Chronic kidney disease in adults

NICE quality standard

Draft for consultation

First published March 2011

Last updated November 2014

This quality standard covers the assessment and management of chronic kidney disease in adults (aged 18 and over). It describes high-quality care in priority areas for improvement. NICE has published quality standards for renal replacement therapy services for adults and acute kidney injury.

This quality standard will update the existing quality standard on chronic kidney disease (published July 2014). For more information see update information.

This is the draft quality standard for consultation (from 1 March to 28 March 2017). The final quality standard is expected to publish in July 2017.

Quality statements

Statement 1 Adults with, or at risk of, chronic kidney disease (CKD) are offered eGFRcreatinine and albumin:creatinine ratio (ACR) testing at an agreed frequency. **[2011, updated 2017]**

Statement 2 Adults with CKD have their blood pressure maintained below the recommended target. **[2011, updated 2017]**

Statement 3 Adults with CKD are offered atorvastatin 20 mg. **[new 2017]**

NICE has developed guidance and a quality standard on patient experience in adult NHS services (see the NICE pathway on patient experience in adult NHS services), which should be considered alongside these quality statements.

Other quality standards that should be considered when commissioning or providing chronic kidney disease services include:

- Acute kidney injury (2014) NICE quality standard 76
- Renal replacement therapy services for adults (2014) NICE quality standard 72

A full list of NICE quality standards is available from the quality standards topic library.

Questions for consultation

Questions about the quality standard

Question 1 Does this draft quality standard accurately reflect the key areas for quality improvement?

Question 2 Are local systems and structures in place to collect data for the proposed quality measures? If not, how feasible would it be for these to be put in place?

Question 3 Do you think each of the statements in this draft quality standard would be achievable by local services given the net resources needed to deliver them? Please describe any resource requirements that you think would be necessary for any statement. Please describe any potential cost savings or opportunities for disinvestment.

Question 4 Do you have an example from practice of implementing the NICE guideline(s) that underpins this quality standard? If so, please submit your example to the NICE local practice collection on the NICE website. Examples of using NICE quality standards can also be submitted.

Questions about the individual quality statements

Question 5 For draft quality statement 1: Is the statement achievable and measurable, or would a narrower and more specific at-risk population be better?

Quality statement 1: Identification and monitoring

Quality statement

Adults with, or at risk of, chronic kidney disease (CKD) are offered eGFRcreatinine and albumin:creatinine ratio (ACR) testing at an agreed frequency. **[2011, updated 2017]**

Rationale

Routine monitoring of key markers of kidney function for adults with, or at risk of, CKD will enable earlier diagnosis and early action to prevent negative health outcomes relating to CKD progression, such as cardiovascular disease, progression to end stage kidney disease and mortality.

Quality measures

Structure

a) Evidence of local arrangements to ensure that adults with, or at risk of, CKD agree the frequency of eGFRcreatinine and ACR testing with their healthcare professional.

Data source: Local data collection. For example, service specifications.

b) Evidence of local arrangements to ensure that adults with, or at risk of, CKD have eGFRcreatinine and ACR testing at the agreed frequency.

Data source: Local data collection, for example, through local protocols on appointment reminders.

Process

a) Proportion of adults with, or at risk of, CKD who have an agreed frequency of testing documented.

Numerator – the number in the denominator who have an agreed frequency of testing documented.

Denominator – the number of adults with, or at risk of, CKD.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records, for example in the context of a local audit.

b) Proportion of adults with, or at risk of, CKD whose eGFRcreatinine and ACR testing takes place at the agreed frequency.

Numerator – the number in the denominator whose eGFRcreatinine and ACR testing takes place at the agreed frequency.

Denominator – the number of adults with, or at risk of, CKD.

Data source: Local data collection. The National CKD Audit reports the percentage of people with diabetes tested using serum creatinine and ACR in the last year, and people at risk of CKD without diabetes tested in the last 5 years. More comprehensive local measurement may include queries on patient records, for example in the context of a local audit.

Outcomes

a) Prevalence of undiagnosed CKD.

Data source: NHS Digital's Quality and Outcomes Framework 2015-16 reports the prevalence of patients aged 18 or over with CKD with classification of categories G3a to G5 registered at GP practices. Comparing recorded prevalence with expected prevalence estimated using a tool, such as Public Health England's CKD prevalence model, can give an indication of local prevalence of undiagnosed CKD.

b) Stage of CKD at diagnosis.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

What the quality statement means for different audiences

Service providers (general practices and secondary care services, such as diabetes and rheumatology clinics) ensure that systems are in place for adults with, or at risk of, CKD to be offered eGFRcreatinine and ACR testing at an agreed frequency.

