipril on decline in glomerular filtration rate and risk of terminal renal failure in proteinuric, non-diabetic nephropathy

The GISEN Group (Gruppo Italiano di Studi Epidemiologici in Nefrologia)*

Published: June 28, 1997 • DOI: https://doi.org/10.1016/S0140-6736(96)11445-8

June 6, 2001

Effect of Ramipril vs Amlodipine on Renal Outcomes in Hypertensive Nephrosclerosis

A Randomized Controlled Trial

Lawrence Y. Agodoa, MD; Lawrence Appel, MD, MPH; George L. Bakris, MD; et al

» Author Affiliations

JAMA. 2001;285(21):2719-2728. doi:10.1001/jama.285.21.2719

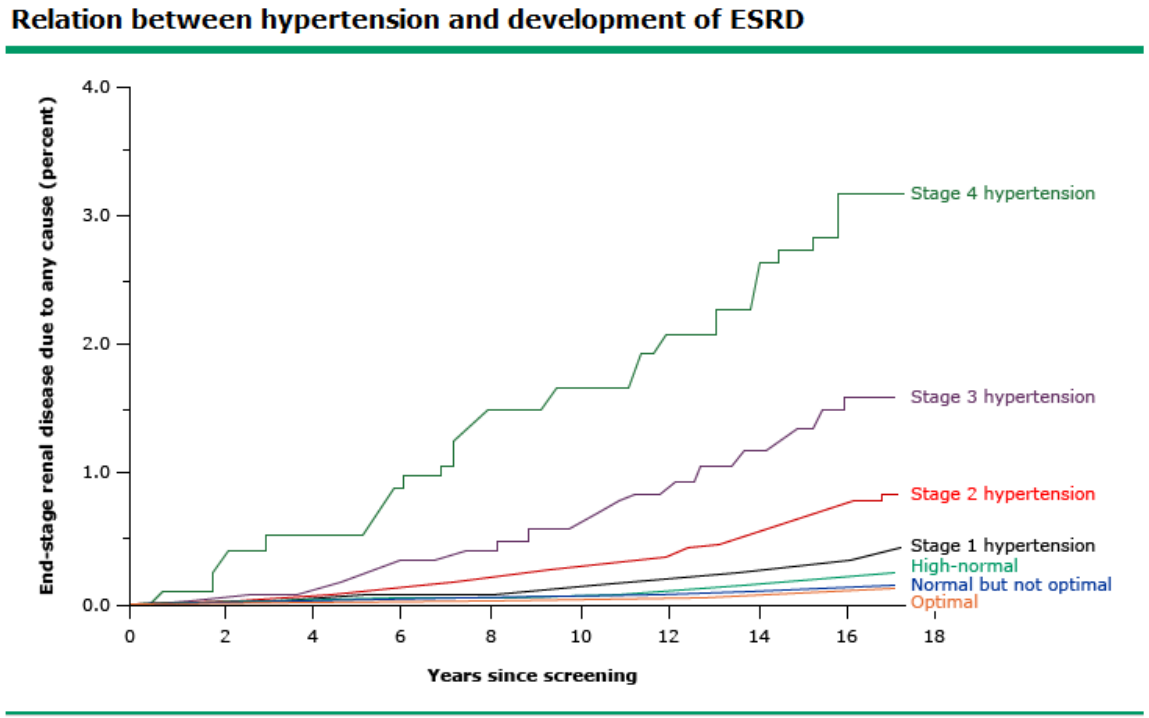

THE LANCET

FAST TRACK — ARTICLES | VOLUME 377, ISSUE 9784, P2181-2192, JUNE 25, 2011

The effects of lowering LDL cholesterol with simvastatin plus ezetimibe in patients with chronic kidney disease (Study of Heart and Renal Protection): a randomised placebo-controlled trial

Prof Colin Baigent, FRCP • Martin J Landray, FRCP • Christina Reith, MRCP • Jonathan Emberson, PhD • David C Wheeler, FRCP • Charles Tomson, DM • et al. Show all authors • Show footnotes

Open Access • Published: June 09, 2011 • DOI: https://doi.org/10.1016/S0140-6736(11)60739-3



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Evidence for SGLT-2 on CVD and Renal outcomes in Patients with and without Diabetic Kidney Disease

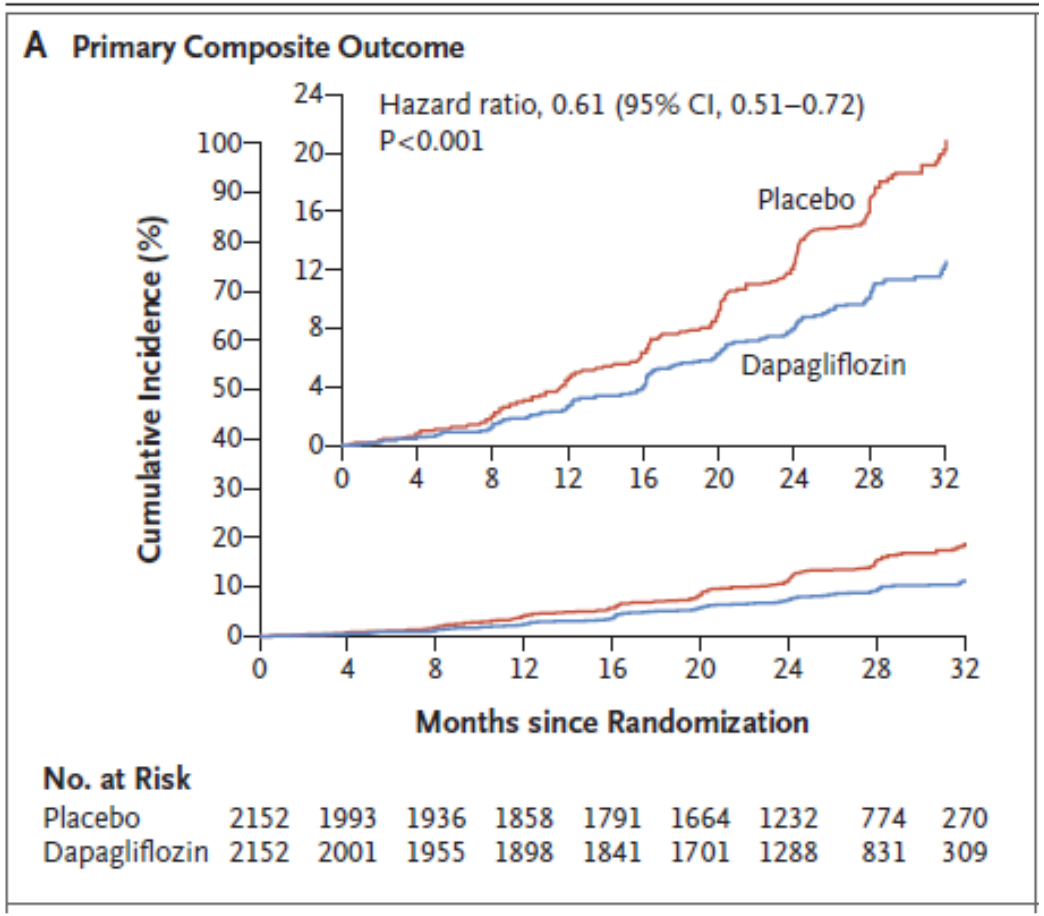
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Dapagliflozin in Patients with Chronic Kidney Disease

Hiddo J.L. Heerspink, Ph.D., Bergur V. Stefánsson, M.D., Ricardo Correa-Rotter, M.D., Glenn M. Chertow, M.D., Tom Greene, Ph.D., Fan-Fan Hou, M.D., Johannes F.E. Mann, M.D., John J.V. McMurray, M.D., Magnus Lindberg, M.Sc., Peter Rossing, M.D., C. David Sjöström, M.D., Roberto D. Toto, M.D., Anna-Maria Langkilde, M.D., and David C. Wheeler, M.D., for the DAPA-CKD Trial Committees and Investigators*

Primary Composite Outcome = GFR decline >5-%, ESKD, Death from renal or Cardiovascular Cause



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Evidence for SGLT-2 on CVD and Renal outcomes in Patients with and without Diabetic Kidney Disease

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Dapagliflozin in Patients with Chronic Kidney Disease

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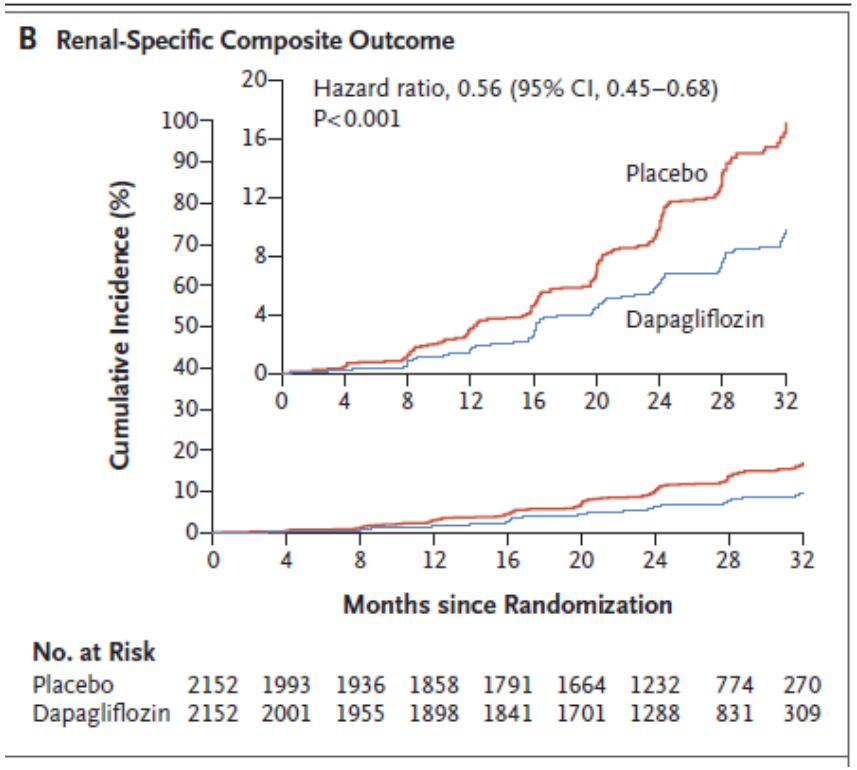

