NICE National Institute for Health and Care Excellence

NICE quality standard

Type 2 diabetes in adults

Quality standard

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This standard replaces QS6.

This standard is based on NG19, CG181, PH38, NG28, NG136, NG203 and NG209.

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In 2023 this quality standard was updated, and statements prioritised in 2011 and 2016 were updated **[2011, updated 2023]** or **[2016, updated 2023]** or replaced **[new 2023]**. For more information, see update information.

The previous version of the quality standard for diabetes in adults is available as a pdf.

Quality statement 1: Preventing type 2 diabetes

Quality statement

Adults at high risk of type 2 diabetes are offered a referral to the NHS Diabetes Prevention Programme. **[2016, updated 2023]**

Rationale

Many cases of type 2 diabetes can be delayed or prevented through changes to a person's diet and physical activity. Evidence-based intensive lifestyle-change programmes, such as the NHS Diabetes Prevention Programme, can significantly reduce the risk of developing the condition for those at high risk. Adults should be referred to the NHS Diabetes Prevention Programme in a timely manner following identification that they are at high risk of developing type 2 diabetes, recognising that they may be more open to change at this time.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured and can be adapted and used flexibly. Services may want to use these measures to focus on dimensions of health inequality, for example by reporting data grouped by age, ethnicity or indices of deprivation.

Process

a) Proportion of adults at high risk of type 2 diabetes who are offered a referral to the NHS Diabetes Prevention Programme.

Numerator – the number in the denominator who are offered a referral to the NHS Diabetes Prevention Programme.

Denominator – the number of adults at high risk of type 2 diabetes.

Data source: The National Diabetes Audit diabetes prevention programme non-diabetic hyperglycaemia report collects and reports data on the number of people registered in GP practices in England who had a glycaemic test result in the non-diabetic hyperglycaemia range within the last 12 months who were offered a referral to the NHS Diabetes Prevention Programme.

b) Proportion of adults at high risk of type 2 diabetes who complete the NHS Diabetes Prevention Programme.

Numerator – the number in the denominator who complete the NHS Diabetes Prevention Programme.

Denominator – the number of adults at high risk of type 2 diabetes referred to the NHS Diabetes Prevention Programme.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by provider organisations, for example from patient records.

Outcome

a) Weight loss of participants in the NHS Diabetes Prevention Programme.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by provider organisations, for example, body mass index (BMI) recorded in patient records at referral and completion of the programme.

b) Reduction in HbA1c of participants in the NHS Diabetes Prevention Programme.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by provider organisations, for example HbA1c recorded in patient records at referral and completion of the programme.

What the quality statement means for different

audiences

Service providers (such as local authorities who provide the NHS Health Check programme) ensure that systems are in place for adults at high risk of type 2 diabetes to be offered a referral to the NHS Diabetes Prevention Programme.

Health and public health professionals (such as GPs, pharmacists and people carrying out diabetes risk assessments and other health checks) ensure that they offer a referral to the NHS Diabetes Prevention Programme to adults at high risk of type 2 diabetes. They should ensure adults with type 2 diabetes are given clear information on the NHS Diabetes Prevention Programme and help to access it. Health and public health professionals should recognise when offering a behaviour change intervention may not be appropriate due to personal circumstances.

Integrated care systems ensure that they identify adults at high risk of developing type 2 diabetes and refer them to the NHS Diabetes Prevention Programme.

Adults who have been told they are at high risk of getting type 2 diabetes are offered a programme that will help them change their lifestyle to reduce their risk. This includes support to become more physically active and improve their diet. They receive clear information on the programme and are helped to access it.

Source guidance

Type 2 diabetes: prevention in people at high risk. NICE guideline PH38 (2012, updated 2017), recommendation 1.5.4

Definitions of terms used in this quality statement

High risk of type 2 diabetes

Fasting plasma glucose or HbA1c tests should be offered to adults with high-risk scores from a validated computer-based risk-assessment tool or a validated self-assessment questionnaire. A blood test should also be considered for those aged 25 and over of South Asian or Chinese family background whose BMI is greater than 23 kg/m^2. A fasting plasma glucose level of 5.5 mmol/litre to 6.9 mmol/litre or an HbA1c level of 42 mmol/mol to 47 mmol/mol (6.0% to 6.4%) indicates that a person is at high risk of type 2 diabetes (non-

diabetic hyperglycaemia). [Adapted from NICE's guideline on type 2 diabetes: prevention in people at high risk, recommendations 1.3.1 and 1.4.1 and the National Diabetes Audit's Diabetes Prevention Programme non-diabetic hyperglycaemia report]

Equality and diversity considerations

Adults at high risk of type 2 diabetes should be given information that they can easily read and understand themselves, or with support, so they can communicate effectively with health and care services. Information should be in a format that suits their needs and preferences. It should be accessible to adults who do not speak or read English, and it should be culturally appropriate and age appropriate. Adults should have access to an interpreter or advocate if needed.

