NICE National Institute for Health and Care Excellence

Indicator development programme

CVD risk assessment: higher risk groups

Executive summary (September 2023)

Overview

1. This paper outlines potential new general practice level indicators focused on the primary prevention of cardiovascular disease (CVD) through the provision of formal risk assessment for people likely to be at higher risk. Appendix 1 includes draft outline specifications for two possible indicators that use factors included in QRISK3 to derive a denominator.

Background

2. CVD risk assessment tools (such as QRISK3) estimate the risk of future cardiovascular events (heart attack or stroke) to help inform treatment strategies. Data is available from CVD Prevent on the provision of lipid lowering therapy for people assessed as at risk. However, limited data is available on how many patients receive an initial risk assessment.

Potential benefits

3. Understanding the use of CVD risk assessment in people at higher risk could help contribute to the primary prevention of cardiovascular events.

Potential risks

4. Any indicators could overlap with existing responsibilities of the NHS Health Check Programme and the number of patients per practice is likely to be substantial.

Committee decision

5. The committee is asked to provide guidance on the different denominator inclusion criteria outlined in Appendix 1 and whether indicators should progress to consultation and testing. Alternatively, the committee could advise that no indicators are progressed for further development.

Background

6. Various factors increase the risk of developing CVD caused by atherosclerosis (a build-up of fatty deposits inside an artery that cause the artery to harden and narrow, restricting blood flow):

    - Non-modifiable risk factors such as older age and ethnic background.
    - Modifiable risk factors such as smoking and obesity.
    - Comorbidities such as hypertension and dyslipidaemia.

7. NICE's guideline on cardiovascular disease recommends that for primary prevention:

    - A systematic strategy is used to identify people who are likely to be at high risk of CVD.
    - Primary care records are used to estimate CVD risk based on factors recorded in electronic health records.
    - Estimates are reviewed on an ongoing basis for people over 40.
    - Full formal risk assessment using QRISK3 is prioritised for people with an estimated risk of 10% or more.

8. However, the guideline does not specify which people should be treated as “likely to be at high risk” or which factors recorded in electronic health records should be used to estimate risk.

Current NICE indicators

9. There are 4 general practice indicators on the NICE menu focused on risk assessment for primary prevention of CVD:

    - NM56 on annual assessment in people with rheumatoid arthritis.
    - NM120 on annual assessment in people with serious mental illness.
    - NM132 on assessment at diagnosis for people with hypertension or type 2 diabetes.
    - NM160 on 3-yearly assessment in people with type 2 diabetes.

10. Only NM56 was ever included in QOF as RA003 and was retired from QOF in 2014. It remains part of the 'Indicators No Longer in QOF' collection; national achievement for 2021-22 was 19%.

11. There are an additional 5 indicators on the NICE menu (with one in QOF) that use the results of CVD risk assessment to derive the population for provision of lifestyle advice and lipid lowering therapies.

12. Appendix 2 includes the full wording of all these indicators.

Populations for CVD risk assessment

13. The QRISK3 tool is validated for use only in people aged 25 to 84 years without existing coronary heart disease (including angina or heart attack), stroke or transient ischaemic attack.

14. NICE's guideline on cardiovascular disease recommends QRISK3 when undertaking formal risk assessment of people aged 25 to 84 years. People with existing CVD, type 1 diabetes, kidney disease and familial hypercholesterolaemia are excluded as they are already classified as high-risk.

15. The NHS Health Check aims to identify risks and early signs of CVD, diabetes and kidney disease through provision of check-ups every 5 years; CVD risk assessment being one component. It is for people aged 40 to 75 years without CVD or a previous CVD risk of 20% having been identified. People are also excluded if they have a co-existing condition presumed to be managed by other routes: type 1 or type 2 diabetes, chronic kidney disease 3a to 5, hypercholesterolemia, hypertension, atrial fibrillation, heart failure, current statin or 20% risk ever recorded.

16. Definitions of CVD vary but for consistency with existing QOF indicators it is defined in this paper as coronary heart disease (angina, myocardial infarction and revascularisation), peripheral arterial disease, stroke and transient ischaemic attack.

Current practice

17. No routine data collection has been identified that quantifies provision of CVD risk assessment.

18. Data from Fingertips show that uptake of the NHS Health Check programme has been falling since 2016/17 and the England average uptake for 2022/23 was 39%.

19. Patel et al (2023) undertook an evaluation of the NHS Health Check programme between 2014 and 2017 using primary care data. Around 80% of Health Check attendees had a record of CVD risk, with 25% of those having a score of 10% or more. In non-attendees, a CVD risk assessment at any time was on record in 30% of cases. Ethnicity data was missing in a greater proportion of non-attendees and there were few differences in attendance by deprivation indices. No evidence indicated that people with severe mental illness, physical or cognitive disability were under-represented among attendees.

20. Sheppard et al (2014) found that in a cross-sectional study of anonymised patient records from 19 general practices in the UK, 45% of patients aged 40 to 74 years with no existing CVD had a formal record of CVD risk in the preceding 5 years.

21. Lang et al (2016) undertook a cross-sectional study of primary care records from 9 UK general practices and found that the most deprived populations had significantly worse routine CVD risk factor recording necessary to complete CVD risk assessment.

22. A systematic review by Muthee et al (2020) found that factors influencing the implementation of cardiovascular risk scoring (across 21 countries) are related to clinical setting and healthcare system (resources, priorities, practice culture and organisation), users (attributes and interactions between users) and the specific cardiovascular risk tool (characteristics, perceived role and effectiveness).