Healthcare professionals (GPs, specialists, nurses or pharmacists) discuss and agree the frequency of eGFRcreatinine and ACR testing with adults with, or at risk of, CKD and offer testing at the agreed frequency. They should then agree any appropriate treatment as a result of testing.

Commissioners (clinical commissioning groups and NHS England) ensure that they commission services in which adults with, or at risk of, CKD are offered eGFRcreatinine and ACR testing at an agreed frequency.

Adults who have, or may be at risk of, CKD discuss and agree how often their blood and urine should be checked to find out if their CKD is worsening (progressing), or if they have kidney problems. They are offered blood and urine tests at the agreed frequency to check how well their kidneys are working. The blood test should be at least once a year for adults who have CKD.

Source guidance

Chronic kidney disease in adults: assessment and management (2014) NICE guideline CG182, recommendations 1.1.28 (key priority for implementation), 1.3.1 and 1.3.2 (key priority for implementation).

Definitions of terms used in this quality statement

Adults with CKD

CKD is 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 (GFR) of less than 60 ml/min/1.73 m^2 on at least 2 occasions separated by a period of at least 90 days (with or without markers of kidney damage). [NICE's guideline on chronic kidney disease in adults]

Adults at risk of CKD

Offer testing for CKD to adults with any of the following risk factors:

- diabetes
- hypertension
- acute kidney injury

- cardiovascular disease (ischaemic heart disease, chronic heart failure, peripheral vascular disease or cerebral vascular disease)
- structural renal tract disease, recurrent renal calculi or prostatic hypertrophy
- multisystem diseases with potential kidney involvement – for example, systemic lupus erythematosus
- family history of end-stage kidney disease (GFR category G5) or hereditary kidney disease
- opportunistic detection of haematuria.

[NICE's guideline on chronic kidney disease in adults, recommendation 1.2.28]

eGFRcreatinine testing

A blood test that estimates glomerular filtration rate (GFR) by measuring serum creatinine. It is used as an estimate of kidney function to identify kidney disease and monitor CKD progression. Clinical laboratories should use the Chronic Kidney Disease Epidemiology Collaboration (CKD‑EPI) creatinine equation to estimate GFRcreatinine, using creatinine assays with calibration traceable to standardised reference material. [Adapted from NICE's guideline on chronic kidney disease in adults, recommendation 1.1.2]

Albumin:creatinine ratio (ACR) testing

A test used to detect and identify protein in the urine, which is a sign of kidney disease, and can be used to assess progression of CKD. [Adapted from NICE's guideline on chronic kidney disease in adults, recommendation 1.1.18 and full guideline]

At an agreed frequency

The frequency of monitoring should be discussed and agreed with the patient. Table 2 in NICE's guideline on chronic kidney disease in adults should be used to guide the frequency of GFR monitoring. It is determined by the stability of kidney function and the ACR level, and tailored to the individual according to:

- the underlying cause of CKD
- past patterns of eGFR and ACR (but be aware that CKD progression is often non-linear)

- comorbidities, especially heart failure
- changes to their treatment (such as renin–angiotensin–aldosterone system [RAAS] antagonists, NSAIDs and diuretics)
- intercurrent illness
- whether they have chosen conservative management of CKD.

Adults with CKD should be seen at least annually and adults at risk of CKD can be seen less often than annually for monitoring of eGFR. ACR does not need to be measured every time eGFR is measured, except when evaluating response to a treatment targeted at reducing proteinuria. [Adapted from NICE's guideline on chronic kidney disease in adults, recommendations 1.3.1 and 1.3.2 and full guideline]

Question for consultation

Is the statement achievable and measurable, or would a narrower and more specific at-risk population be better?

Quality statement 2: Blood pressure control

Quality statement

Adults with chronic kidney disease (CKD) have their blood pressure maintained below the recommended target. **[2011, updated 2017]**

Rationale

People with CKD are at a higher risk of cardiovascular disease (CVD), and high blood pressure contributes to CKD progression. Maintaining blood pressure below a target reduces cardiovascular risks, including mortality, and the likelihood of progression of CKD.

Quality measures

Structure

Evidence of local arrangements to ensure that adults with CKD have their blood pressure maintained below the recommended target.

Data source: Local data collection, for example, local protocols on blood pressure targets.

Process

a) Proportion of adults with CKD without diabetes and with an ACR below 70 mg/mmol who have their systolic blood pressure maintained below 140 mmHg and the diastolic blood pressure below 90 mmHg.