For adults with additional needs related to a disability, impairment or sensory loss, information should be provided as set out in NHS England's Accessible Information Standard or the equivalent standards for the devolved nations.

Programmes should be tailored to meet the needs of adults with a high risk of developing type 2 diabetes and particularly groups such as older people, adults of different socioeconomic status, adults from minority ethnic family backgrounds, vulnerable or socially disadvantaged adults and disabled adults, including those with a hearing impairment, a visual impairment or a learning disability. Provision should also be made for adults who may have difficulty accessing services in conventional healthcare venues. Programmes should take into account the local social and cultural contexts.

Quality statement 2: Structured education programme

Quality statement

Adults with type 2 diabetes are offered a structured education programme at diagnosis. **[2011, updated 2023]**

Rationale

Type 2 diabetes is a progressive long-term medical condition that the person predominantly self-manages. Managing type 2 diabetes involves lifestyle changes, and treatment can be complex. Structured education programmes can help adults with type 2 diabetes to improve their knowledge and skills and increase patient activation to self-manage effectively. Structured education should also be offered to family members and carers of adults with type 2 diabetes, if appropriate. Structured education programmes should be offered in a timely manner following diagnosis, recognising that adults may be more open to change at this time, and key messages reinforced periodically.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly. Services may want to use these measures to focus on dimensions of health inequality, for example by reporting data grouped by age, ethnicity or indices of deprivation.

Process

a) Proportion of adults with type 2 diabetes who are offered a structured education programme at diagnosis.

Numerator – the number in the denominator who are offered a structured education programme at diagnosis.

Denominator – the number of adults with a new diagnosis of type 2 diabetes.

Data source: The National Diabetes Audit's care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who have been offered structured education within 1 and 2 years of diagnosis and with no time limit from diagnosis. NHS Digital's Quality and Outcomes Framework indicator DM014 reports data on the percentage of patients newly diagnosed with diabetes who have a record of being referred to a structured education programme within 9 months of entry on to the diabetes register.

b) Proportion of adults with a new diagnosis of type 2 diabetes who attend a structured education programme.

Numerator – the number in the denominator who attend a structured education programme.

Denominator – the number of adults with a new diagnosis of type 2 diabetes.

Data source: The National Diabetes Audit care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who have attended structured education within 1 and 2 years of diagnosis.

c) Proportion of adults with a new diagnosis of type 2 diabetes who complete a structured education programme.

Numerator – the number in the denominator who complete a structured education programme.

Denominator – the number of adults with type 2 diabetes who attend a structured education programme.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example, from patient records.

Outcome

Patient confidence to self-manage their type 2 diabetes after attending a structured education programme.

Data source: No routinely collected national data for this measure has been identified. Data can be collected locally by healthcare professionals and provider organisations, for example, from patient surveys and confidence scaling.

What the quality statement means for different audiences

Service providers (such as GP practices, community healthcare providers and secondary care providers) ensure that systems are in place for adults with type 2 diabetes to be offered a structured education programme at diagnosis, with key messages reinforced periodically. The services providing the education programme should ensure that it is available in a format suitable for the person, such as in-person or online, and at times suitable for them, including outside standard working hours.

Healthcare professionals (such as GPs, practice nurses, community healthcare providers, dietitians, consultant diabetologists and diabetes specialist nurses) ensure that they offer a structured education programme to adults with type 2 diabetes at diagnosis, with key messages reinforced periodically. They should ensure adults with type 2 diabetes are given clear information on the structured education programme and help to access it. Healthcare professionals ensure they highlight the importance of attending the structured education programme to encourage attendance.

Integrated care systems ensure that structured education programmes of proven benefit are available for adults with type 2 diabetes. They ensure that programmes are made available in a format suitable for the person, such as in-person or online, and at times suitable for them, including outside standard working hours.

Adults with type 2 diabetes are offered a course to help them improve their understanding of type 2 diabetes and how to manage it in their everyday life. The course should be offered at the time of the diagnosis of type 2 diabetes and reviewed periodically. Their family and carers should be able to attend the course, if appropriate.

Source guidance

Type 2 diabetes in adults: management. NICE guideline NG28 (2015, updated 2022), recommendation 1.2.1

Definitions of terms used in this quality statement

Structured education programme

Adults with type 2 diabetes should be offered group education programmes as the preferred option. Any structured education programme for adults with type 2 diabetes should:

- be evidence-based and suit the needs of the person
- have specific aims and learning objectives, and should support the person and their family members and carers to develop attitudes, beliefs, knowledge and skills to self-manage diabetes
- have a structured curriculum that is theory-driven, evidence-based and resource-effective, has supporting materials and is written down
- be quality assured and reviewed by trained, competent, independent assessors who measure it against criteria that ensure consistency
- have outcomes that are audited regularly
- meet the cultural, linguistic, cognitive and literacy needs of people in the local area
- be delivered by trained educators who:
  - understand educational theory appropriate to the age and needs of the person
  - are trained and competent to deliver the principles and content of the programme.