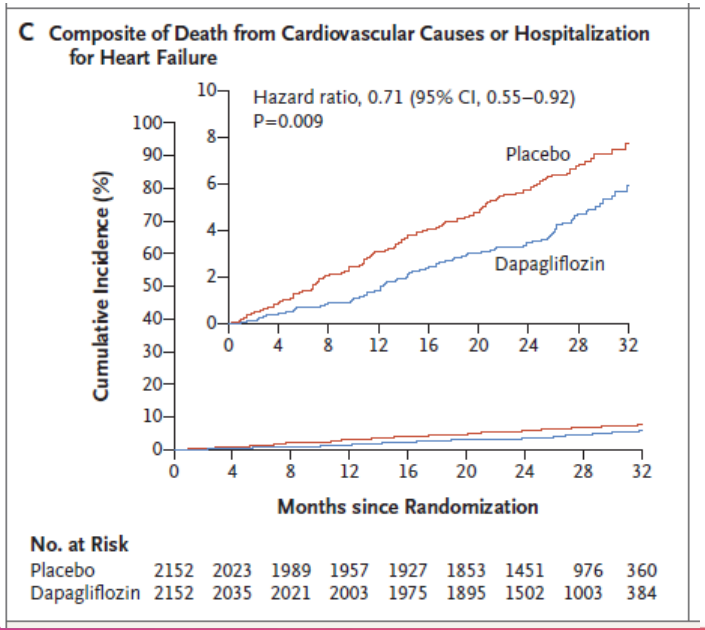

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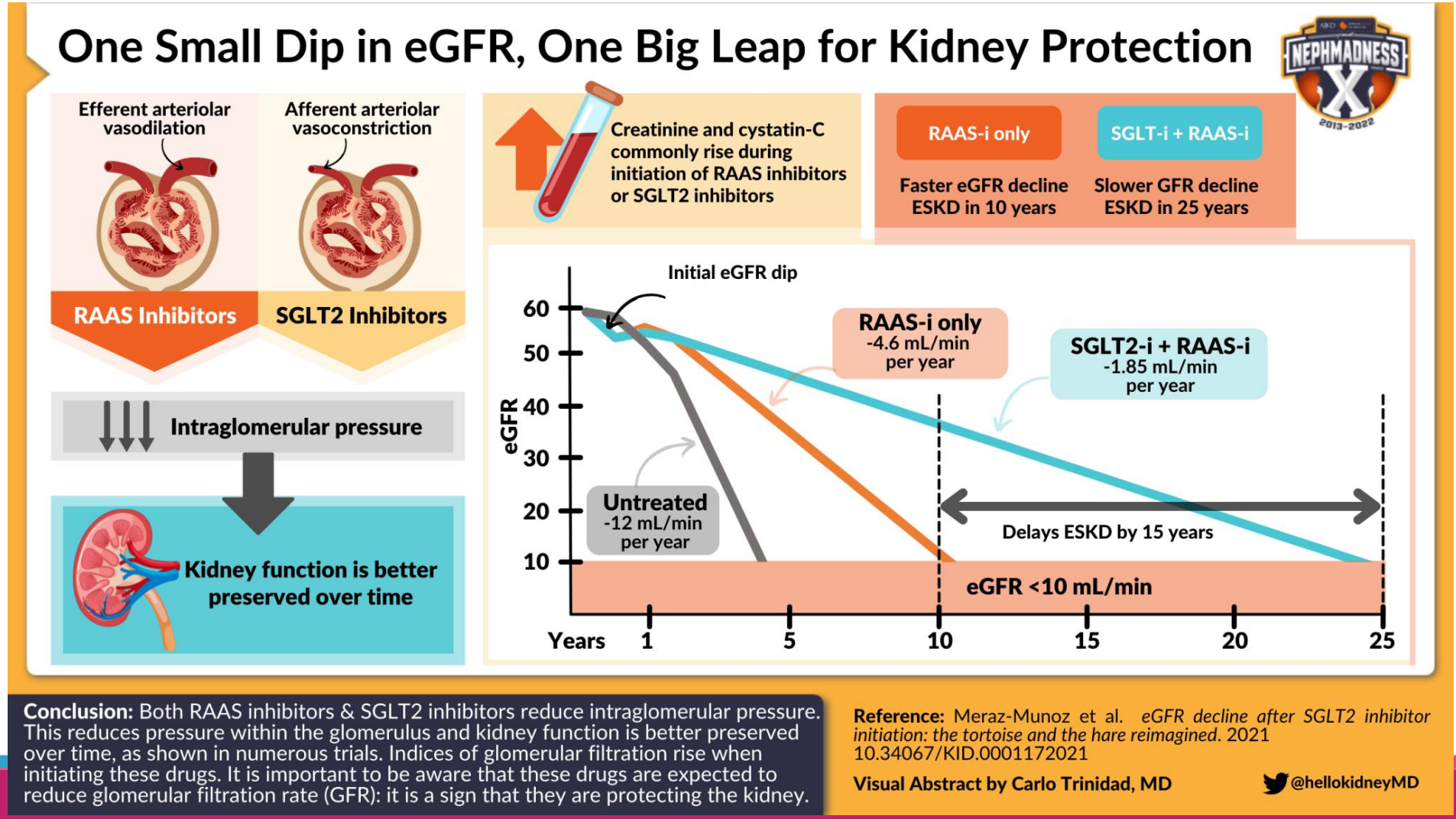
One small dip in eGFR - One Big Leap for Kidney Protection



Conclusion: Both RAAS inhibitors & SGLT2 inhibitors reduce intraglomerular pressure. This reduces pressure within the glomerulus and kidney function is better preserved over time, as shown in numerous trials. Indices of glomerular filtration rise when initiating these drugs. It is important to be aware that these drugs are expected to reduce glomerular filtration rate (GFR): it is a sign that they are protecting the kidney.

Reference: Meraz-Munoz et al. *eGFR decline after SGLT2 inhibitor initiation: the tortoise and the hare reimagined*. 2021 10.34067/KID.0001172021

Visual Abstract by Carlo Trinidad, MD @hellokidneyMD

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Summary of key learning points

- CKD is associated with high rates of CVD, hospital admissions and mortality
- Prevention of CKD progression can reduce CVD, End Stage Kidney Disease and mortality
- Coding improves outcomes and facilitates audit
- Both ACR and eGFR testing are important for early identification
- Three actions in three months: RAAS-i, SGLT-2i, Optimise BP.

Local CKD Data

Why focus on CKD?

Dr Payam Torabi GP, CESEL Clinical Lead Southwark
Olly Bridgeman IHL Facilitator

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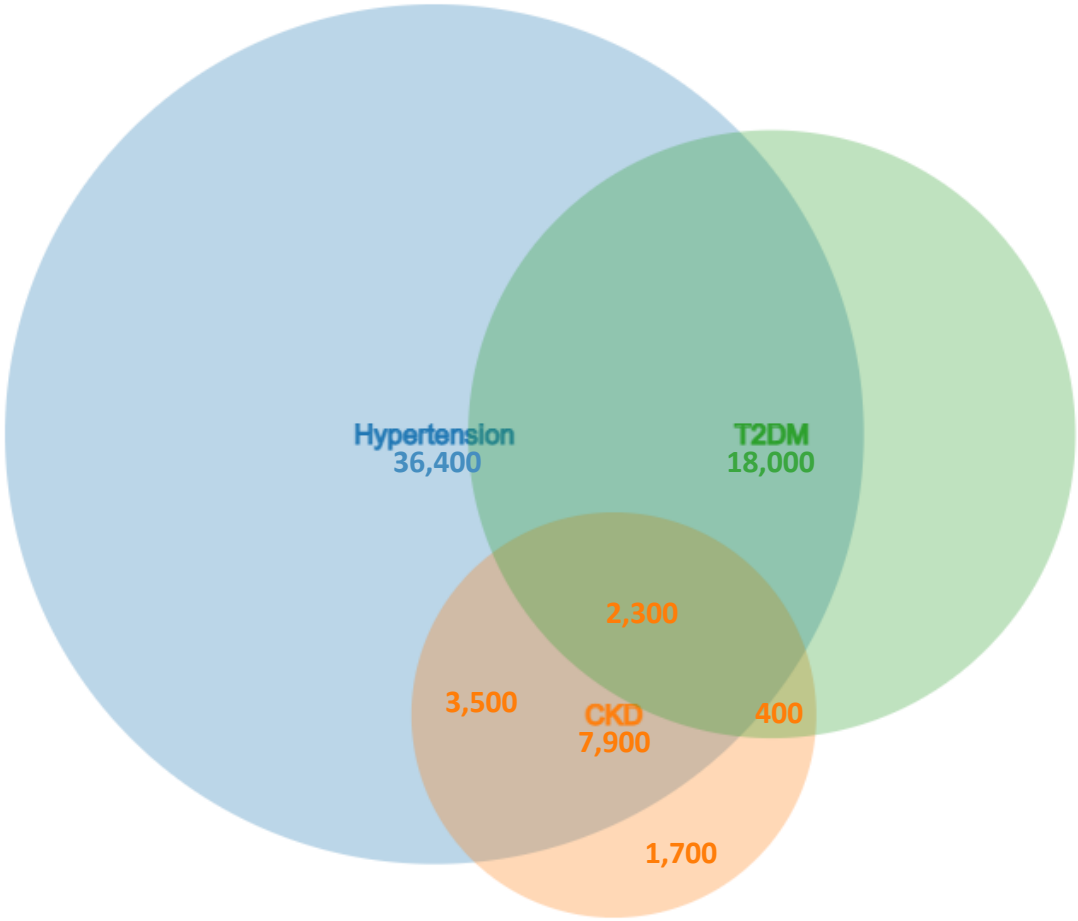
CKD is an important condition and co-morbidity



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DETECT: Diagnosing more CKD

CKD registers in SEL are half their expected size

Patients who have CKD but are not coded,
have **double** the mortality rate and **double** the risk of being prescribed nephrotoxic drugs compared to correctly coded patients

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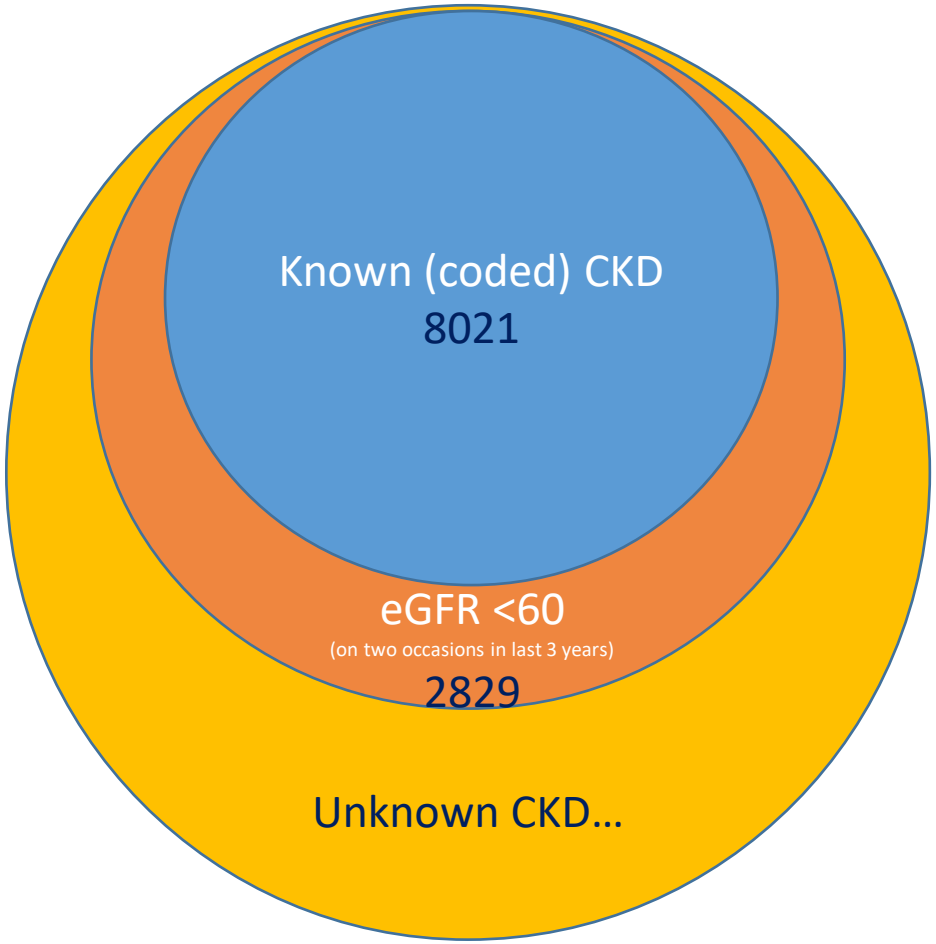
DETECT: Diagnosing more CKD



Clinical Effectiveness
South East London

28/02/2023

Your practice's CKD data

How well is your practice finding and managing patients with CKD? These graphs show your practice (green bar) and gives the spread of all practices in the borough. The final two graphs cover new NICE TA 775 which advises starting SGLT2is in some patients with CKD and proteinuria, so we wouldn't expect these percentages to be high yet. March's CKD PLT will cover this data and all you need to know about CKD for Primary Care.

