

Indicator development programme

CPRD testing report

Cardiovascular risk assessment

This paper includes the results from using CPRD data to test the feasibility of the draft indicators on cardiovascular risk assessment.

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Background

At the September 2023 Indicator Advisory Committee, three indicators were proposed for potential use in the QOF that focused on provision of cardiovascular risk assessments. There were concerns about the extent to which the construction of the denominators would result in large numbers of eligible population. [Clinical Practice Research Datalink](#) (CPRD) Aurum was therefore used to test the feasibility of using general practice data to accurately provide the cohorts necessary for the denominators of the three proposed indicators:

- IND2023-164: The percentage of people aged 45 to 84 years who have a recorded CVD risk assessment score in the preceding 5 years.
- IND2023-165: The percentage of people aged 43 to 84 years with a modifiable risk factor or comorbidity who have a recorded CVD risk assessment score in the preceding 3 years.
- IND2023-166: The percentage of people aged 43 to 84 years with a modifiable risk factor who have a recorded CVD risk assessment score in the preceding 3 years.
- If you're including the results in any publication, please include the following text somewhere, alongside the protocol number (
- 24_003834)

The on data from the Clinical Practice Research Datalink obtained under licence from the UK Medicines and Healthcare products Regulatory Agency. The data is provided by patients and collected by the NHS as part of their care and support. The interpretation and conclusions contained in this study are those of the indicators' development team alone.

Methodology

CPRD Aurum data was obtained for all patients aged between 43 to 84 years on the 31st of March 2023. Data was obtained and analysed for parameters relating to the indicators, this included:

- the number of registered patients on 31st March 2023 of the specified age, with the comorbidities or modifiable risk factors and no exclusion criteria.
- The number aged 43/45-84 years with any of the exclusion factors.

Results

Table 1: Data extracted from CPRD – estimated denominator and data for IND2023-164

Population description	No of patients	No. of patients per 10,000	Comparator if available (Data source)
The number of people registered in CPRD on 31 March 2023, all ages	16,825,905		England total population all ages: 57,106,398
The number of people aged 45-84 years registered in CPRD on 31 March 2023	6,258,480 (37% of registered patients)	3,720	ONS Mid population statistics 42% of all age groups
The number aged 45-84 years with any of the following exclusion factors: type 1 diabetes, CVD, familial hypercholesterolaemia, Chronic Kidney Disease (CKD) stage 3 to 5, current Lipid Lowering Therapies (LLT), previous CVD risk of 20% or more (45 to 84 years)	2,260,655 (36% of registered patients aged 45-84 years)	1,344	- 0.6% of people have type 1 diabetes (Health Survey) - 5% CVD prevalence in people 18+ (CVD Prevent, 009CHOL) - 0.01% FH prevalence in all age. (CVDPrevent 003FH) - 4.19% CKD prevalence in people 18+ (QOF 2022/23) - 12% prevalence of LLT provision in people 18+ (CVDPrevent 009CHOL, June 2023).
Eligible population for indicator IND2023-164 (registered population 45 to 84 years excluding people with exclusions)	3,997,825 (64% of patients aged 45-84 years)	2,376	

The number of people with no exclusion, with a recorded CVD risk assessment score (included QRISK, QRISK2, QRISK3, Framingham, JBS) in the preceding 5 years	1,610,255 (40% of eligible population)	957	
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Table 2: Data extracted from CPRD – estimated denominators and data for IND2023-165/166

Population description	No of patients	Number of patients per 10,000	Comparator if available
The number of people aged 43-84 years registered in CPRD on 31 March 2023	6,691,385 (40% of registered patients)	3,977	Data from ONS mid-2022 population estimates 44% of all age groups
The number aged 43-84 years with any of the following exclusion factors: type 1 diabetes, CVD, familial hypercholesterolaemia, CKD stage 3 to 5, current LLT, previous CVD risk of 20% or more.	2,283,460 (34% of patients aged 43-84 years)	1,357	Prevalence – - 0.6% of people have type 1 diabetes (Health Survey) - 5% CVD prevalence in people 18+ (CVD Prevent, 009CHOL) - 0.01% FH prevalence in all age. (CVDPrevent 003FH) - 4.19% CKD prevalence in people 18+ (QOF 2022/23) - 12% prevalence of LLT provision in people 18+ (CVDPrevent 009CHOL, June 2023).
The number aged 43 to 84 years with no exclusions	4,407,925 (66% of patients aged 43-84 years)	2,620	

Population description	No of patients	Number of patients per 10,000	Comparator if available
Indicator IND2023-165 Eligible population The number with no exclusions with any of the following modifiable risk factors or comorbidities: current smoker, obesity, hypertension, hypercholesterolemia, type 2 diabetes, erectile dysfunction, serious mental illness, rheumatoid arthritis, systemic lupus erythematosus or atrial fibrillation	2,219,360 (50% of registered patients with no exclusions)	1,319	Prevalence – - Smoking in England in people 18+: 12.9%, (ONS, 2023) - obesity in England in people 18+: 11.37% (QOF, 2022/23) - Hypertension in England (all ages) 2022/23: 14.4%, (QOF, 2022/23) - raised total cholesterol: 59% (NHS Digital) - doctor diagnosed diabetes – 5.4%,(Health Survey) - Mental Health all ages: 0.95%, (QOF, 22/23) - Rheumatoid Arthritis 16+ yrs: 0.8%, (QOF, 22/23) - unable to identify routinely collected data source, - Atrial fibrillation in England: 2.1% (QOF, 22/23)
The number of people, with no exclusion and a modifiable risk factor or comorbidity, with a recorded CVD risk assessment score in the preceding 3 years	738,495 (33% of eligible population)	439	