[Adapted from NICE's guideline on type 2 diabetes in adults, recommendations 1.2.2, 1.2.4 and 1.2.5]

Equality and diversity considerations

Structured education programmes should meet the cultural, linguistic, cognitive and literacy needs in the local area and consider the characteristics of the target population, including socioeconomic status and social context.

Structured education programmes should be adapted to ensure they are accessible to adults with type 2 diabetes and a learning disability, such as accommodating views of those with a learning disability, short sessions and the programme rolled out over longer periods in community settings.

Group education programmes are the preferred option, but an alternative of equal standard should be provided for adults who are unable or prefer not to take part in group education. Adults with type 2 diabetes should be given information that they can easily read and understand themselves, or with support, so they can communicate effectively with educators. Information should be in a format that suits their needs and preferences. It should be accessible to adults who do not speak or read English, and it should be culturally appropriate and age appropriate. Adults should have access to an interpreter or advocate if needed.

For adults with additional needs related to a disability, impairment or sensory loss, information should be provided as set out in NHS England's Accessible Information Standard or the equivalent standards for the devolved nations.

Quality statement 3: Continuous glucose monitoring for adults on multiple daily insulin injections who cannot self-monitor using capillary blood glucose monitoring

Quality statement

Adults with type 2 diabetes who have multiple daily insulin injections and a condition or disability that means they cannot use capillary blood glucose monitoring are offered continuous glucose monitoring (CGM) to support self-monitoring. **[new 2023]**

Rationale

CGM can help to improve glycaemic control in adults with type 2 diabetes who use insulin. It helps to improve glycaemic control by providing sufficient, reliable recordings of glucose against which insulin dose and schedules can be adjusted. The quality statement focuses on the use of CGM by adults with type 2 diabetes who have multiple daily insulin injections and a condition or disability, including a learning disability or cognitive impairment, that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. This will potentially increase their independence when compared with monitoring by finger-prick capillary methods.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly. The quality measures focus on use of CGM by adults with a condition or disability that means they cannot use capillary blood glucose monitoring. The measures aim to reduce health inequalities in this group. Local services may want to identify groups for which there are specific concerns about health inequalities to focus measures on. For example, by reporting data for people with a learning disability

or cognitive impairment, by age or indices of deprivation.

Process

Proportion of adults with type 2 diabetes who have multiple daily insulin injections and a condition or disability that means they cannot self-monitor using capillary blood glucose monitoring who use CGM.

Numerator – the number in the denominator who use CGM.

Denominator – the number of adults with type 2 diabetes who have multiple daily insulin injections and a condition or disability that means they cannot self-monitor using capillary blood glucose monitoring.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records. Adults with a learning disability could be identified by using the learning disability register in general practice.

Outcome

a) HbA1c levels in adults with type 2 diabetes who have multiple daily insulin injections and a condition or disability that means they cannot self-monitor using capillary blood glucose monitoring.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals, for example from patient records.

What the quality statement means for different audiences

Service providers (such as primary care networks, community providers and secondary care services) ensure that services are in place to offer CGM to adults with type 2 diabetes who have multiple daily insulin injections and a condition or disability, including a learning disability or cognitive impairment, that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. They should ensure education is provided

alongside CGM to support adults to use it. They should also address inequalities in CGM access and uptake by monitoring who is using CGM, identifying groups who are eligible but who have a lower uptake and making plans to engage with these groups to encourage them to consider CGM.

Healthcare professionals (such as GPs, diabetes specialist nurses and consultant diabetologists) are aware of CGM availability and offer it to adults with type 2 diabetes who have multiple daily insulin injections and a condition or disability, including a learning disability or cognitive impairment, that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring. They also provide education to support them to use the CGM device and review their use of CGM as part of their diabetes care plan. In addition, they should help to address inequalities in CGM access and uptake by monitoring who is using CGM, identifying groups who are eligible but who have a lower uptake and making plans to engage with these groups to encourage them to consider CGM.

Integrated care systems ensure that services address inequalities in CGM access and uptake by monitoring who is using CGM, identifying groups who are eligible but who have a lower uptake and making plans to engage with these groups to encourage them to consider CGM.

Adults with type 2 diabetes on multiple daily insulin injections and with a condition or disability, including a learning disability or cognitive impairment, that means they cannot monitor their blood glucose themselves using a finger-prick are offered a CGM system to help them manage their diabetes and education on how to use it if they can scan it themselves. Their use of CGM is reviewed as part of their diabetes care plan.