Numerator – the number in the denominator who have their systolic blood pressure maintained below 140 mmHg and their diastolic blood pressure below 90 mmHg.

Denominator – the number of adults with CKD without diabetes and with an ACR below 70 mg/mmol.

Data source: Local data collection. The National CKD Audit reports the percentage of people with coded CKD stages 3 to 5 with blood pressures below the recommended targets. More comprehensive local measurement may include queries

on patient records or reviews of case notes, for example in the context of a local audit.

b) Proportion of adults with CKD and diabetes, and adults with an ACR of 70 mg/mmol or more, who have their systolic blood pressure maintained below 130 mmHg and their diastolic blood pressure below 80 mmHg.

Numerator – the number in the denominator who have their systolic blood pressure maintained below 130 mmHg and their diastolic blood pressure below 80 mmHg.

Denominator – the number of adults with CKD and diabetes, and adults with an ACR of 70 mg/mmol or more.

Data source: Local data collection. The National CKD Audit reports the percentage of people with coded CKD stages 3 to 5 with blood pressures below the recommended targets. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

Outcomes

a) Prevalence of cardiovascular disease among people with CKD.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

b) Incidence of cardiovascular events for people with CKD.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

c) Cardiovascular mortality rates among people with CKD.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

d) Incidence of end stage kidney disease.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

What the quality statement means for different audiences

Service providers (general practices and secondary care services) ensure that systems are in place for adults with CKD to have their blood pressure maintained below the recommended target.

Healthcare professionals (GPs, specialists, nurses and pharmacists) monitor the blood pressure of adults with CKD and are aware of the recommended targets. They support people to keep their blood pressure below the target, for example through initiation or adjustment of treatment, or lifestyle interventions.

Commissioners (clinical commissioning groups and NHS England) ensure that they commission services in which adults with CKD have their blood pressure maintained below the recommended target.

Adults with CKD are supported to keep their blood pressure at a healthy level. If it is too high, their doctor might offer medicine, or change the medicine they are taking, or suggest lifestyle changes, to help to control it.

Source guidance

Chronic kidney disease in adults: assessment and management (2014) NICE guideline CG182 recommendations 1.6.1 and 1.6.2.

Definitions of terms used in this quality statement

Adults with CKD

CKD is 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 (GFR) of less than 60 ml/min/1.73 m^2 on at least 2 occasions separated by a period of at least 90 days (with or without markers of kidney damage). [NICE's guideline on chronic kidney disease in adults]

Maintained below the recommended target

Blood pressure should be monitored and maintained within the following ranges:

- In people with CKD aim to keep the systolic blood pressure below 140 mmHg (target range 120–139 mmHg) and the diastolic blood pressure below 90 mmHg
- In people with CKD and diabetes, and also in people with an ACR of 70 mg/mmol or more, aim to keep the systolic blood pressure below 130 mmHg (target range 120–129 mmHg) and the diastolic blood pressure below 80 mmHg.

Blood pressure can be maintained through initiation or adjustment of treatment, or through lifestyle interventions.

[Adapted from NICE's guideline on chronic kidney disease in adults, recommendations 1.6.1 and 1.6.2]

Quality statement 3: Statins for people with CKD

Quality statement

Adults with chronic kidney disease (CKD) are offered atorvastatin 20 mg. **[new 2017]**

Rationale

There is a higher risk of cardiovascular disease (CVD) in people with CKD. Statins are a clinically effective treatment for preventing CVD, and reducing the risks associated with CVD, for people who have CKD.

Quality measures

Structure

Evidence of local arrangements to ensure that adults with CKD are offered atorvastatin 20 mg.

Data source: Local data collection, for example, service specifications.

Process

Proportion of adults with CKD who receive atorvastatin 20 mg.

Numerator – the number of adults with CKD who receive atorvastatin 20 mg.

Denominator – the number of adults with CKD.

Data source: Local data collection. The National CKD Audit reports the percentage of people with coded CKD stages 3 to 5 who are on a statin. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

Outcomes

a) Prevalence of cardiovascular disease among people with CKD.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

b) Incidence of cardiovascular events for people with CKD.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

c) Cardiovascular mortality rates among people with CKD.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

d) Proportion of people with CKD with a greater than 40% reduction in non-high-density lipoprotein cholesterol.

Data source: Local data collection. More comprehensive local measurement may include queries on patient records or reviews of case notes, for example in the context of a local audit.

What the quality statement means for different audiences

Service providers (general practices and secondary care services) ensure that systems are in place for adults with CKD to be offered atorvastatin 20 mg.