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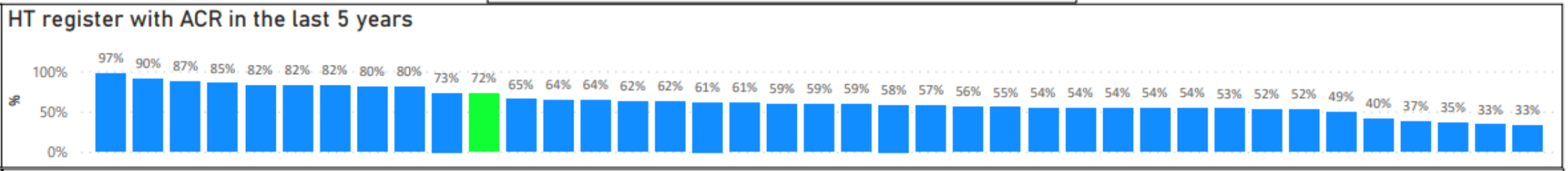
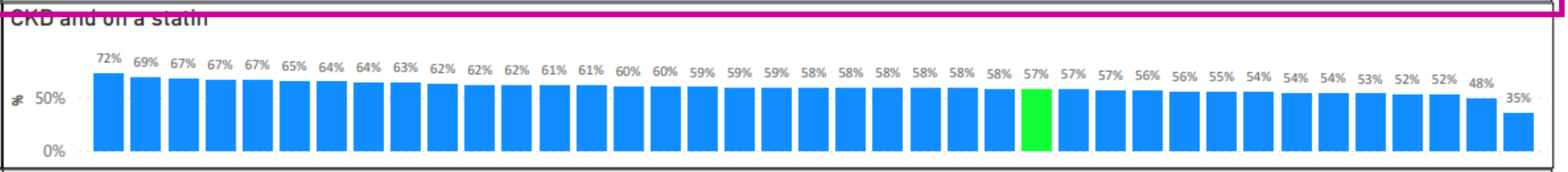
Detect

All patients with hypertension should have an ACR checked 5 yearly (and probably much more frequently)



Protect

All patients with CKD should be on a statin (unless contraindicated)



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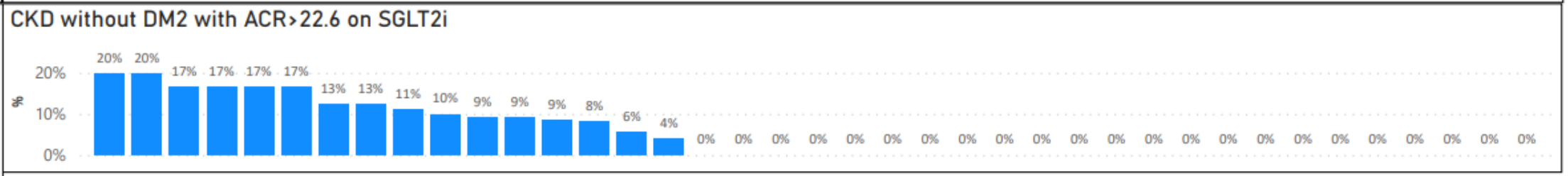
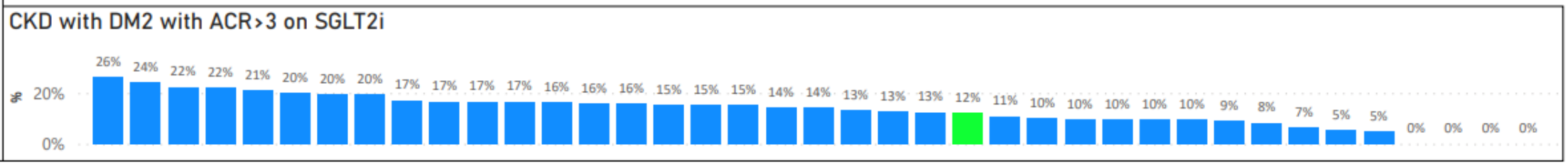
We should be starting eligible patients on SGLT2is in Primary care. This can delay progression to End Stage Renal Failure by 15 years and greatly decreases cardiovascular risk





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PROTECT: Improving CKD management

- 2/3 of patients with CKD in SEL **have not** had Urine ACR checked in the past year
- 1/3 of patients with CKD who have proteinuria **are not** on an ACE-I/ARB
- 1/3 of patients with CKD have **uncontrolled** blood pressure
- 1/3 of patients with CKD and Diabetes have **uncontrolled** HbA1c
- 2/5 of patients with CKD **are not** on lipid lowering therapy

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South East London

28/02/2023

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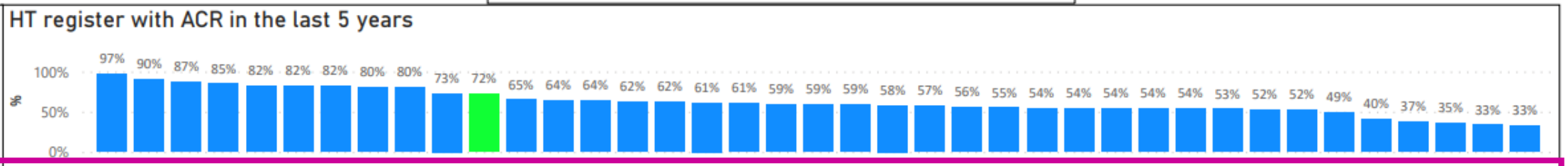

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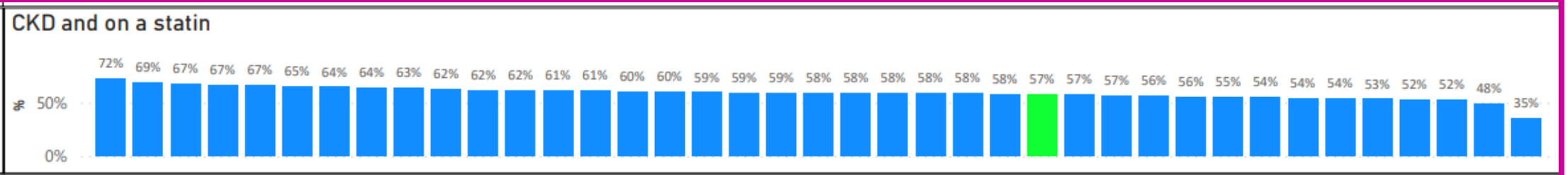

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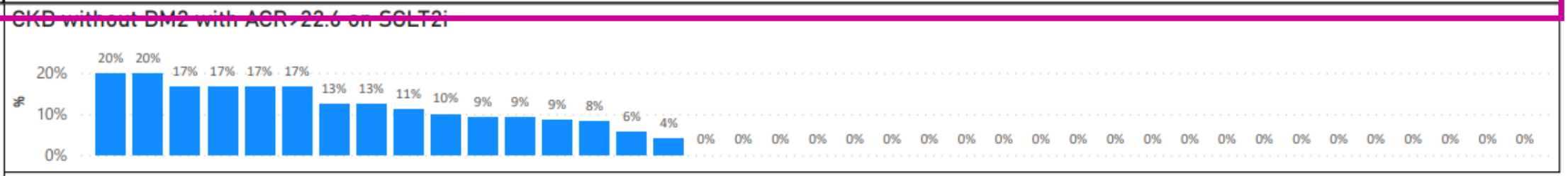

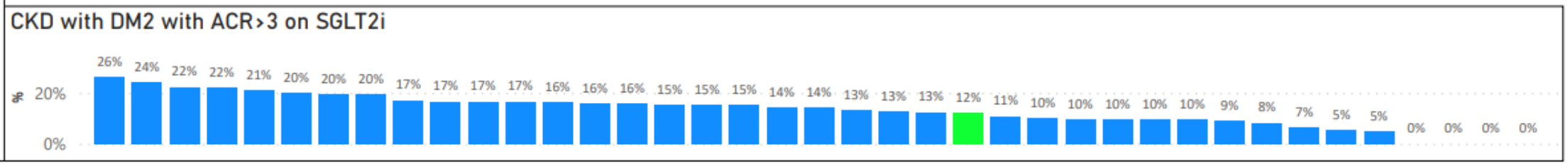

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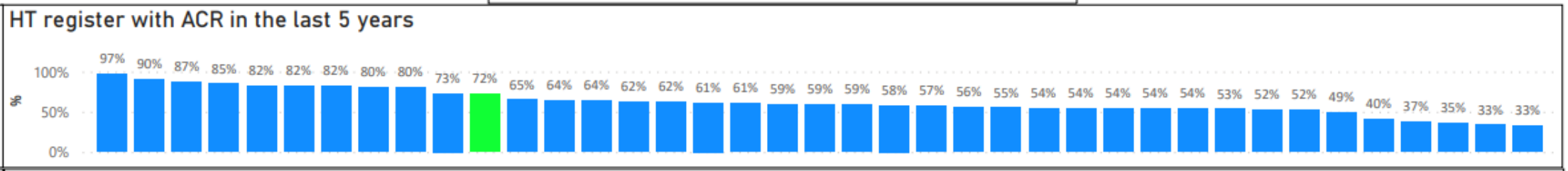

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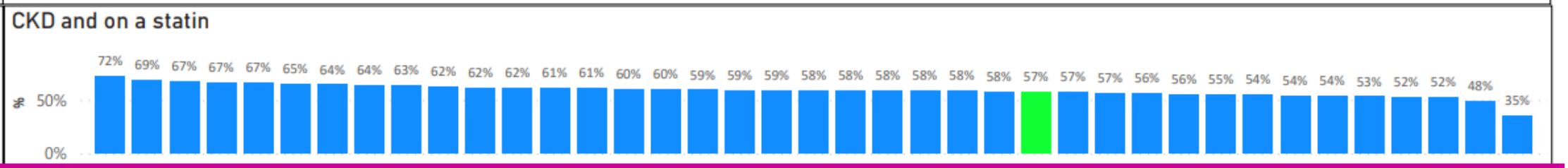

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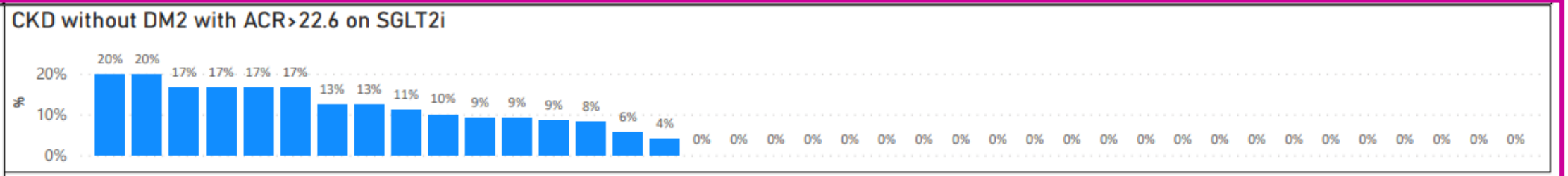