Source guidance

Type 2 diabetes in adults: management. NICE guideline NG28 (2015, updated 2022), recommendations 1.6.17 and 1.6.19

Definitions of terms used in this quality statement

Multiple daily insulin injections

Two or more daily insulin injections, which could either be a basal-bolus regimen or more than one daily insulin injection. [NICE's guideline on type 2 diabetes in adults, terms used

in this guideline]

Continuous glucose monitoring

A CGM is a device that measures blood glucose levels and sends the readings to a display device or smartphone. Real-time CGM (rtCGM) and intermittently scanned CGM (isCGM), commonly referred to as 'flash', automatically measure glucose levels through a sensor applied under the skin. This allows patterns of glucose levels to be seen, which can be used to plan insulin treatment. rtCGM can be considered as an alternative to isCGM if it is available for the same or lower cost. [Adapted from NICE's guideline on type 2 diabetes in adults, recommendation 1.6.19, terms used in this guideline and expert opinion]

Equality and diversity considerations

Integrated care systems, providers and healthcare professionals should address inequalities in CGM access and uptake by monitoring who is using it, identifying groups who are eligible but have lower uptake and making plans to engage with these groups and encourage them to consider CGM, for example, older adults (aged 65 and over), adults with frailty and adults with physical, mental health related or learning disabilities. Data suggests that adults with diabetes from lower socioeconomic groups are less likely to access CGM.

Adults with type 2 diabetes who are offered CGM should be given information about using the technology that they can easily read and understand themselves, or with support, so they can communicate effectively with health and social care services. Information should be in a format that suits their needs and preferences. It should be accessible to adults who do not speak or read English, and it should be culturally appropriate and age appropriate. Adults should have access to an interpreter or advocate if needed.

For adults with additional needs related to a disability, impairment or sensory loss, information should be provided as set out in NHS England's Accessible Information Standard or the equivalent standards for the devolved nations.

Quality statement 4: Continuous glucose monitoring for adults who use insulin and need help monitoring their blood glucose

Quality statement

Adults with insulin-treated type 2 diabetes having their blood glucose monitored by a care worker or healthcare professional are offered continuous glucose monitoring (CGM). **[new 2023]**

Rationale

CGM can help to improve glycaemic control in adults with type 2 diabetes who use insulin. It helps to improve glycaemic control by providing sufficient, reliable recordings of glucose against which insulin dose and schedules can be adjusted. The use of CGM by adults with type 2 diabetes who need help to monitor their blood glucose and administer insulin injections will help care workers to record blood glucose levels quickly. For people who have multiple visits per day, blood glucose levels can be recorded at each visit. This can be used to adjust their insulin levels to reduce the risk of hypoglycaemic events between home visits and may also reduce the number of hospital admissions.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly. The quality measures focus on use of CGM by adults who need help from a care worker or healthcare professional to monitor their blood glucose. The measures aim to reduce health inequalities in this group. Local services may want to identify other groups to focus measures on, for example, by reporting data for other groups that need help to monitor their blood glucose, by age or indices of deprivation.

Process

Proportion of adults with insulin-treated type 2 diabetes who need help from a care worker or healthcare professional to monitor their blood glucose who use CGM.

Numerator – the number in the denominator who use CGM.

Denominator – the number of adults with insulin-treated type 2 diabetes who need help from a care worker or healthcare professional to monitor their blood glucose.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

Outcome

HbA1c levels for adults with insulin-treated type 2 diabetes who need help from a care worker or healthcare professional to monitor their blood glucose.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals, for example from patient records.

What the quality statement means for different audiences

Service providers (such as primary care networks, community providers and secondary care services) ensure that systems are in place to offer CGM to adults with insulin-treated type 2 diabetes who need help from a care worker or healthcare professional to monitor their blood glucose. They should ensure education is provided alongside CGM to support adults to use it. They should also address inequalities in CGM access and uptake by monitoring who is using CGM, identifying groups who are eligible but who have a lower uptake and making plans to engage with these groups to encourage them to consider CGM.

Healthcare professionals (such as GPS, diabetes specialist nurses and consultant diabetologists) are aware of CGM availability and offer it to adults with insulin-treated

type 2 diabetes who need help from a care worker or healthcare professional to monitor their blood glucose. They also provide education to support them to use the CGM device and review their use as part of their diabetes care plan. In addition, they should help to address inequalities in CGM access and uptake by monitoring who is using CGM, identifying groups who are eligible but who have a lower uptake and making plans to engage with these groups to encourage them to consider CGM.

Integrated care systems ensure that services offer intermittently scanned CGM (isCGM), or real-time CGM (rtCGM) if it is available for the same or lower cost as isCGM, to adults with insulin-treated type 2 diabetes who would need help from a care worker or healthcare professional to monitor their blood glucose. They should also address inequalities in CGM access and uptake by commissioning services that monitor who is using CGM, identify groups who are eligible but who have a lower uptake and make plans to engage with these groups to encourage them to consider CGM.