23. Limited evidence has been found on the potential under use of CVD risk assessment in specific disease cohorts. Emmanuel et al (2016) examined primary care records for one London borough and found clinical recording of CVD risk scores among patients with rheumatoid arthritis or inflammatory bowel disease was 11% and 6% respectively.

Potential indicators

24. Indicators could be developed that focused the denominator on people in whom QRISK is validated and who have a modifiable risk factor or comorbidity that is included in QRISK3. Appendix 1 includes draft outline specifications for two possible indicators:

    - The percentage of people aged 40 to 84 years with a modifiable risk factor included in QRISK3, who have a recorded CVD risk assessment in the preceding 5 years.
    - The percentage of people aged 40 to 84 years with a modifiable risk factor or comorbidity included in QRISK3, who have a recorded CVD risk assessment in the preceding 5 years.

25. However, it is likely that the number of patients per practice would be substantial. For example, QOF data for 2021/22 show that an average practice with 10,000 patients will have 1283 patients on the smoking register and 778 patients on the obesity register (not limited to 40 to 84 years).

26. A frequency of 5 years has been used to align with the schedule for NHS Health Checks, but it should be noted that existing QOF DM022 uses a frequency of 3 years for people with diabetes.

Committee decision

27. The committee is asked to provide guidance on the different denominator inclusion criteria outlined in Appendix 1 and whether indicators should progress to consultation and testing. Alternatively, the committee could advise that no indicators are progressed for further development.

Appendix 1: Potential indicator options

	Option 1	Option 2
Indicator	The percentage of people aged 40 to 84 years with a modifiable risk factor included in QRISK3, who have a recorded CVD risk assessment in the preceding 5 years.	The percentage of people aged 40 to 84 years with a modifiable risk factor or comorbidity included in QRISK3, who have a recorded CVD risk assessment in the preceding 5 years.
Numerator	People in the denominator with a recorded CVD risk assessment in the preceding 5 years.	People in the denominator with a recorded CVD risk assessment in the preceding 5 years.
Denominator	People aged 40 to 84 years with one or more of the following: • Current smoker • Obesity	People aged 40 to 84 years with one or more of the following: • Current smoker • Obesity • Hypercholesterolemia • Hypertension • Type 2 diabetes • Erectile dysfunction • Serious mental illness • Rheumatoid arthritis • Atrial fibrillation
Exclusions	People with: • Type 1 diabetes • CVD • Familial hypercholesterolemia • CKD 3a to 5 • Current lipid lowering therapies • 20% risk ever recorded	People with: • Type 1 diabetes • CVD • Familial hypercholesterolemia • CKD 3a to 5 • Current lipid lowering therapies • 20% risk ever recorded
Notes		Factors not included in the denominator (even though part of QRISK3) because of uncertainties around coding: • Migraine • Lupus • Steroid use • Family history of CVD

Appendix 2: Current NICE indicators

NM56 (QOF INLIQ RA003): The percentage of patients with rheumatoid arthritis aged 30-84 years who have had a cardiovascular risk assessment using a CVD risk assessment tool adjusted for RA in the preceding 15 months.

NM120: The percentage of patients aged between 25 and 84 years with schizophrenia, bipolar affective disorder and other psychoses (excluding those with pre-existing cardiovascular disease, chronic kidney disease, familial hypercholesterolaemia or type 1 diabetes) who have had a full formal cardiovascular disease risk assessment performed in the preceding 12 months.

NM132: The percentage of patients aged between 25 and 84 years with a new diagnosis of hypertension or type 2 diabetes, recorded in the preceding 12 months (excluding those with pre-existing cardiovascular disease, chronic kidney disease, familial hypercholesterolaemia or type 1 diabetes) who have had a consultation for full formal cardiovascular disease risk assessment between 3 months before or 3 months after date of diagnosis.

NM133: In those patients aged between 25 and 84 years, with a new diagnosis of hypertension or type 2 diabetes recorded in the preceding 12 months (excluding those with pre-existing cardiovascular disease, chronic kidney disease, familial hypercholesterolaemia or type 1 diabetes), who have a recorded cardiovascular risk assessment score of more than 20% in the preceding 12 months: the percentage who are currently treated with statins (unless there is a contraindication).

NM160: The percentage of patients aged between 25 and 84 years, with type 2 diabetes, without moderate or severe frailty, not currently treated with a statin, who have had a consultation for a full formal cardiovascular disease risk assessment in the last 3 years.

NM161: The percentage of patients with a diagnosis of type 2 diabetes and a recorded cardiovascular disease risk assessment score of 10% or more

(without moderate or severe frailty), who are currently treated with a statin (unless there is a contraindication or statin therapy is declined).

NM162 (QOF DM022): The percentage of patients with diabetes aged 40 years and over, with no history of cardiovascular disease and without moderate or severe frailty, who are currently treated with a statin (excluding patients with type 2 diabetes and a cardiovascular disease risk score of less than 10% recorded in the preceding 3 years).

NM210: The percentage of patients with a cardiovascular disease risk assessment score of 10% or more identified in the preceding 12 months who are offered advice and support for smoking cessation, safe alcohol consumption, healthy diet and exercise within 3 months of the score being recorded.

NM211: The percentage of patients with a cardiovascular disease risk assessment score of 10% or more who are currently treated with a lipid lowering therapy.

Appendix 3: Reference list

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Patel R, Barnard S, Thompson K, et al (2007) Evaluation of the uptake and delivery of the NHS Health Check programme in England, using primary care data from 9.5 million people: a cross-sectional study. BMJ Open 2020;10:e042963.

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