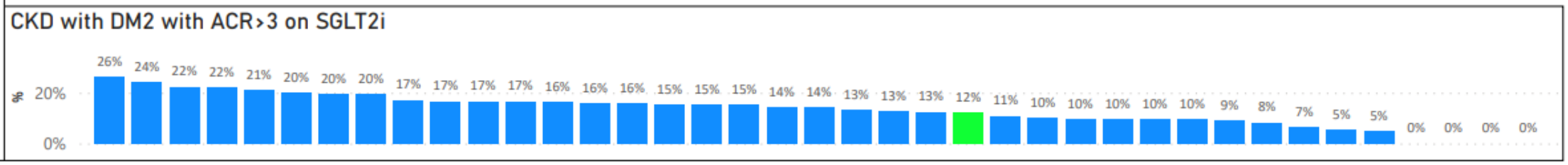

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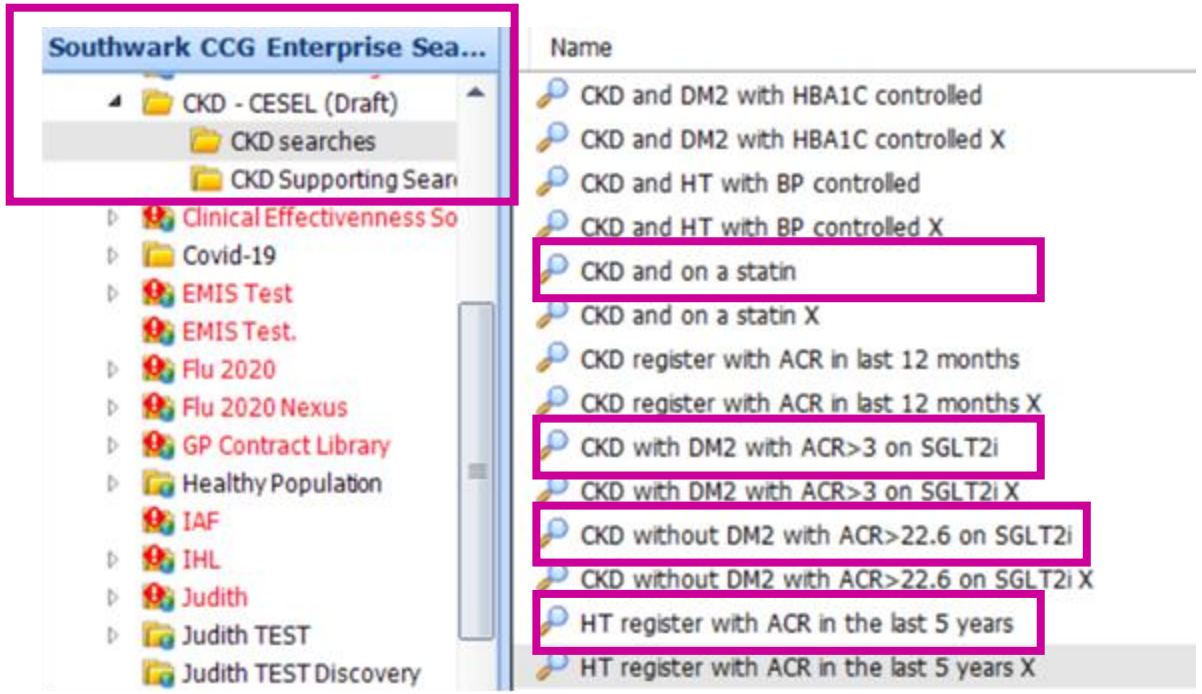
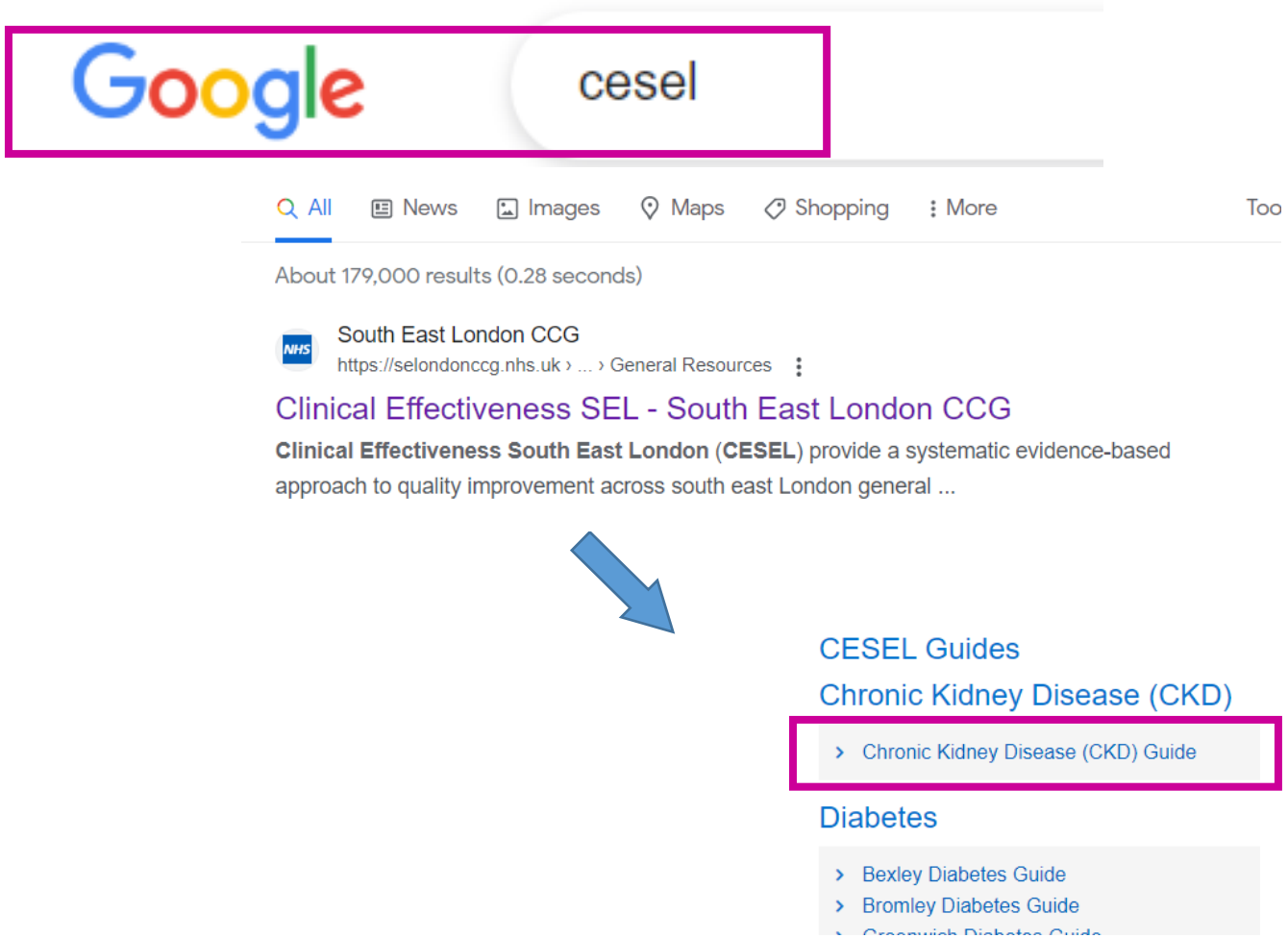
Data and Searches



South East London CKD Guide

Dr Joe Mayhew — GP, CESEL Clinical Lead Southwark
Dr Margaret Senbanjo — GP, CESEL Clinical Lead Lewisham

CESEL CKD Guide



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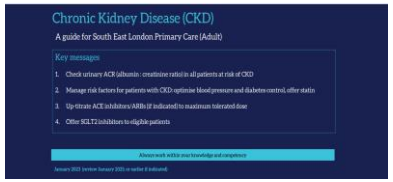
What's inside the CKD guide?

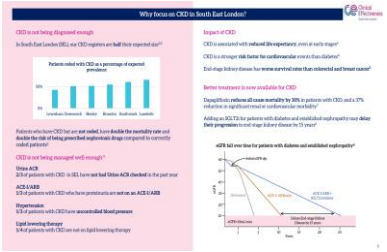
- Evidence-based
- "One-stop shop"

1 Key Messages

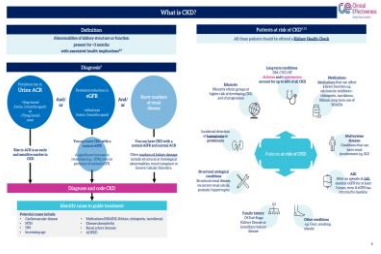


2 Contents

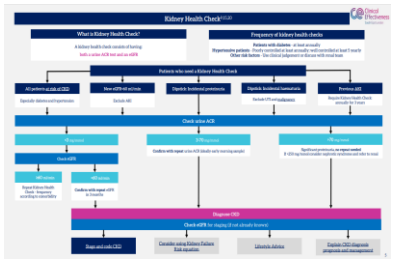
3 Why CKD?



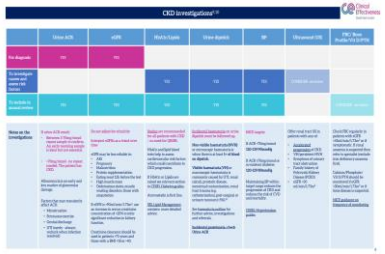
4 What is CKD?



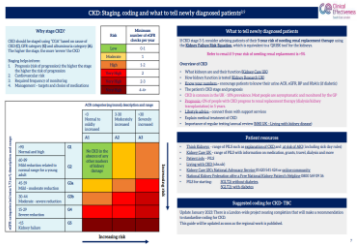
5 Kidney Health Check



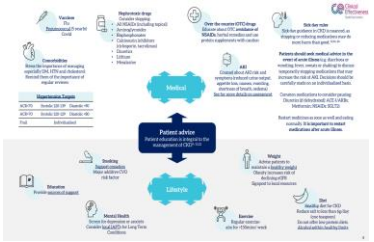
6 Investigations



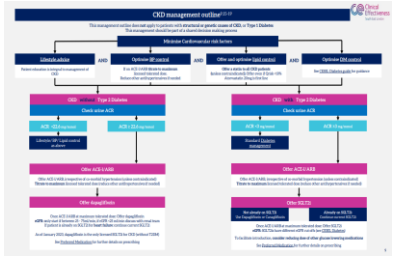
7 Staging, coding, and patient advice



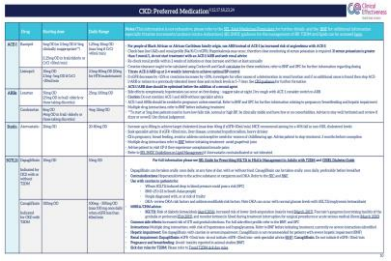
8 Patient advice



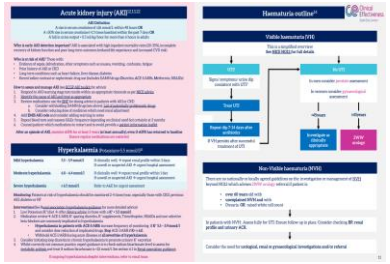
9 Management



10 Preferred medication

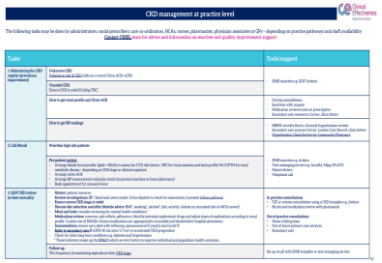


11 AKI & Haematuria



12 Referral & Secondary care support

13 Management at Practice Level



Making the right thing to do the easy thing to do!

Case studies

Margaret Senbanjo	GP, CESEL Clinical lead Lewisham
Joe Mayhew	GP, CESEL Clinical Lead Southwark

Mrs Jones

Routine GP appointment

- Age 62 Black Caribbean
- Mrs Jones wants to discuss her blood pressure

PMH
Hypertension
Knee osteoarthritis

Medications
Naproxen prn
Omeprazole
Amlodipine

Social history
Non smoker
Minimal alcohol

Investigations (12 months ago)
eGFR 59
Creatinine 78
BP 145/80

Mentimeter question

You suspect Mrs Jones may have CKD. Which investigations should you consider to see how her kidneys are functioning?

A. Blood pressure
B. Hba1C
C. Urine ACR
D. Renal profile
E. Lipid profile
F. FBC
G. Urine dipstick
H. Vitamin D
I. Bone Profile

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You suspect Mrs Jones may have CKD. Which investigations should you consider to see how her kidneys are functioning?

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Kidney Health Check[9,15,20]

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What is Kidney Health Check?

A kidney health check consists of having:

both a urine ACR test and an eGFR

Frequency of kidney health checks

Patients with diabetes - at least annually
Hypertensive patients - Poorly controlled at least annually; well controlled at least 5 yearly
Other risk factors - Use clinical judgement or discuss with renal team

Patients who need a Kidney Health Check

- **All patients at risk of CKD** — Especially diabetes and hypertension
- **New eGFR<60 ml/min** — Exclude AKI
- **Dipstick: Incidental proteinuria**
- **Dipstick: Incidental haematuria** — Exclude UTI and malignancy
- **Previous AKI** — Require Kidney Health Check: annually for 3 years

Check urine ACR

- **<3 mg/mmol** → Check eGFR
  - **≥60 ml/min** → Repeat Kidney Health Check - frequency according to comorbidity
  - **<60 ml/min** → Confirm with repeat eGFR in 3 months
- **3-70 mg/mmol** → Confirm with repeat urine ACR (ideally early morning sample)
- **>70 mg/mmol** → Significant proteinuria, no repeat needed. If >250 mg/mmol consider nephrotic syndrome and refer to renal

Diagnose CKD

Check eGFR for staging (if not already known)

- Stage and code CKD
- Consider using Kidney Failure Risk equation
- Lifestyle Advice
- Explain CKD diagnosis prognosis and management

5

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CKD investigations[9,10]

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	Urine ACR	eGFR	HbA1c/Lipids	Urine dipstick	BP	Ultrasound (US)	FBC/ Bone Profile/Vit D/PTH
For diagnosis	YES	YES					
To investigate causes and assess risk factors			YES	YES	YES	CONSIDER- see below	
To include in annual review	YES	YES	YES	YES	YES		CONSIDER - see below
Notes on the investigations	**If urine ACR result:** • **Between 3-70mg/mmol repeat sample to confirm. An early morning sample is ideal but not essential.** • **>70mg/mmol - no repeat needed. The patient has CKD.** Albuminuria is an early and key marker of glomerular damage. Factors that may transiently affect ACR: • Menstruation • Strenuous exercise • Genital discharge • UTI (rarely - always recheck when infection resolved)	**Do not adjust for ethnicity** **Interpret eGFRs as a trend over time** eGFR may be less reliable in: • AKI • Pregnancy • Malnutrition • Protein supplementation • Eating meat 12h before the test • High muscle mass • Oedematous states, muscle wasting disorders, those with amputation If eGFR is >90ml/min/1.73m^2, use an increase in serum creatinine concentration of >20% to infer significant reduction in kidney function. Creatinine clearance should be used in patients >75 years and those with a BMI <18 or >40.	**Statins are recommended for all patients with CKD – no need for QRISK.** HbA1c and lipid blood tests help to assess cardiovascular risk factors which could contribute to CKD progression. If HbA1c or Lipids are raised see relevant section in CESEL Diabetes guides. Atorvastatin is first line. SEL Lipid Management contains more detailed advice.	**Incidental haematuria on urine dipstick must be followed up.** **Non-visible haematuria (NVH)** or microscopic haematuria is when there is at least **1+ of blood on dipstick.** **Visible haematuria (VH)** or macroscopic haematuria is commonly caused by UTI, renal calculi, prostatic disease, menstrual contamination, renal tract trauma (e.g. catheterisation), post-surgical or urinary tumours (<5%).[25] See haematuria outline for further advice, investigations and referrals. **Incidental proteinuria- check Urine ACR**	**NICE targets:** If ACR <70mg/mmol **120-139/90mmHg** If ACR ≥70mg/mmol or co-existent diabetes **120-129/80mmHg** Maintaining BP within target range reduces the progression of CKD and reduces the risk of CVD and mortality. CESEL Hypertension guides	Offer renal tract US in patients with any of: • Accelerated progression of CKD • VH/persistent NVH • Symptoms of urinary tract obstruction • Family history of Polycystic Kidney Disease (PCKD) • eGFR <30 ml/min/1.73m^2	Check FBC regularly in patients with eGFR <45ml/min/1.73m^2 or if symptomatic. If renal anaemia is suspected then refer to specialist (exclude iron deficiency anaemia first). Calcium/Phosphate/ Vit D/PTH should be monitored if eGFR <30ml/min/1.73m^2 or if bone disease is suspected. NICE guidance on frequency of monitoring

Mrs Jones

Repeat investigations (previous results in brackets)

- BMI 32
- Blood pressure 152/90 (145/80)
- Total cholesterol 4.8
- eGFR 57 (59)
- HbA1c 43
- Urine ACR 2.3

Mentimeter question

You review Mrs Jones results.