Adults with insulin-treated type 2 diabetes who would need help to monitor their blood glucose are offered a CGM device to help them manage their diabetes. They and their care workers or healthcare professionals also receive education on how to use it. Their use of CGM is reviewed as part of their diabetes care plan.

Source guidance

Type 2 diabetes in adults: management. NICE guideline NG28 (2015, updated 2022), recommendations 1.6.18 and 1.6.19

Definitions of terms used in this quality statement

Continuous glucose monitoring

A CGM is a device that measures blood glucose levels and sends the readings to a display device or smartphone. rtCGM and isCGM, commonly referred to as 'flash', automatically measure glucose levels through a sensor applied under the skin. This allows patterns of glucose levels to be seen, which can be used to plan insulin treatment. rtCGM can be considered as an alternative to isCGM if it is available for the same or lower cost. [Adapted from NICE's guideline on type 2 diabetes in adults, recommendation 1.6.19, terms used in this guideline and expert opinion]

Equality and diversity considerations

Integrated care systems, providers and healthcare professionals should address inequalities in CGM access and uptake by monitoring who is using it, identifying groups who are eligible but have lower uptake and making plans to engage with these groups and encourage them to consider CGM, for example, older adults (aged 65 and over), adults with frailty and adults with physical, mental health related or learning disabilities. Data suggests that adults with diabetes from lower socioeconomic groups are less likely to access CGM.

Adults with type 2 diabetes who are offered CGM should be given information about using the technology that they can easily read and understand themselves, or with support, so they can communicate effectively with health and social care services. Information should be in a format that suits their needs and preferences. It should be accessible to adults who do not speak or read English, and it should be culturally appropriate and age appropriate. Adults should have access to an interpreter or advocate if needed.

For adults with additional needs related to a disability, impairment or sensory loss, information should be provided as set out in NHS England's Accessible Information Standard or the equivalent standards for the devolved nations.

Quality statement 5: Treatment with an SGLT2 inhibitor

Quality statement

Adults with type 2 diabetes are offered an SGLT2 inhibitor if they would benefit because of co-existing chronic heart failure, cardiovascular disease or chronic kidney disease (CKD). **[new 2023]**

Rationale

SGLT2 inhibitors improve cardiovascular outcomes in adults with type 2 diabetes and chronic heart failure or established atherosclerotic cardiovascular disease. They also reduce the risk of CKD progression and mortality, as well as the risk of cardiovascular events in adults with type 2 diabetes and CKD. SGLT2 inhibitors should be offered in line with NICE guidance, in accordance with criteria in their marketing authorisation, including estimated glomerular filtration rate (eGFR) thresholds, to adults with type 2 diabetes and CKD who are taking an ARB or an ACE inhibitor and who have a urine albumin-to-creatinine ratio (ACR) over 30 mg/mmol.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Process

a) Proportion of adults with type 2 diabetes and chronic heart failure or established atherosclerotic cardiovascular disease prescribed an SGLT2 inhibitor.

Numerator – the number in the denominator who are prescribed an SGLT2 inhibitor.

Denominator – the number of adults with type 2 diabetes and chronic heart failure or

established atherosclerotic cardiovascular disease.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

b) Proportion of adults with type 2 diabetes and CKD who are taking an ARB or an ACE inhibitor and have an ACR over 30 mg/mmol prescribed an SGLT2 inhibitor.

Numerator – the number in the denominator who are prescribed an SGLT2 inhibitor.

Denominator – the number of adults with type 2 diabetes and CKD who are taking an ARB or an ACE inhibitor and have an ACR over 30 mg/mmol.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

Outcome

Prevalence of cardiovascular complications in adults with type 2 diabetes.

Data source: The National Diabetes Audit's report on complications and mortality includes data on the number of people with type 2 diabetes who are admitted to hospital with cardiovascular complications (angina, myocardial infarction, heart failure and stroke).

What the quality statement means for different audiences

Service providers (such as GP practices and secondary care providers) ensure that SLGT2 inhibitors are included in formularies for prescribing to adults with type 2 diabetes and chronic heart failure, established atherosclerotic cardiovascular disease or CKD.

Healthcare professionals (such as GPs, consultant diabetologists, advanced nurse practitioners, diabetes specialist nurses and pharmacists) offer an SGLT2 inhibitor as a first-line treatment to adults with type 2 diabetes and chronic heart failure or established atherosclerotic cardiovascular disease and to adults with type 2 diabetes and CKD. They

should address modifiable risk factors for diabetic ketoacidosis (DKA) before starting an SGLT2 inhibitor. They should also advise adults with type 2 diabetes who are taking an SGLT2 inhibitor about minimising the risk of DKA when there is intercurrent illness and not to start a very low carbohydrate or ketogenic diet.