Population description	No of patients	Number of patients per 10,000	Comparator if available
Indicator IND2023-166 Eligible population The number with no exclusions with any of the following modifiable risk factors: current smoker, obesity, hypertension or hypercholesterolemia	2,068,895 (47% of registered patients with no exclusions)	1230	Prevalence – - Smoking in England in people 18+: 12.9%, (ONS, 2023) - obesity in England in people 18+: 11.37% (QOF, 2022/23) - Hypertension in England (all ages) 2022/23: 14.4%, (QOF, 2022/23) - raised total cholesterol: 59% (NHS Digital)
The number of people, with no exclusion and a modifiable risk factor, with a recorded CVD risk assessment score in the preceding 3 years	688,180 (33% of eligible population)	409	

Table 3: Data extracted from CPRD – Additional data.

Population description	No of patients	Number of patients per 10000	Comparator if available
Eligible population The number with no exclusions with any of the following comorbidities: type 2 diabetes, erectile dysfunction, serious mental illness, rheumatoid arthritis, systemic lupus erythematosus or atrial fibrillation (43 to 84 years)	404,830 (9% of registered patients with no exclusions)	240	Prevalence: - doctor diagnosed diabetes – 5.4%,(Health Survey) - Mental Health all ages: 0.95%, (QOF, 22/23) - Rheumatoid Arthritis 16+ yrs: 0.8%, (QOF, 22/23)

			- unable to identify routinely collected data source, - Atrial fibrillation in England: 2.5% (OHID, 22/23)
The number of people, with no exclusions and with a comorbidity, with a recorded CVD risk assessment score in the preceding 3 years	166,550 (41% of the eligible population)	99	

Key findings

IND2023-164

- The CPRD Aurum data has a slightly lower proportion of people aged 45 to 84 years (37%) compared to the proportions of the same age groups from the [ONS mid-2022 population estimates \(England\)](#) at 42% respectively. This difference highlights that the CPRD, may show a slight underestimate of eligible patients for all parameters related to the indicator.
- CPRD Aurum data from March 2023 shows that, on average, 24% of the registered population is eligible for IND2023-164, which equates to 2,376 patients for an average practice with 10,000 patients. For context:
 - the average population size for QOF 2022/23 clinical domain indicators is 194 per 10,000 patients (range 25 to 1141).
 - the average population size for QOF 2022/23 public health domain indicators is 1108 per 10,000 patients (range 58 to 4279).
- The CPRD Aurum data indicates for an average practice with 10,000 patients, there are 957 patients who have a CVD risk assessment score in the past 5 years. This equates to performance rates of 40% of the eligible population.

Estimated denominators and data for IND2023-165/166

- The CPRD Aurum data has a slightly lower proportion of people aged 43 to 84 years (40%) compared to the proportions of the same age group from the [ONS mid-2022 population estimates \(England\)](#) at 44%. This difference highlights that the CPRD, may show a slight underestimate of eligible patients for all parameters related to the indicator.

- CPRD Aurum data for March 2023 shows that on average 26% of the registered population aged 43 to 84 years had no exclusion criteria for indicators IND2023-165 and IND2023-166.
- For indicator IND2023-165, the data shows that 50% of registered patients with no exclusions were eligible for inclusion in the denominator, which translates to 1,319 patients in an average practice with 10,000 patients. Results show 33% of people, with no exclusion and a modifiable risk factor or comorbidity, have a recorded CVD risk assessment score in the past 3 years.
- For indicator IND2023-166, the data shows that 47% of registered patients with no exclusions were eligible for inclusion in the denominator, which translates to 1,230 patients in an average practice with 10,000 patients. Results show 33% of people, with no exclusion and a modifiable risk factor, have a recorded CVD risk assessment score in the past 3 years.
- When comparing the data for indicators IND2023-165 and IND2023-166, it is evident that the differences in the denominator population sizes are negligible, with a difference of 30 patients per 10,000.

Additional data – considering comorbidities only.

- Additional data was retrieved, to consider a denominator the number of people aged 43-84 years with any of the following comorbidities: type 2 diabetes, erectile dysfunction, serious mental illness, rheumatoid arthritis, systemic lupus erythematosus or atrial fibrillation, and no exclusions. The CPRD data shows that 9% of the registered patients 43 to 84 years would be included in the denominator, which translates to 918 patients in an average practice with 10,000 patients. CPRD data shows that 41% of the eligible population have a recorded CVD risk assessment score in the past three years.

References

Clinical Practice Research Datalink. (2024). CPRD Aurum March 2024 (Version 2024.03.001) [Data set]. Clinical Practice Research Datalink.
<https://doi.org/10.48329/yxmq-vk87>