Does she have CKD?

A. Maybe, we need more information
B. No her creatinine is normal
C. No, her eGFR is normal for her age
D. No, because we need to adjust eGFR for her ethnicity
E. We need to repeat the eGFR and ACR in 3 months
F. Yes

Mentimeter question

You review Mrs Jones results.

Does she have CKD?

A. Maybe, we need more information
B. No her creatinine is normal
C. No, her eGFR is normal for her age
D. No, because we need to adjust eGFR for her ethnicity
E. We need to repeat the eGFR and ACR in 3 months
F. Yes

What is CKD?

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Definition

Abnormalities of kidney structure or function
present for >3 months
with associated health implications[8,9]

Diagnosis[9]

Persistent rise in Urine ACR
>3mg/mmol
(twice, 3 months apart)
or
>70mg/mmol
once

And/ or

Persistent reduction in eGFR
<60ml/min
(twice, 3 months apart)

And/ or

Rarer markers of renal disease

Rise in ACR is an early and sensitive marker in CKD

You can have CKD with a normal eGFR

A significant increase in creatinine (e.g. >20%), even in presence of normal eGFR

You can have CKD with a normal eGFR and normal ACR

Other markers of kidney damage include structural or histological abnormalities, renal transplant or known tubular disorders.

Diagnose and code CKD

Identify cause to guide treatment

Potential causes include:

- Cardiovascular disease
- HTN
- DM
- Increasing age
- Medications (NSAIDS, lithium, ciclosporin, tacrolimus)
- Glomerulonephritis
- Renal artery stenosis
- ADPKD

Patients at risk of CKD[9,10]

All these patients should be offered a Kidney Health Check

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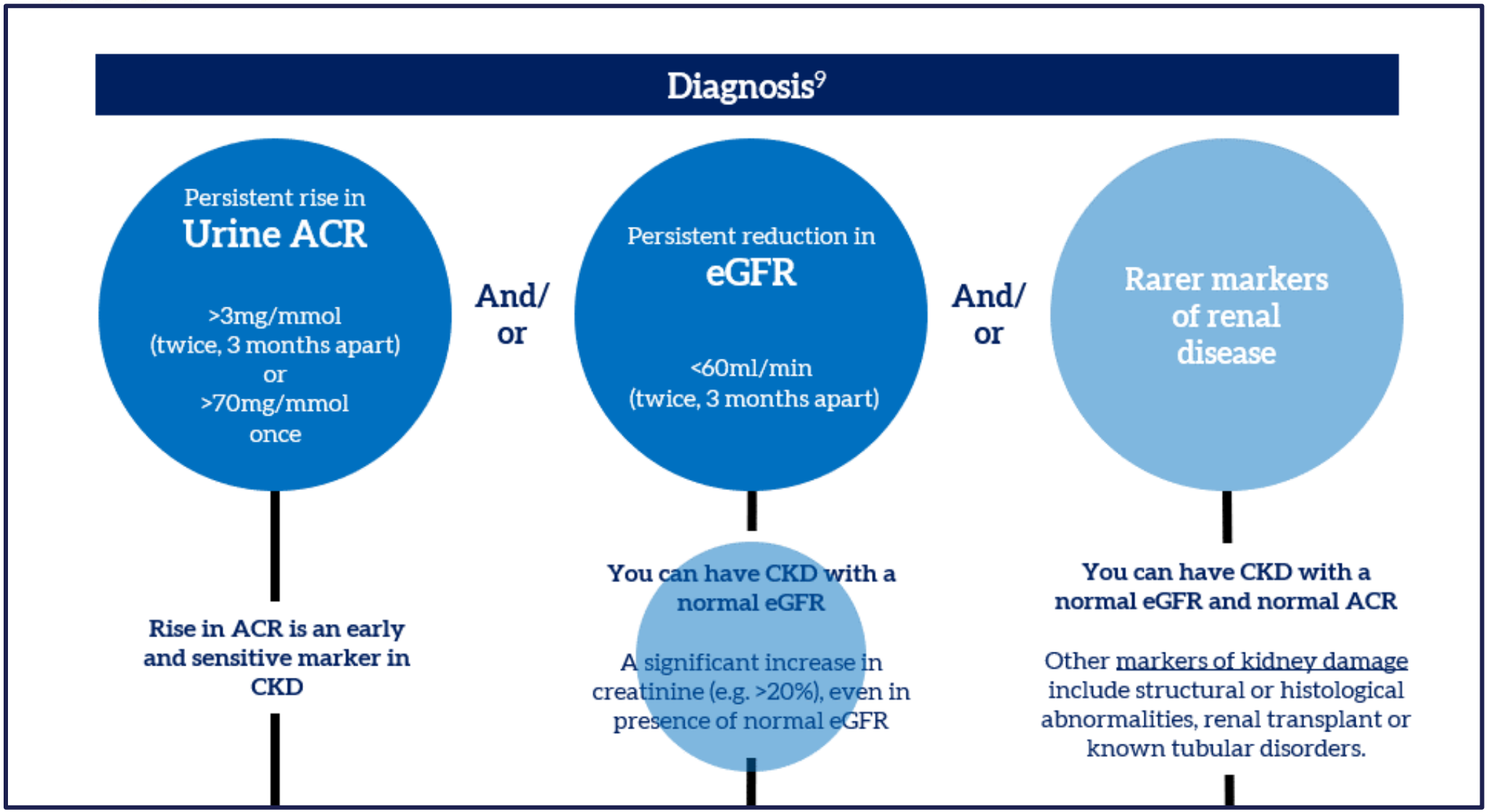

Mentimeter question

Which of these factors have likely contributed to Mrs Jones developing CKD (choose one or more)?

A. NSAIDs
B. Age
C. Hypertension
D. Ethnicity

Mentimeter question

Which of these factors have likely contributed to Mrs Jones developing CKD? Select all that are correct:

A. NSAIDs
B. Age
C. Hypertension
D. Ethnicity

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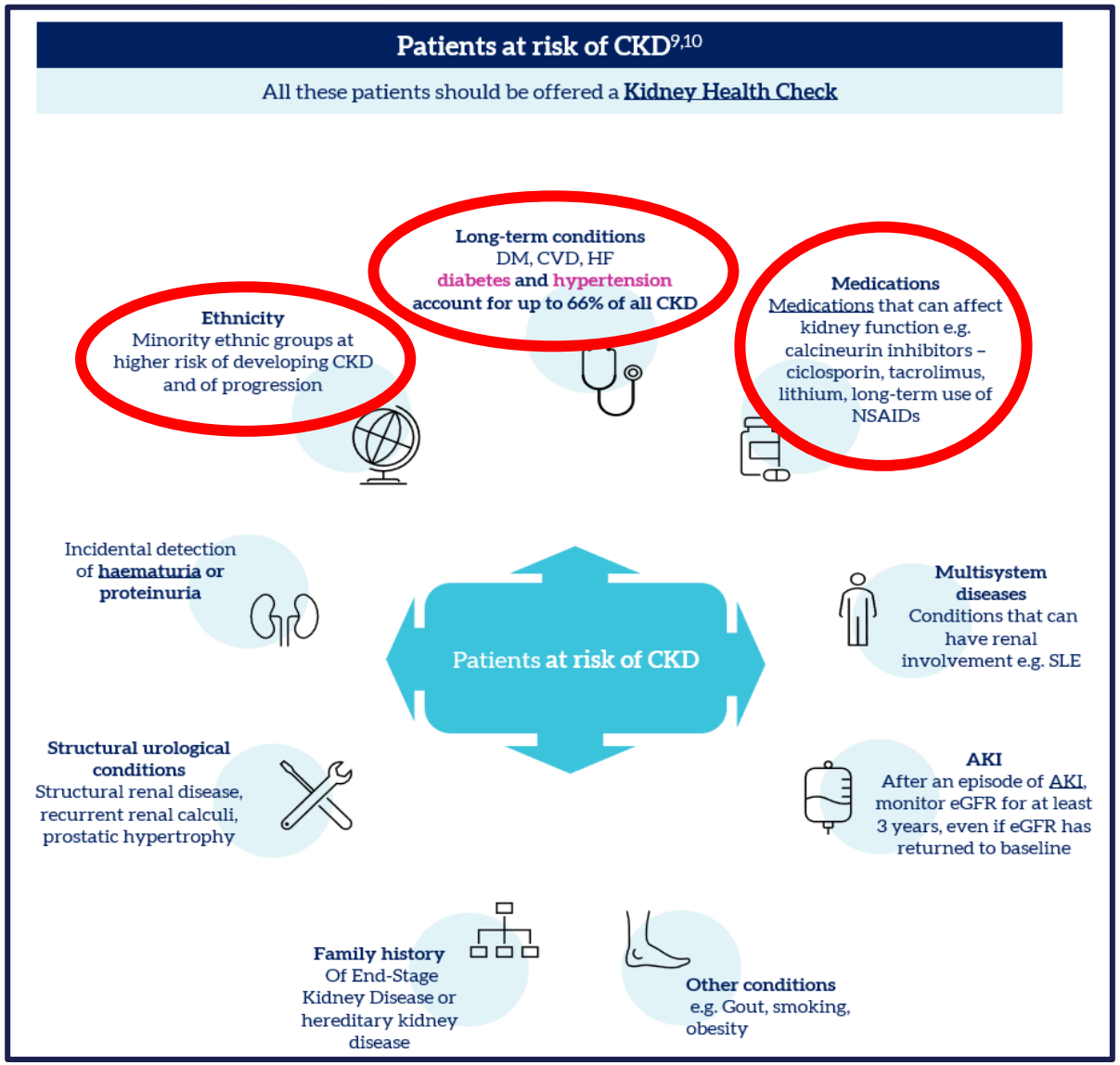
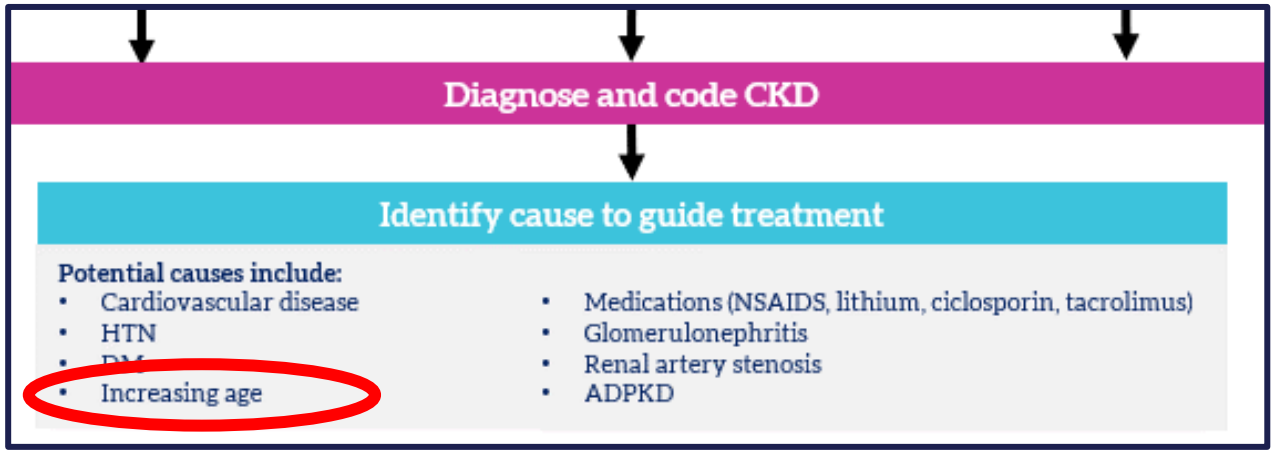
Patients at risk of CKD[9,10]

All these patients should be offered a **Kidney Health Check**





Mrs Jones

You call Mrs Jones 1 week later to discuss the results of her investigations.