Integrated care systems ensure that services can offer SGLT2 inhibitors to adults with type 2 diabetes and chronic heart failure or established atherosclerotic cardiovascular disease or CKD.

Adults with type 2 diabetes and heart failure, cardiovascular disease or CKD with severely increased protein in their urine are offered an SGLT2 inhibitor along with their other medication to help reduce the risk of developing complications from their diabetes.

Source guidance

Type 2 diabetes in adults: management. NICE guideline NG28 (2015, updated 2022), recommendations 1.7.5, 1.7.9, 1.7.16 and 1.8.17

Definitions of terms used in this quality statement

Established atherosclerotic cardiovascular disease

This includes:

- coronary heart disease
- acute coronary syndrome
- previous myocardial infarction
- stable angina
- previous coronary or other revascularisation
- cerebrovascular disease (ischaemic stroke and transient ischaemic attack)
- peripheral arterial disease.

[NICE's guideline on type 2 diabetes in adults, terms used in this guideline]

SGLT2 inhibitor

Adults with type 2 diabetes and chronic heart failure or established atherosclerotic cardiovascular disease should be offered an SGLT2 inhibitor with proven cardiovascular benefit.

It should be offered:

- in addition to metformin as a first-line treatment for type 2 diabetes or
- for first-line treatment if metformin is contraindicated or not tolerated or
- at any stage after they have started first-line treatment if they have or develop chronic heart failure or established atherosclerotic cardiovascular disease, taking into account their current treatment regimen and preferences.

Adults with type 2 diabetes and CKD should be offered an SGLT2 inhibitor licensed for use in CKD, if:

- they are taking the highest tolerated licensed dose of an ARB or ACE inhibitor
- they have an ACR over 30 mg/mmol and
- they meet the criteria in the marketing authorisation for the SGLT2 inhibitor (including relevant eGFR thresholds).

In November 2021, not all SGLT2 inhibitors were licensed for this indication. See NICE's information on prescribing medicines. [Adapted from NICE's guideline on type 2 diabetes in adults, recommendations 1.7.5, 1.7.9, 1.7.16 and 1.8.17]

Quality statement 6: 9 key care processes

Quality statement

Adults with type 2 diabetes have 9 key care processes completed every 12 months. **[new 2023]**

Rationale

Regular testing and completion of the 9 key care processes to monitor and manage type 2 diabetes can help to reduce the risk of complications and identify any complications earlier.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly. Services may want to use these measures to focus on dimensions of health inequality, for example by reporting data grouped by age, ethnicity or indices of deprivation.

Process

a) Proportion of adults with type 2 diabetes who had a urine albumin-to-creatinine ratio (ACR) test in the previous 12 months.

Numerator – the number in the denominator who had a urine ACR test in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit's care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had a urine albumin test in the audit year.

b) Proportion of adults with type 2 diabetes who had an HbA1c test in the previous 12 months.

Numerator – the number in the denominator who had an HbA1c test in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit's care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had an HbA1c test in the audit year.

c) Proportion of adults with type 2 diabetes who had their blood pressure measured in the previous 12 months.

Numerator – the number in the denominator who had their blood pressure measured in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit's care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had their blood pressure measured in the audit year.

d) Proportion of adults with type 2 diabetes who had foot surveillance and risk classification recorded in the previous 12 months.

Numerator – the number in the denominator who had foot surveillance and risk classification recorded in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had foot surveillance in the audit year. NHS Digital's Quality and Outcomes Framework indicator DM012 reports data on the percentage of patients with diabetes who have a record of a foot examination and risk classification in the preceding 12 months.

e) Proportion of adults with type 2 diabetes who had a serum creatinine test in the previous 12 months.

Numerator – the number in the denominator who had a serum creatinine test in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had a serum creatinine test in the audit year.

f) Proportion of adults with type 2 diabetes who had a serum cholesterol test in the previous 12 months.

Numerator – the number in the denominator who had a serum cholesterol test in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had a serum cholesterol test in the audit year.

g) Proportion of adults with type 2 diabetes who had a record of their body mass index (BMI) in the previous 12 months.

Numerator – the number in the denominator who had a record of their BMI in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had a record of their BMI in the audit year.

h) Proportion of adults with type 2 diabetes who had their smoking status recorded in the previous 12 months.

Numerator – the number in the denominator who had their smoking status recorded in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had a record of their smoking status in the audit year.

i) Proportion of adults with type 2 diabetes who had retinal screening in the previous 12 months.

Numerator – the number in the denominator who had retinal screening in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who had a record of retinal screening in the audit year for England. Data for Wales can be collected locally.

j) Proportion of adults with type 2 diabetes who had 9 key care processes performed in the previous 12 months.

