

Chronic kidney disease overview

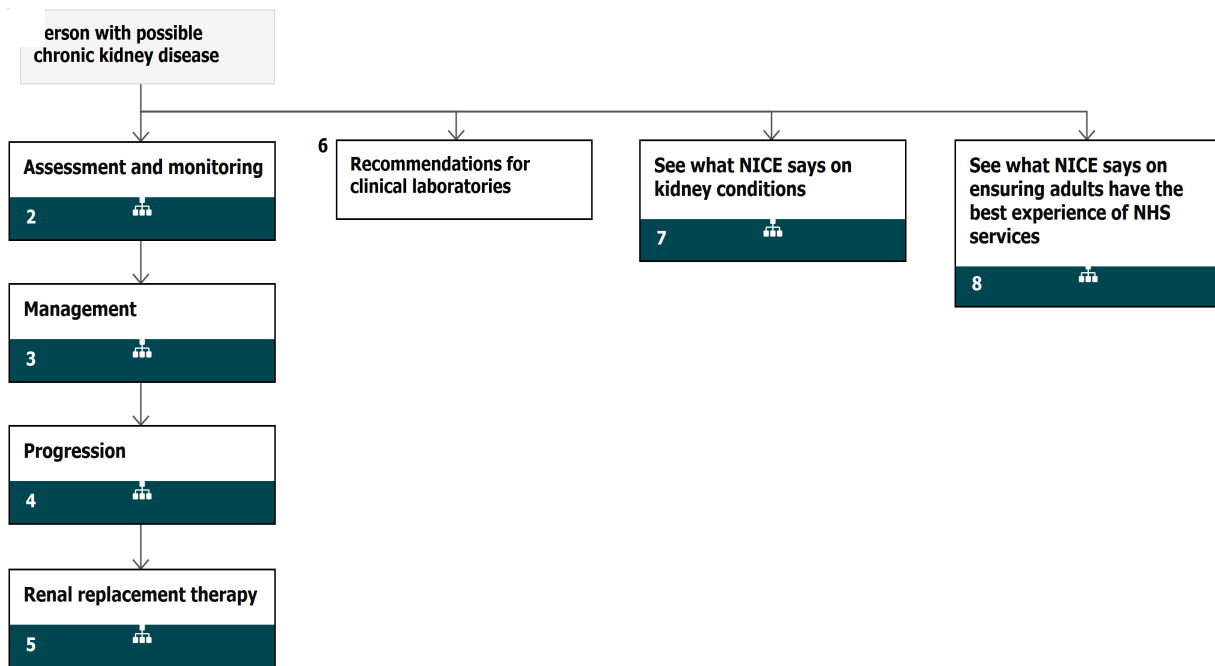
NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

<http://pathways.nice.org.uk/pathways/chronic-kidney-disease>

NICE Pathway last updated: 05 March 2019

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



1 Person with possible chronic kidney disease

No additional information

2 Assessment and monitoring

[See Chronic kidney disease / Assessment and monitoring of chronic kidney disease](#)

3 Management

[See Chronic kidney disease / Management of chronic kidney disease](#)

4 Progression

[See Chronic kidney disease / Progression of chronic kidney disease](#)

5 Renal replacement therapy

[See Chronic kidney disease / Renal replacement therapy for people with stage 4 or 5 chronic kidney disease](#)

6 Recommendations for clinical laboratories

Creatinine-based estimate of GFR

Whenever a request for serum creatinine measurement is made, clinical laboratories should report an estimate of glomerular filtration rate (eGFR_{creatinine}) using a prediction equation in addition to reporting the serum creatinine result. eGFR_{creatinine} may be less reliable in certain situations (for example, acute kidney injury, pregnancy, oedematous states, muscle wasting disorders, and in people who are malnourished or have had an amputation) and has not been well validated in certain ethnic groups (for example, in people of Asian family origin).

Clinical laboratories should:

- use the CKD-EPI creatinine equation to estimate GFR_{creatinine}, using creatinine assays with calibration traceable to standardised reference material

- use creatinine assays that are specific (for example, enzymatic assays) and zero-biased compared with IDMS
- participate in a UK national external quality assessment scheme for creatinine.

(For help with [implementation: getting started](#) see the NICE guideline on chronic kidney disease).

Cystatin C-based estimate of GFR

Whenever a request for serum cystatin C measurement is made, clinical laboratories should report an estimate of glomerular filtration rate (eGFR_{cystatinC}) using a prediction equation in addition to reporting the serum cystatin C result.

When an improved assessment of risk is needed (see 'when to use a cystatin C-based estimate of GFR for diagnosis of CKD' in [classification, diagnosis and risk of adverse outcomes](#)), clinical laboratories should use the CKD-EPI cystatin C equation to estimate GFR_{cystatinC}.

Clinical laboratories should use cystatin C assays calibrated to the international standard to measure serum cystatin C for cystatin C-based estimates of GFR.

Reporting GFR values

Clinical laboratories should report GFR either as a whole number if it is 90 ml/min/1.73 m² or less, or as 'greater than 90 ml/min/1.73 m²'.

7 See what NICE says on kidney conditions

[See Kidney conditions](#)

8 See what NICE says on ensuring adults have the best experience of NHS services

[See Patient experience in adult NHS services](#)

Glossary

ACR

albumin:creatinine ratio

aAPD

assisted automated peritoneal dialysis

APD

automated peritoneal dialysis

AVF

arteriovenous fistula

BCM

body composition monitor

CAPD

continuous ambulatory peritoneal dialysis

CKD

(chronic kidney disease: defined as abnormalities of kidney function or structure present for more than 3 months, with implications for health; this includes all people with markers of kidney damage and those with a glomerular filtration rate of less than 60 ml/min/1.73 m² on at least 2 occasions separated by a period of at least 90 days (with or without markers of kidney damage))

CKD-EPI

Chronic Kidney Disease Epidemiology Collaboration

eGFR

estimated glomerular filtration rate (without indicating the method of estimation)

eGFRcreatinine

an estimation of glomerular filtration rate using serum creatinine

eGFRcystatinC

an estimation of glomerular filtration rate using cystatin C

GFR

glomerular filtration rate

HDF

haemodiafiltration

HD

haemodialysis

IDMS

isotope dilution mass spectrometry

Marker of kidney disease

(this includes albuminuria (ACR more than 3 mg/mmol), urine sediment abnormalities, electrolyte and other abnormalities due to tubular disorders, abnormalities detected by histology, structural abnormalities detected by imaging and a history of kidney transplantation)

NSAIDs

non-steroidal anti-inflammatory drugs

PCR

protein:creatinine ratio

PTH

parathyroid hormone

Renin–angiotensin–aldosterone system antagonist

(a drug that blocks or inhibits the renin–angiotensin–aldosterone system including angiotensin-converting enzyme (ACE) inhibitors, angiotensin-receptor blockers (ARBs), direct renin inhibitors and aldosterone antagonists)

Renin–angiotensin system antagonist

(a drug that blocks or inhibits the renin–angiotensin system including angiotensin-converting enzyme (ACE) inhibitors, angiotensin-receptor blockers (ARBs) and direct renin inhibitors. This group of drugs does not include aldosterone antagonists)

RRT

renal replacement therapy

Sources

[Chronic kidney disease in adults: assessment and management](#) (2014) NICE guideline CG182

Your responsibility**Guidelines**

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline

to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare

professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.