She says:

I don't like the sound of chronic kidney disease Doc…

Does that mean I will need dialysis?

Do I need to see a specialist now?

Is there anything I can do to stop it?

Mentimeter question

How often does Mrs Jones need to have her renal function monitored each year?

A. 0
B. 1
C. 2
D. 3
E. 4

Mentimeter question

How often does Mrs Jones need to have her renal function monitored each year?

A. 0
B. 1
C. 2
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E. 4

CKD: Staging, coding and what to tell newly diagnosed patients[8,9]

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Why stage CKD?

CKD should be staged using "CGA" based on cause of CKD **(C)**, GFR category **(G)** and albuminuria category **(A)**. The higher the stage, the more 'severe' the CKD

Staging helps inform:

1. Prognosis (risk of progression): the higher the stage the higher the risk of progression
2. Cardiovascular risk
3. Required frequency of monitoring
4. Management – targets and choice of medications

Risk	Minimum number of eGFR checks per year
Low	0-1
Moderate	1
High	1-2
Very High	2
Very High	2-3
Very High	4-4+

Mrs Jones
eGFR 57
ACR 2.3

eGFR categories (ml/min/1.73 m²), description and ran		ACR categories (mg/mmol), description and range		
		<3 Normal to mildly increased	3-30 Moderately increased	>30 Severely increased
		A1	A2	A3
>90 Normal and high	G1	No CKD in the absence of any other markers of kidney damage		
60-89 Mild reduction related to normal range for a young adult	G2			
45-59 Mild – moderate reduction	G3a			
30-44 Moderate - severe reduction	G3b			
15-29 Severe reduction	G4			
<15 Kidney failure	G5			

Increasing risk

Increasing risk

What to tell newly diagnosed patients

If CKD stage 3-5, consider advising patients of their **5-year risk of needing renal replacement therapy** using the Kidney Failure Risk Equation, which is equivalent to a 'QRISK tool' for the kidneys.

Refer to renal if 5-year risk of needing renal replacement is >5%

Overview of CKD

- What kidneys are and their function (Kidney Care UK)
- How kidney function is tested (Kidney Research UK)
- Know your numbers – encourage patients to know their urine ACR, eGFR, BP and HbA1c (if diabetic)
- The patient's CKD stage and prognosis
- CKD is common in the UK - 10% prevalence. Most people are asymptomatic and monitored by the GP
- Prognosis: <2% of people with CKD progress to renal replacement therapy (dialysis/kidney transplantation) in 5 years.
- Lifestyle advice – connect them with support services
- Explain medical treatment of CKD
- Importance of regular testing/annual review (NHS UK – Living with kidney disease)

Patient resources

- Think Kidneys - range of PILS such as explanation of CKD and at risk of AKI (including sick day rules)
- Kidney Care UK – range of PILS with information on medication, grants, travel, dialysis and more
- Patient.info – PILS
- Living with CKD (nhs.uk)
- Kidney Care UK's National Advocacy Service 01420 541 424 or online community
- National Kidney Federation offer a Free National Kidney Patient's Helpline 0800 169 09 36
- PILS for starting: SGLT2i without diabetes, SGLT2i: with diabetes

Suggested coding for CKD- TBC

Update January 2023: There is a London-wide project nearing completion that will make a recommendation to standardise coding for CKD.
This guide will be updated as soon as the regional work is published.

Mentimeter question

Does Mrs Jones need a renal referral at this stage?

A. Yes
B. No
C. Calculate 5 year risk of needing renal replacement therapy, refer if >5%

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Approximately how many patients with CKD will progress to need renal replacement therapy (dialysis/renal transplant) within 5 years?

A. 0.5%
B. 2%
C. 5%
D. 8%
E. 10%
F. 20%

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F. 20%

CKD: Staging, coding and what to tell newly diagnosed patients[8,9]

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Why stage CKD?

CKD should be staged using "CGA" based on cause of CKD (C), GFR category (G) and albuminuria category (A). The higher the stage, the more 'severe' the CKD

Staging helps inform:

1. Prognosis (risk of progression): the higher the stage the higher the risk of progression
2. Cardiovascular risk
3. Required frequency of monitoring
4. Management – targets and choice of medications

Risk	Minimum number of eGFR checks per year
Low	0-1
Moderate	1
High	1-2
Very High	2
Very High	2-3
Very High	4-4+

Mrs Jones
eGFR 59
ACR 73.3

eGFR categories (ml/min/1.73 m²), description and range		ACR categories (mg/mmol), description and range		
		<3 Normal to mildly increased	3-30 Moderately increased	>30 Severely increased
		A1	A2	A3
>90 Normal and high	G1	No CKD in the absence of any other markers of kidney damage		
60-89 Mild reduction related to normal range for a young adult	G2			
45-59 Mild – moderate reduction	G3a			
30-44 Moderate - severe reduction	G3b			
15-29 Severe reduction	G4			
<15 Kidney failure	G5			

Increasing risk

Increasing risk

What to tell newly diagnosed patients

If CKD stage 3-5, consider advising patients of their **5-year risk of needing renal replacement therapy** using the **Kidney Failure Risk Equation**, which is equivalent to a 'QRISK tool' for the kidneys.

Refer to renal if 5-year risk of needing renal replacement is >5%

Overview of CKD

- What kidneys are and their function (Kidney Care UK)
- How kidney function is tested (Kidney Research UK)
- Know your numbers – encourage patients to know their urine ACR, eGFR, BP and HbA1c (if diabetic)
- The patient's CKD stage and prognosis
- CKD is common in the UK - 10% prevalence. Most people are asymptomatic and monitored by the GP
- Prognosis: <2% of people with CKD progress to renal replacement therapy (dialysis/kidney transplantation) in 5 years.
- Lifestyle advice – connect them with support services
- Explain medical treatment of CKD
- Importance of regular testing/annual review (NHS UK – Living with kidney disease)

Patient resources

- Think Kidneys - range of PILS such as explanation of CKD and at risk of AKI (including sick day rules)
- Kidney Care UK – range of PILS with information on medication, grants, travel, dialysis and more
- Patient.info – PILS
- Living with CKD (nhs.uk)
- Kidney Care UK's National Advocacy Service 01420 541 424 or online community
- National Kidney Federation offer a Free National Kidney Patient's Helpline 0800 169 09 36
- PILS for starting: SGLT2i without diabetes, SGLT2i: with diabetes

Suggested coding for CKD- TBC

Update January 2023: There is a London-wide project nearing completion that will make a recommendation to standardise coding for CKD.
This guide will be updated as soon as the regional work is published.

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KIDNEY FAILURE

RISK CALCULATION

If you don't have the information required below talk to your doctor.

Age (Yrs)

62

Sex

Female

eGFR (Ml/Min/1.73M2)

57

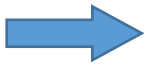
Urine Albumin: Creatinine Ratio

2.3

Units

mg/mmol

SUBMIT



Patient risk of progression to kidney failure requiring dialysis or transplant:

AT 2 YEARS	AT 5 YEARS
<0.1 %	0.2 %

Mentimeter question

What are the next most important steps to manage her CKD (choose one or more)?

1) Code CKD
2) Offer statin
3) Offer lifestyle advice
4) Treat BP to <130/80
5) Treat BP to <140/90
6) Start an ACE-I /ARB
7) Request renal ultrasound
8) Review NSAID use

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Vaccines
Flu
Pneumococcal (5 yearly)
Covid

Comorbidities
Stress the importance of managing especially DM, HTN and cholesterol
Remind them of the importance of regular reviews

Hypertension Targets		
ACR<70	Systolic 120-139	Diastolic <90
ACR>70	Systolic 120-129	Diastolic <80
Frail	Individualised	

Nephrotoxic drugs
Consider stopping:
- All NSAIDs (including topical)
- Aminoglycosides
- Bisphosphonates
- Calcineurin inhibitors (ciclosporin, tacrolimus)
- Diuretics
- Lithium
- Mesalazine

Over the counter (OTC) drugs
Educate about OTC **avoidance of NSAIDs**, herbal remedies and use protein supplements with caution

AKI
Counsel about AKI risk and symptoms (reduced urine output, appetite loss, nausea, vomiting, shortness of breath, oedema)
See for more details on assessment

Sick day rules
Sick day guidance in CKD is nuanced, as stopping or reducing medications may do more harm than good. [12,16,26]

Patients should seek medical advice in the event of acute illness (e.g. diarrhoea or vomiting; fever, sweats or shaking) to discuss temporarily stopping medications that may increase the risk of AKI. Decisions should be carefully made on an individualised basis.

Common medications to consider pausing: Diuretics (if dehydrated): ACE-I/ARBs; Metformin; NSAIDs; SGLT2i

Restart medicines as soon as well and eating normally. **It is important to restart medications after acute illness.**

Medical

Patient advice

Patient education is integral to the management of CKD[9,-13,22]

Lifestyle

Smoking
Support cessation
Major additive CVD risk factor

Education
Provide sources of support

Mental Health
Screen for depression or anxiety
Consider local IAPTs for Long Term Conditions

Weight
Advise patients to maintain a healthy weight
Obesity increases risk of declining eGFR
Signpost to local resources

Exercise
Regular exercise- aim for >150mins/ week

Diet
Healthy diet for CKD
Reduce salt to less than 6g/day (one teaspoon)
Do not offer low protein diets.
Alcohol within healthy limits

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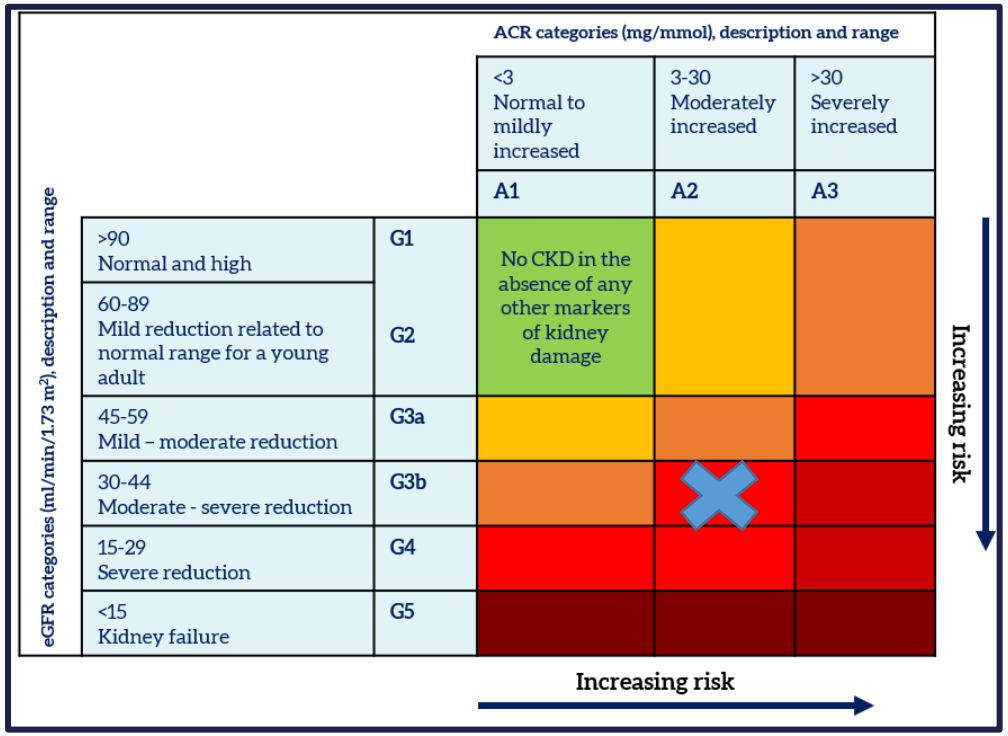
Mr Smith

Annual CKD review

- Age 70 White British
- Mr Smith has **CKD stage 3b A2**
- He feels well



PMH

- T2DM
- BMI 34

Medications

- Bisoprolol 5mg
- Metformin 1g BD
- Atorvastatin 20mg
- Ramipril 2.5mg

Investigations (12 months ago)

eGFR 32
Creatinine 144
BP 128/80
Urine ACR 6.2 (3 years ago)

Mentimeter question

What investigations should be included in Mr Smith's annual CKD review (choose one or more)?