Numerator – the number in the denominator who had 9 key care processes in the previous 12 months.

Denominator – the number of adults with type 2 diabetes.

Data source: The National Diabetes Audit care processes and treatment targets report collects and reports data on the number of adults with type 2 and other types of diabetes (excluding type 1 diabetes) who received all 9 care processes in the audit year for England (8 care processes for Wales).

Outcome

Prevalence of cardiovascular complications, renal replacement therapy (end-stage kidney

disease) or minor or major amputations in adults with type 2 diabetes.

Data source: The National Diabetes Audit report on complications and mortality includes data on the number of people with type 2 diabetes admitted to hospital with cardiovascular complications, renal replacement therapy (end-stage kidney disease) and minor or major amputations.

What the quality statement means for different audiences

Service providers (such as primary care services, secondary care services, diabetic eye screening providers, community health services and foot protection services) ensure that systems are in place for adults with type 2 diabetes to have 9 key care processes completed every 12 months to identify and monitor complications of type 2 diabetes.

Healthcare professionals (such as GPs, and practice nurses) are aware of local protocols for key care processes associated with type 2 diabetes and ensure that adults with type 2 diabetes have 9 key care processes completed every 12 months, including measurement of urine ACR, HbA1c, blood pressure, serum creatinine, serum cholesterol and BMI, foot surveillance and smoking status. They refer adults to the local eye screening service when they are diagnosed with type 2 diabetes. They refer adults who are at moderate or high risk of developing a foot problem to the foot protection service and adults with an active diabetic foot problem to the multidisciplinary foot care service or foot protection service. They refer adults with a limb- or life-threatening active diabetic foot problem to acute services for assessment by the multidisciplinary foot care service.

Integrated care systems ensure that services are available in which adults with type 2 diabetes have 9 key care processes completed every 12 months, to identify and monitor complications of type 2 diabetes. This includes laboratory provision for testing blood and urine tests, and access to a foot protection service, multidisciplinary foot care service and eye screening service.

Adults with type 2 diabetes have regular tests to check if they are at risk of developing, or have, complications of type 2 diabetes. They are referred to an appropriate service if any complications are identified.

Source guidance

- Tobacco: preventing uptake, promoting quitting and treating dependence. NICE guideline NG209 (2021, updated 2023), recommendation 1.11.1
- Type 2 diabetes in adults: management. NICE guideline NG28 (2015, updated 2022), recommendations 1.6.1 and 1.8.25
- Hypertension in adults: diagnosis and management. NICE guideline NG136 (2019, updated 2022), recommendation 1.2.11
- Chronic kidney disease: assessment and management. NICE guideline NG203 (2021), recommendations 1.1.21, 1.3.1 and 1.3.4
- Diabetic foot problems: prevention and management. NICE guideline NG19 (2015, updated 2019), recommendation 1.3.3
- Cardiovascular disease: risk assessment and reduction, including lipid modification. NICE guideline CG181 (2014, updated 2023), recommendation 1.1.10

The 12-month timeframe for recording of ACR, serum creatinine, serum cholesterol, BMI, smoking status and retinal screening is based on expert opinion and not derived from NICE guidance. It is considered a practical timeframe to enable stakeholders to measure performance. The timeframe is used in the National Diabetes Audit and the NHS diabetic eye screening programme.

Definitions of terms used in this quality statement

Key care processes

The care processes are:

- urine ACR measurement
- HbA1c measurement
- blood pressure measurement
- foot surveillance

- serum creatinine measurement
- serum cholesterol measurement
- BMI measurement
- smoking status
- retinal screening.

[National Diabetes Audit]

Equality and diversity considerations

Appointments for completion of key care processes should be offered at times, and in locations, that meet the needs of adults with type 2 diabetes. Appointments should be accessible to adults who do not speak or read English, and should be culturally appropriate and age appropriate. Adults should have access to an interpreter or advocate if needed.

For adults with additional needs related to a disability, impairment or sensory loss, information should be provided as set out in NHS England's Accessible Information Standard or the equivalent standards for the devolved nations.

Quality statement 7: Assessing the risk of diabetic foot problems on admission to hospital

Quality statement

Adults with type 2 diabetes admitted to hospital have an assessment of their risk of developing a diabetic foot problem. **[new 2023]**

Rationale

Assessing the risk of developing a diabetic foot problem and timely care during a hospital admission for any reason, by skilled healthcare professionals such as members of the foot care service, decreases the probability of developing diabetic foot problems for adults with type 2 diabetes.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Structure

a) Evidence of local systems to identify all adults with type 2 diabetes when they are admitted to hospital.