Healthcare professionals (GPs, specialists, nurses and pharmacists) offer adults with CKD atorvastatin 20 mg and increase the dose if an adequate response to treatment is not achieved and eGFR is 30 ml/min/1.73 m^2 or more.

Commissioners (clinical commissioning groups and NHS England) ensure that they commission services in which adults with CKD are offered atorvastatin 20 mg.

Adults with CKD are at a higher risk of heart attacks and strokes. To help reduce this risk they are offered a type of medicine called a statin, which lowers the level of cholesterol (sometimes called lipids) in the blood. If their cholesterol level does not decrease enough, they may change to a higher dose.

Source guidance

- Chronic kidney disease in adults: assessment and management (2014) NICE guideline CG182 recommendation 1.6.15
- Cardiovascular disease: risk assessment and reduction, including lipid modification (2014) NICE guideline CG181 recommendation 1.3.27

Definitions of terms used in this quality statement

Adults with CKD

CKD is 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 (GFR) of less than 60 ml/min/1.73 m^2 on at least 2 occasions separated by a period of at least 90 days (with or without markers of kidney damage). [NICE's guideline on chronic kidney disease in adults]

Update information

In 2017 this quality standard was updated and statements prioritised in 2011 were replaced.

Statements are marked as **[new 2017]** or **[2011, updated 2017]**:

- **[new 2017]** if the statement covers a new area for quality improvement
- **[2011, updated 2017]** if the statement covers an area for quality improvement included in the 2011 quality standard and has been updated.

Statements numbered 1 and 5 in the 2011 version have been updated and are included in the updated quality standard, marked as **[2011, updated 2017]**.

The statements below from the 2011 version (numbered 2, 3, 4, 6, 7, 8, 9 and 10) are no longer considered national priorities for improvement but may still be useful at a local level:

- People with CKD who may benefit from specialist care are referred for specialist assessment in accordance with NICE guidance.
- People with CKD have a current agreed care plan appropriate to the stage and rate of progression of CKD.
- People with CKD are assessed for cardiovascular risk.
- People with CKD are assessed for disease progression.
- People with CKD who become acutely unwell have their medication reviewed, and receive an assessment of volume status and renal function.
- People with anaemia of CKD have access to and receive anaemia treatment in accordance with NICE guidance.
- People with progressive CKD whose eGFR is less than 20 ml/min/1.73 m^2, and/or who are likely to progress to established kidney failure within 12 months, receive unbiased personalised information on established kidney failure and renal replacement therapy options.
- People with established renal failure have access to psychosocial support (which may include support with personal, family, financial, employment and/or social needs) appropriate to their circumstances.

About this quality standard

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. NICE quality standards draw on existing NICE or NICE-accredited guidance that provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement.

Information about how NICE quality standards are developed is available from the NICE website.

See quality standard advisory committees on the website for details of standing committee 4 members who advised on this quality standard. Information about the topic experts invited to join the standing members is available on the quality standard's webpage.

This quality standard has been incorporated into the NICE pathway on chronic kidney disease.

NICE has produced a quality standard service improvement template to help providers make an initial assessment of their service compared with a selection of quality statements. This tool is updated monthly to include new quality standards.

NICE produces guidance, standards and information on commissioning and providing high-quality healthcare, social care, and public health services. We have agreements to provide certain NICE services to Wales, Scotland and Northern Ireland. Decisions on how NICE guidance and other products apply in those countries are made by ministers in the Welsh government, Scottish government, and Northern Ireland Executive. NICE guidance or other products may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

Improving outcomes

This quality standard is expected to contribute to improvements in the following outcomes:

- proportion of people feeling supported to manage their condition

- health-related quality of life for people with long-term conditions
- CKD progression
- cardiovascular mortality
- all-cause mortality.

It is also expected to support delivery of the Department of Health's outcome frameworks:

- NHS outcomes framework 2016–17
- Public health outcomes framework for England, 2016–19.

Resource impact

NICE quality standards should be achievable by local services. The potential resource impact is considered by the quality standards advisory committee, drawing on resource impact work for the source guidance. Organisations are encouraged to use the resource impact products for the source guidance to help estimate local costs:

- costing statement for the NICE guideline on chronic kidney disease
- costing report and template for the NICE guideline on cardiovascular disease.

Diversity, equality and language

During the development of this quality standard, equality issues were considered and equality assessments are available. Any specific issues identified during development of the quality statements are highlighted in each statement.

Commissioners and providers should aim to achieve the quality standard 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 quality standard should be interpreted in a way that would be inconsistent with compliance with those duties.