1) Urine ACR
2) FBC
3) Bone profile/Vit D/PTH
4) Renal profile
5) Hba1c
6) Creatinine Kinase
7) Lipid profile
8) Urine dipstick
9) Blood pressure
10) Renal Ultrasound

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Mentimeter question

What investigations should be included in Mr Smith's annual CKD review? Select all that are correct

1) Urine ACR
2) FBC
3) Bone profile/Vit D/PTH
4) Renal profile
5) Hba1c
6) Creatinine Kinase
7) Lipid profile
8) Urine dipstick
9) Blood pressure
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CKD investigations[9,10]

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	Urine ACR	eGFR	HbA1c/Lipids	Urine dipstick	BP	Ultrasound (US)	FBC/ Bone Profile/Vit D/PTH
For diagnosis	YES	YES					
To investigate causes and assess risk factors			YES	YES	YES	CONSIDER- see below	
To include in annual review	YES	YES	YES	YES	YES		CONSIDER - see below
Notes on the investigations	**If urine ACR result:** • **Between 3-70mg/mmol repeat sample to confirm. An early morning sample is ideal but not essential.** • **>70mg/mmol - no repeat needed. The patient has CKD.** Albuminuria is an early and key marker of glomerular damage. Factors that may transiently affect ACR: • Menstruation • Strenuous exercise • Genital discharge • UTI (rarely - always recheck when infection resolved)	**Do not adjust for ethnicity** **Interpret eGFRs as a trend over time** eGFR may be less reliable in: • AKI • Pregnancy • Malnutrition • Protein supplementation • Eating meat 12h before the test • High muscle mass • Oedematous states, muscle wasting disorders, those with amputation If eGFR is >90ml/min/1.73m^2, use an increase in serum creatinine concentration of >20% to infer significant reduction in kidney function. Creatinine clearance should be used in patients >75 years and those with a BMI <18 or >40.	**Statins are recommended for all patients with CKD – no need for QRISK.** HbA1c and lipid blood tests help to assess cardiovascular risk factors which could contribute to CKD progression. If HbA1c or Lipids are raised see relevant section in CESEL Diabetes guides. Atorvastatin is first line. SEL Lipid Management contains more detailed advice.	**Incidental haematuria on urine dipstick must be followed up.** **Non-visible haematuria (NVH)** or microscopic haematuria is when there is at least **1+ of blood on dipstick.** **Visible haematuria (VH)** or macroscopic haematuria is commonly caused by UTI, renal calculi, prostatic disease, menstrual contamination, renal tract trauma (e.g. catheterisation), post-surgical or urinary tumours (<5%).[25] See haematuria outline for further advice, investigations and referrals. **Incidental proteinuria- check Urine ACR**	**NICE targets:** If ACR <70mg/mmol **120-139/90mmHg** If ACR ≥70mg/mmol or co-existent diabetes **120-129/80mmHg** Maintaining BP within target range reduces the progression of CKD and reduces the risk of CVD and mortality. CESEL Hypertension guides	Offer renal tract US in patients with any of: • Accelerated progression of CKD • VH/persistent NVH • Symptoms of urinary tract obstruction • Family history of Polycystic Kidney Disease (PCKD) • eGFR <30 ml/min/1.73m^2	Check FBC regularly in patients with eGFR <45ml/min/1.73m^2 or if symptomatic. If renal anaemia is suspected then refer to specialist (exclude iron deficiency anaemia first). Calcium/Phosphate/ Vit D/PTH should be monitored if eGFR <30ml/min/1.73m^2 or if bone disease is suspected. NICE guidance on frequency of monitoring

Mr Smith

Repeat investigations (results 12 months ago in brackets)

- eGFR 33 (32)
- Creatine 149 (144)
- Potassium 5.3
- HbA1c 52
- Urine ACR 7.5 (6.2)
- BP 129/75 (128/80)
- Urine dipstick – NAD

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Mentimeter question

What are the next most important steps to manage his CKD (choose one or more)?

1) Refer to renal
2) Repeat U&Es
3) Stop Ramipril
4) Consider stopping bisoprolol
5) Check Ramipril is at maximum tolerated dose
6) Consider starting SGLT-2i
7) Increase atorvastatin dose
8) Stop or reduce Furosemide
9) Lifestyle advice (stop smoking, reduce salt intake, reduce ETOH)

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Mentimeter question

Which of these two actions have the most significant impact on delaying CKD progression?

1) Diabetes control
2) Blood pressure control
3) SGLT2-I
4) Lipid control
5) Maximising ACE-I /ARB (RAAS blockade)
6) Lifestyle advice

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CKD management outline[9,15-19]

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This management outline does **not** apply to patients with **structural or genetic causes of CKD**, or **Type 1 Diabetes**
This management should be part of a shared decision making process

Minimise Cardiovascular risk factors

Lifestyle advice
Patient education is integral to management of CKD

AND

Optimise BP control
If on ACE-I/ARB **titrate to maximum** licensed tolerated dose.
Reduce other antihypertensives if needed

AND

Offer and optimise lipid control
Offer a statin to all CKD patients (unless contraindicated). Offer even if Qrisk <10%
Atorvastatin 20mg is first line

AND

Optimise DM control
See CESEL Diabetes guide for guidance

CKD without Type 2 Diabetes

Check urine ACR

ACR <22.6 mg/mmol
Lifestyle/ BP/ Lipid control as above

ACR ≥ 22.6 mg/mmol

Offer ACE-I/ARB
Offer ACE-I/ARB, irrespective of co-morbid hypertension (unless contraindicated)
Titrate to maximum licensed tolerated dose (reduce other antihypertensives if needed)

Offer dapagliflozin
Once ACE-IARB at maximum tolerated dose: Offer dapagliflozin
eGFR: only start if between 25 - 75ml/min, if eGFR <25 ml/min discuss with renal team
If patient is already on SGLT2i for **heart failure**: continue current SGLT2i

As of January 2023, dapagliflozin is the only licensed SGLT2i for CKD (without T2DM)

See Preferred Medication for further details on prescribing

CKD with Type 2 Diabetes

Check urine ACR

ACR <3 mg/mmol
Standard Diabetes management

ACR ≥3 mg/mmol

Offer ACE-I/ARB
Offer ACE-I/ARB, irrespective of co-morbid hypertension (unless contraindicated)
Titrate to maximum licensed tolerated dose (reduce other antihypertensives if needed)

Offer SGLT2i

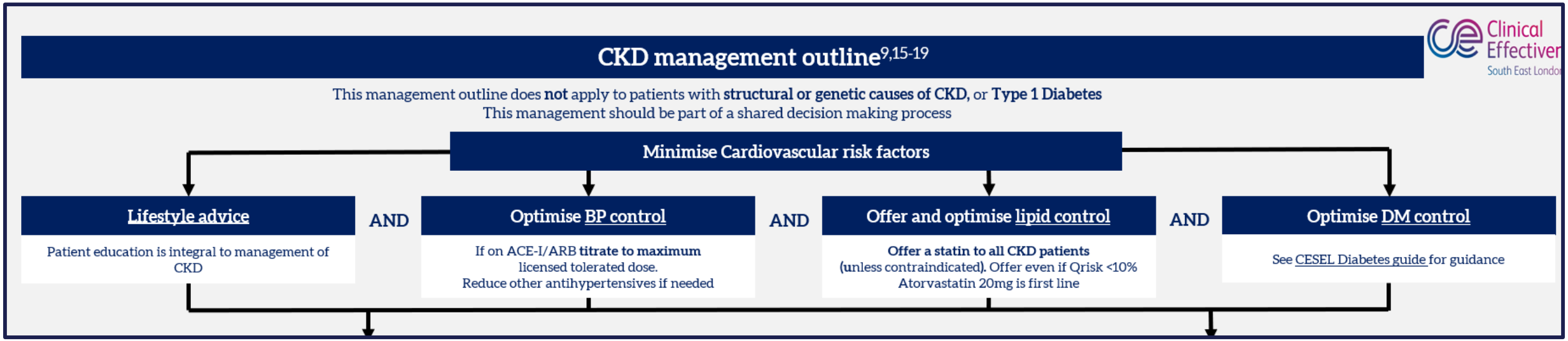
Not already on SGLT2i
Use Dapagliflozin or Canagliflozin

Already on SGLT2i:
Continue current SGLT2i

Once ACE-I/ARB at maximum tolerated dose: Offer SGLT2i
eGFR: SGLT2is have different eGFR cut offs (see CESEL Diabetes)

To facilitate introduction, **consider reducing dose of other glucose lowering medications**

See Preferred Medication for further details on prescribing


CKD management outline9,15-19
Clinical Effectiver
South East Londo
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AND
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See CESEL Diabetes guide for guidance

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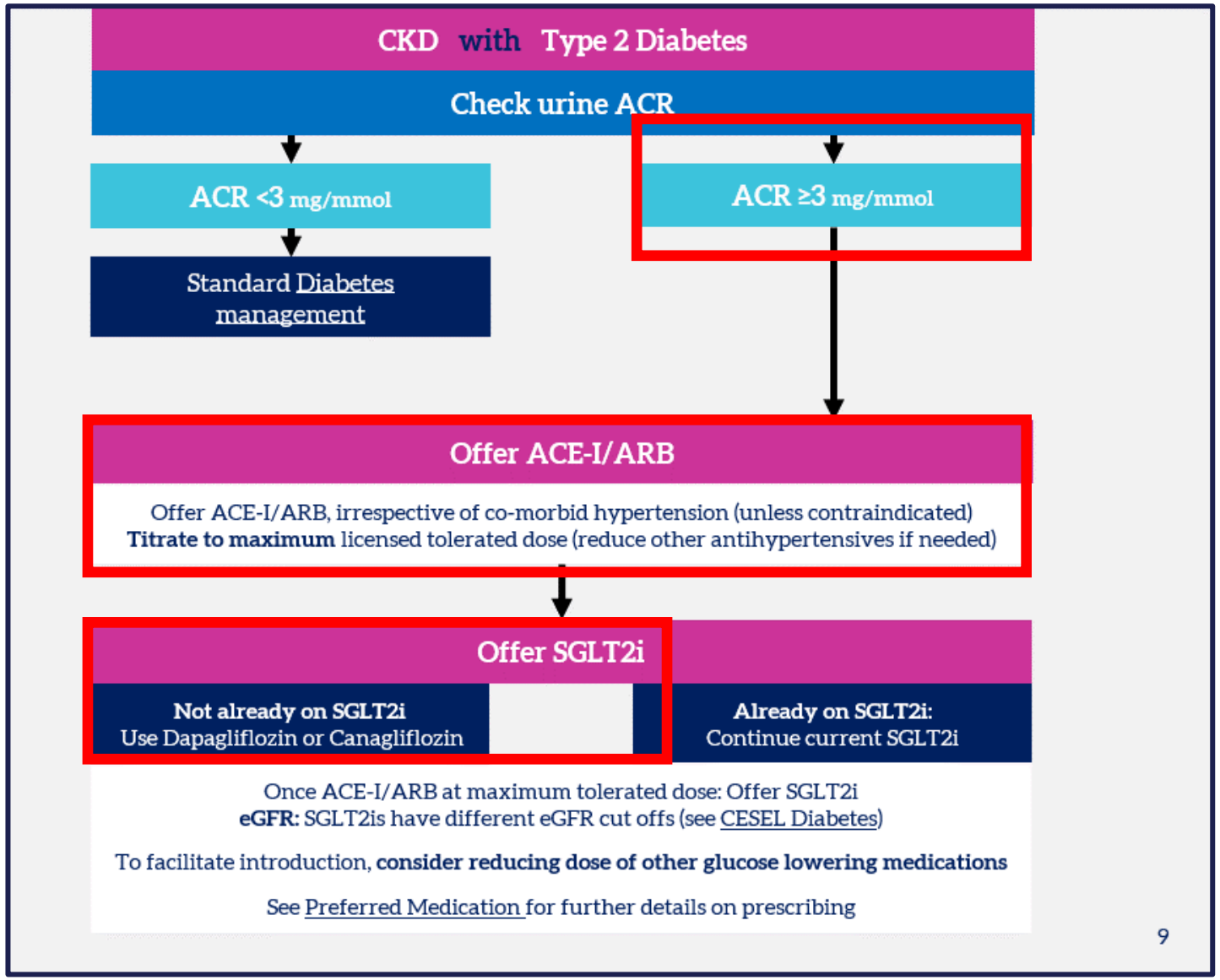

CKD: Preferred Medication[9,12,17,18,23,24]

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	Drug	Starting dose	Daily Range	Notes (This information is not exhaustive, please refer to the SEL Joint Medicines Formulary for further details and the BNF for additional information especially titration increments/cautions/contra-indications). SEL IMOC guidance for the management of BP, T2DM and lipids can be accessed here.
ACE-I	Ramipril	5mg OD (or 2.5mg OD if 5mg clinically inappropriate**) (1.25mg OD in frail/elderly or CrCl <30ml/min)	1.25mg-10mg OD (max 5mg if CrCl <60ml/min)	• **For people of Black African or African-Caribbean family origin, use ARB instead of ACE-I (as increased risk of angioedema with ACE-I)** • Check base line U&Es and renal profile (Na/K/Cr/eGFR). Hyperkalemia may occur, therefore close monitoring of serum potassium is required. **If serum potassium is greater than 5 mmol/L, do not start treatment with an ACE-I/ARB and seek renal advice**
	Lisinopril	10mg OD 2.5mg -5mg OD if CrCl <30ml/min	2.5mg-80mg OD (20mg for HTN maintenance)	to BNF and SPC for further information regarding dosing in renal function and if no additional cause is found then stop ACE-I further formation
ARBs	Losartan	50mg OD (25mg OD in frail/ elderly or those taking diuretics)	25mg-100mg OD	CE-I, consider switch to ARB mation relating to pregnancy/breastfeeding and hepatic impairment
	Candesartan	8mg OD (4mg OD in frail/ elderly or those taking diuretics)	4mg-32mg OD	e few or no comorbidities. Advise to stay well hydrated and review if
Statin	Atorvastatin	20mg OD	20-80mg OD	aiming for a 40% fall in non-HDL cholesterol levels vise patient to stop treatment, 3 months before conception • Multiple drug interactions refer to BNF before initiating treatment- avoid grapefruit juice • Advise patient to visit GP if they experience unexplained muscle pains • Refer to SEL IMOC Guidelines on Lipid Management if Atorvastatin contraindicated or not tolerated.