Data source: The National Diabetes Audit's inpatient safety audit includes data on the number of providers that have a robust system to identify all people with diabetes on admission to hospital.

b) Evidence of local arrangements to ensure that foot assessments for adults with type 2 diabetes are performed by appropriately trained healthcare professionals.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from training records, competency assessment and records of continuous professional development.

Process

Proportion of adults with type 2 diabetes admitted to hospital who have an assessment of their risk of developing a diabetic foot problem.

Numerator – the number in the denominator who have an assessment of their risk of developing a diabetic foot problem.

Denominator – the number of adults with type 2 diabetes admitted to hospital.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

Outcome

a) Incidence of diabetic foot ulcer identified on hospital admission in adults with type 2 diabetes.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

b) Rate of diabetic foot ulcer in adults with type 2 diabetes during a hospital admission.

Data source: The National Diabetes Audit's inpatient safety audit includes data on the number, frequency and rate per 100,000 bed days of inpatient harms, including diabetic foot ulcer.

What the quality statement means for different audiences

Service providers (secondary care services) ensure that a foot care service is available within hospitals to provide foot assessments to adults with type 2 diabetes when they are admitted to hospital. They ensure that a multidisciplinary foot care team is available for management of any high-risk and active foot problems that are identified.

Healthcare professionals (members of the foot care service, nurses, doctors and podiatrists) are trained to provide foot assessments to adults with type 2 diabetes when they are admitted to hospital. They can refer to and work with the multidisciplinary foot protection service if any foot problems are identified on assessment.

Integrated care systems ensure that multidisciplinary foot care services and foot protection services are available to provide management of foot problems including high-risk and active foot problems identified from foot assessments for adults with type 2 diabetes when they are admitted to hospital.

Adults with type 2 diabetes who are admitted to hospital have a check of their feet for any problems that may be related to their diabetes.

Source guidance

Diabetic foot problems: prevention and management. NICE guideline NG19 (2015, updated 2019), recommendation 1.3.3

Definitions of terms used in this quality statement

Assessment of their risk of developing a diabetic foot problem

Adults with type 2 diabetes should remove their shoes, socks, bandages and dressings for the assessment. Their feet should be examined for the following risk factors:

- neuropathy (using a 10 g monofilament as part of a foot sensory examination)
- limb ischaemia (palpation of foot pulses as part of a vascular assessment)

- ulceration
- callus
- infection or inflammation
- deformity
- gangrene
- Charcot arthropathy or an unexplained hot, swollen foot with or without pain
- ankle brachial pressure index.

The risk of developing a diabetic foot problem can be assessed using the following risk stratification:

- Low risk:
  - no risk factors present except callus alone.
- Moderate risk:
  - deformity or
  - neuropathy or
  - peripheral arterial disease.
- High risk
  - previous ulceration or
  - previous amputation or
  - on renal replacement therapy or
  - neuropathy and peripheral arterial disease together or
  - neuropathy in combination with callus, deformity or both
  - peripheral arterial disease in combination with callus, deformity or both.

- Active diabetic foot problem:
  - ulceration or
  - infection or
  - chronic limb-threatening ischaemia or
  - gangrene or
  - suspicion of an acute Charcot arthropathy, or an unexplained hot, swollen foot with a change in colour, with or without pain.

[Adapted from NICE's guideline on diabetic foot problems, recommendations 1.3.4 to 1.3.6 and expert opinion]

Update information

March 2023: This quality standard was updated, and statements prioritised in 2011 and 2016 were replaced. The topic was identified for update following a review of quality standards. The review identified:

- changes in the priority areas for improvement
- new and updated guidance on type 2 diabetes in adults
- that the quality standard on diabetes in adults should be split into separate quality standards.

Statements are marked as:

- **[new 2023]** if the statement covers a new area for quality improvement
- **[2011, updated 2023]** or **[2016, updated 2023]** if the statement covers an area for quality improvement included in the 2011 or 2016 quality standard and has been updated.

The previous version of the quality standard for diabetes in adults is available as a pdf.

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.

Expected levels of achievement for quality measures are not specified. Quality standards are intended to drive up the quality of care, so achievement levels of 100% should be aspired to (or 0% if the quality statement states that something should not be done). However, this may not always be appropriate in practice. Taking account of safety, shared decision making, choice and professional judgement, desired levels of achievement should be defined locally.

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

See our webpage on quality standards advisory committees for details about our standing committees. Information about the topic experts invited to join the standing members is available from the webpage for this quality standard.

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 guidance and quality standards apply in England and Wales. Decisions on how they apply in Scotland and Northern Ireland are made by the Scottish government and Northern Ireland Executive. NICE quality standards may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

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 reports for NICE's guideline on type 2 diabetes in adults to help estimate local costs.

Diversity, equality and language

Equality issues were considered during development, and equality assessments for this quality standard 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.

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Endorsing organisation

This quality standard has been endorsed by NHS England, as required by the Health and Social Care Act (2012)