SGTL2i	Dapagliflozin
	
	Indicated for CKD with or without T2DM
		10mg OD	10mg OD	**For full information please see SEL Guide for Prescribing SGLT2i in HbA1c Management in Adults with T2DM and CESEL Diabetes Guide**
				
				• Dapagliflozin can be taken orally, once daily, at any time of day, with or without food. Canagliflozin can be taken orally, once daily, preferably before breakfast
				• **Contraindications:** Hypersensitivity to the active substance or excipients and DKA. Refer to the SPC and BNF
				• **Use with caution in patients for:**
				  • Whom SGLT2i induced drop in blood pressure could pose a risk (SPC)
				  • BMI <25 (<23 in South Asian people)
				  • People diagnosed with, or at risk of frailty
				  • DKA- review DKA risk factors and address modifiable risk factors. Note DKA can occur with normal glucose levels with SGLT2i (euglycemic ketoacidosis)
				• **MHRA/CHM advice:**
				  • **SGLT2i:** Risk of diabetic ketoacidosis (April 2016), increased risk of lower-limb amputation (mainly toes) (March 2017), Fournier's gangrene (necrotising fasciitis of the genitalia or perineum) (Feb 2019), and monitor ketones in blood during treatment interruption for surgical procedures or acute serious medical illness (March 2020)
				• **Common side effects:** Increased risk of UTI and genital infections. For full side effect profile refer to the BNF, and SPC
				• **Interactions:** Multiple drug interactions, with risk of hypotension and hypoglycaemia. Refer to BNF before initiating treatment, currently no severe interactions identified
				• **Hepatic impairment:** Use dapagliflozin with caution in severe impairment. Canagliflozin is not recommended for patients with severe hepatic impairment (BNF)
				• **Renal impairment: Dapagliflozin:** eGFR <15ml/min- do not initiate. eGFR <25ml/min- seek specialist advice (BNF). **Canagliflozin**: Do not initiate if eGFR< 30ml/min
				• **Pregnancy and breastfeeding:** Avoid- toxicity reported in animal studies (BNF)
				• **Sick day rules for T2DM:** Please refer to Trend T2DM sick day rules

	Canagliflozin Indicated for CKD with T2DM	100mg OD	100mg – 300mg OD (max 100 mg once daily when eGFR less than 60ml/min	

This page on preferred medicines in CKD contains concise information on starting doses, cautions and side effects

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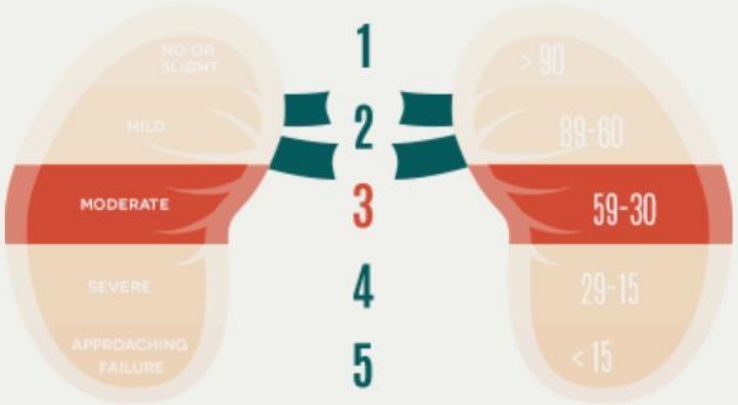
STAGE 3

MODERATE DECREASE IN FUNCTION

CKD STAGES

ESTIMATED GLOMERULAR FILTRATION RATE



Patient risk of progression to kidney failure requiring dialysis or transplant:

AT 2 YEARS	AT 5 YEARS
1.3 %	4.5 %

NICE Referral Criteria:

Taking into account the individual's wishes and other health conditions, considering referral to a hospital kidney doctor if:

- 5-year KFRE predicted risk over 5% risk KFRE

Referral and Secondary care support[9,20,21]

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Consider urgent renal referral (or discussion)

ACR **>250** mg/mmol- consider nephrotic syndrome

eGFR **< 15** ml/min (G5)

AKI (without an obvious cause manageable in primary care)

Multisystem disease suspected with evidence of renal involvement

Hypertension accelerated/ malignant

Severe hyperkalaemia > 6.5 mmol/l

Consider routine renal referral

ACR **>30 mg/mmol with haematuria** (follow haematuria outline in addition)

>70 mg/mmol (unless known to be caused by diabetes and already appropriately treated)

eGFR **15-29** ml/min, (G4) particularly if new

ACE-I/ARB induced fall in eGFR > 25%, or >30% rise in creatinine

Accelerated progression of CKD (eGFR 30-59 mol/min):
- Persistent decrease in eGFR of ≥25% and a change in CKD category within 12 months
- Or a persistent decrease in eGFR of 15ml/min within 12 months

Normal eGFR but evidence of kidney disease (e.g. genetic diagnosis, associated urinary abnormalities) or rapidly progressive renal impairment

Uncontrolled BP >150/90 mmHg on 4 agents at therapeutic doses

Unexplained anaemia – Hb <110 g/L or symptomatic

Renal bone disease suspected - abnormal potassium, calcium or phosphate

Non-visible haematuria unexplained (not meeting 2WW criteria or negative urological investigations)

5-year risk of needing renal replacement therapy **> 5%** (measured using the 4-variable Kidney Failure Risk Equation)

Rare or genetic causes of CKD (known or suspected)

Consider Advice & Guidance or Consultant Connect

Unclear cause of CKD

Difficulty interpreting investigations

Renal Advice and Referrals

All **urgent referrals** should be discussed with the renal registrar on-call
- Guy's: 07789 505 184 (Direct) / 0207 188 3026 (via Switchboard) for renal SPR on call
- King's: 0203 299 9000 and ask for Bleep 622 or Renal SPR on call
- UHL: does not accept urgent referrals

Consultant connect GSTT/KCH- Renal Medicine, UHL- Ambulatory Care

Non-urgent advice: eRS 'Advice & Guidance' or Refer to the following clinics via eRS

GSTT
Chronic Kidney Disease (CKD)
Nephrology – GSTT
General Nephrology and Renal Medicine – UHL

KCH
Nephrology clinic – Queen Elizabeth Woolwich
Nephrology CAS – Renal KCH
Nephrology CAS – Renal PRUH

Referral form (on DXS): 'SEL Nephrology and CKD Referral Form Final
Bromley: use Referrals Optimisation Protocol: Nephrology/referrals

For Diabetes team contact information see CESEL guides. For Heart failure contacts see local resources.

When to refer to Urology

Urology 2ww criteria (see haematuria section and **NICE NG12**)

Obstructive uropathy/renal outflow obstruction - Should usually be referred to urology unless urgent medical intervention is needed for the metabolic effects of renal failure e.g. hyperkalaemia, symptomatic uraemia or fluid overload

Dialysis information

List of dialysis units at GSTT Kidney dialysis - Dialysis units | Guy's and St Thomas' NHS Foundation Trust (guysandstthomas.nhs.uk)

List of dialysis units at KCH Renal - King's College Hospital NHS Foundation Trust (kch.nhs.uk)

Mr Smith

You see Mr Smith a few weeks later

- He is now on the maximum dose of Ramipril he can tolerate 7.5mg and his U&Es are stable
- He has been started on dapagliflozin 10mg and has no side effects
- **Is there anything else that should be done as part of the annual review?**

CKD management at practice level

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The following tasks may be done by administrators, social prescribers, care co-ordinators, HCAs, nurses, pharmacists, physician associates or GPs – depending on practice pathways and staff availability

Contact CESEL team for advice and information on searches and quality improvement support

Tasks		Tools/support
1. Maintaining the CKD register (prevalence improvement)	**Unknown CKD** Patients at risk of CKD without a recent Urine ACR/ eGFR	• EMIS searches e.g. QOF/Ardens
	Uncoded CKD Ensure CKD is coded [Coding TBC]	
	How to get renal profile and Urine ACR	• During consultations • Send text with request • Medication reviews/note on prescription • Secondary care resources: Cerner, clinic letters
	How to get BP readings	• HBPM: AccuRx florey, eConsult hypertension review • Secondary care sources: Cerner, London Care Record, clinic letters • Hypertension Check Service by Community Pharmacy
2. Call/Recall	**Prioritise high risk patients**	
	Pre-patient review • Arrange bloods (renal profile, lipids + HbA1c to assess for CVD risk factors , FBC for renal anaemia and bone profile/Vit D/PTH for renal metabolic disease – depending on CKD stage or clinical suspicion) • Arrange urine ACR • Arrange BP measurement and pulse check (in practice/machine at home/pharmacy) • Book appointment for annual review	• EMIS searches e.g. Ardens • Text messaging service e.g. AccuRx, Mjog, iPLATO • Patient letters • Telephone call
3. QOF CKD review (at least annually)	• **History:** patient concerns • **Review investigations:** BP*, blood and urine results. Urine dipstick to check for haematuria, if present follow pathway • **Ensure correct CKD stage is coded** • **Discuss risk-reduction and offer lifestyle advice**: BMI*, smoking*, alcohol*, diet, activity. Advise on increased risk of AKI if unwell • **Mind and body**: consider screening for mental health conditions* • **Medications review**: concerns, side-effects, adherence. Identify potential nephrotoxic drugs and adjust doses of medications according to renal profile. Caution use of NSAIDs. Ensure medications are appropriately reconciled and titrated after hospital admissions. • **Immunisations**: ensure up to date with influenza, pneumococcal (5 yearly) and Covid 19 • **Refer to secondary care if** eGFR<30 mL/min/1.73 m^2 or accelerated CKD progression • Check for other long-term conditions e.g. diabetes and hypertension * These indicators make up the **Vital 5** which are key factors to improve individual and population health outcomes.	**In practice consultations** • F2F or remote consultation using a CKD template e.g. Ardens • Structured medication review with pharmacist **Out of practice consultations** • Home visiting team • Out of hours primary care services • Secondary care
	Follow-up The frequency of monitoring depends on their CKD stage.	Set up recall with EMIS template or text messaging service

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	Follow-up The frequency of monitoring depends on their CKD stage.

Update CKD Code On EMIS

Mental Health Screening

Immunisations

Reinforce Patient education:

- Sick day rules
- Lifestyle advice
- OTC medication education
- Signpost patient support

Key messages

Clinical Effectiveness South East London

Our Healthier South East London Integrated Care System

NHS

Chronic Kidney Disease (CKD)

A guide for South East London Primary Care (Adult)

Key messages

1. Check urinary ACR (albumin : creatinine ratio) in all patients at risk of CKD
2. Manage risk factors for patients with CKD: optimise blood pressure and diabetes control, offer statin
3. Up-titrate ACE inhibitors/ARBs (if indicated) to maximum tolerated dose
4. Offer SGLT2 inhibitors to eligible patients

Always work within your knowledge and competency

January 2023 (review January 2025, or earlier if indicated)

Q&A

Thank you very much

- All for attending
- And all who contributed to the CKD guide
- London Kidney Network
- CESEL team
- With special thanks to Dr Kate Bramham

Final comments

CKD guide is available online

Get in touch with us for your PCN/Practice CKD data:

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