The Strategy Unit.

Visualising Socio-Economic Inequalities in CHD Progression and Pathways

Prepared for British Heart Foundation

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Contents

1. Introduction

This report explores socio-economic inequalities along the coronary heart disease (CHD) pathway.

The objectives of the report are to:

1. Quantify and illustrate the socio-economic inequalities at various points of the disease progression continuum and treatment pathway
2. Explain the content of a proposed interactive tool that can be used to explore inequalities at a local level and, provide sample visualisations by ICB with a view to supporting the decision on progression to the tool development phase and discuss whether to proceed to develop the tool.
3. Explore the feasibility of assessing inequalities over other dimensions.

The analysis has been conducted by the Strategy Unit on behalf of the British Heart Foundation.

1.1 Cardiovascular disease mortality rates

There are substantial differences in cardiovascular disease mortality rates between socio-economic groups. These differences in outcomes have been explored extensively, and a detailed understanding of the moderating role of socio-economic status on cardiovascular disease has emerged.

In recent decades, significant progress has been made in reducing deaths from cardiovascular disease, by lowering the prevalence of certain risk factors, such as smoking, improving the consistency of disease management, and by introducing new diagnostic, pharmacological and surgical interventions. Whilst these improvements have benefitted all socio-economic groups, relative differences in cardio-vascular mortality rates have increased.

Local health systems will want to seek continued improvements in cardio-vascular outcomes for their population as a whole, but it is accepted that reducing differences in outcomes between groups is a legitimate and important objective in its own right, one that is central to the NHS long term plan. There is no shortage of evidence on improving population outcomes, but health systems lack information about where to target resources to reduce inequalities.

Part of the challenge here is one of dimensionality. Risk factors, interventions, intermediate and final outcomes from cardio-vascular disease are numerous. Assessing this information for a population as a whole is not easy. But assessing these metrics across several socio-economic groups simultaneously presents an altogether more difficult cognitive challenge. In an ideal world, a commissioner would be able to identify the points on a cardio-vascular disease pathway where

inequalities are most marked and where targeted intervention would reduce inequalities in outcomes.

1.2 What are inequities in a healthcare context?

The term 'inequities' is used to describe unjustifiable differences in rates of access between subgroups. An equity analysis must control for levels of need within each population subgroup. Having done this, an equitable distribution of services is one where rates of access to a service or population follow the distribution of need, such that a patient with a given level of need in one subgroup has the same chance of accessing a service as their counterparts with a similar level of need in other subgroups. This is the standard that the NHS seeks to achieve. Assessing equity is challenging. Further detail about inequalities and inequities in healthcare can be found in a recent Strategy Unit report[1]

1.3 Dimensions of inequality

Inequalities and inequities can act across many different dimensions: gender, ethnicity, geography, sexual preference, religion etc. This report is concerned with differences in rates of access between socio-economic groups as defined by indices of deprivation. These indices score and rank small geographical areas (known as lower super output areas) by the relative levels of deprivation experienced by their residents. The English Indices of Deprivation 2019, the most recent release, measures deprivation across seven domains: income, employment, education, health, crime, barriers to housing and services and living environment. Because this multi-faceted definition of deprivation is used, deprivation should not be considered equivalent to poverty although it is often the case that people living in the most deprived areas have lower levels of income than people living in other areas.

Areas are often grouped in to 10 equally sized, deciles of deprivation with decile 1 representing the 10% of areas with the highest levels of deprivation and decile 10 representing the areas with the lowest levels of deprivation. Quintiles of deprivation, five equally sized groups, are also commonly used

1.4 Measuring inequalities

In this report, we use the relative index of inequalities (RII) to indicate the extent to which the rate of an activity or event varies across socio-economic groups defined by deciles of deprivation. It is

[1] https://www.strategyunitwm.nhs.uk/publications/socio-economic-inequalities-access-planned-hospital-care-causes-and-consequences

similar to the range (the difference between the highest and lowest rates) but takes into account the values for all deprivation deciles as well as the population size of each group, such that smaller groups do not unduly skew the results. Where the denominator of the rates assessed is the population size, the RII measures degrees of inequality. Where the denominator is a measure of need, the RII measures inequities.

2. CHD Metrics

This report quantifies and illustrates levels of inequity across 33 metrics at various points along the continuum of coronary heart disease progression and over a typical treatment pathway. They are shown in the table below grouped by domain (risk factors, risk factor identification, primary prevention, disease identification, secondary prevention, tertiary prevention, intermediate and full outcomes), which represent the various stages along the pathway. Full definitions and data sources for each metric are included in the appendix.

Table 1 – coronary heart disease pathway metrics

Domain	Metric
Need	CHD synthetic prevalence estimates
Risk factors	Smoking synthetic prevalence estimates
Risk factor identification	Smoking register
	Obesity register
	Diabetes register
	Depression register
	CVD risk register
Primary prevention	Statins for CV risk >20%
	Smoking cessation support offered
	Exception reporting for Smoking cessation support offered
Disease identification	CHD register
	CT angiography
	Electrocardiography
Secondary prevention	For patients with CHD, a record that aspirin, APT or ACT is taken exists
	Exception reporting for Aspirin, APT or ACT record
	Patients with CHD immunised against flu
	Exception reporting for patients with CHD immunised against flu
	Referral to cardiology (First outpatient)
	Cardiology outpatient DNAs
Tertiary prevention	Elective PCI
	Elective CABG
	Waiting time for elective PCI / CABG
	Elective PCI / CABG patients discharged before trimpoint
	Cardiac rehabilitation - Pseudo-eligible
	Cardiac rehabilitation - Started
	Cardiac rehabilitation - Completed
Intermediate outcome	Last BP reading of patients (<80 years, with CHD) in last 12mths is <=140/90
	Readmission within 30 days of elective PCI / CABG
	Emergency admissions for CHD
Full outcomes	Deaths in hospital from CHD
	Deaths in hospital from CHD <75

Domain	Metric
	Deaths from CHD
	Deaths from CHD <75

3. Activity to Need Ratio

Key findings

- Patients from the most deprived areas are more likely to be identified with risk factors and placed on a register.
- Patients from the least deprived areas are more likely to receive secondary and tertiary preventions such as flu vaccines, medications, and elective procedures.
- Premature deaths are more likely amongst patients from the most deprived areas.

For each of the coronary heart disease metrics, assessments were made about whether, after adjusting for need, inequities exist in the CHD pathway.

The following charts show the activity-to-need ratios (activity per 1,000 need) by deprivation decile for each of the activity measures detailed in Table 1. The estimates of need used in this analysis are synthetic prevalence estimates of CHD produced for Public Health England. The units of analysis in this chapter are GP practices, because we can estimate the levels of both healthcare activity and need at this level. For each GP practice we estimated levels of deprivation by taking the mean of the deprivation scores from the lower super output areas (LSOAs) where the GP's registrants live, weighted by the number of registrants in each LSOA. GP practices were then assigned to 10 equally sized groups (deciles) based on these mean weighted deprivation scores. The charts also include the relative index of inequalities (RII) for each measure.

The RII represents the inequality gap across the whole population between the most and the least disadvantaged. It allows for comparison of inequity across different measures. The sign of the RII indicates the direction of the inequity: a negative RII indicates that activity-to-need ratios are higher for those in more deprived groups, whereas a positive RII indicates higher activity-to-need ratios in the least deprived groups. The absolute size of the RII (i.e., its numerical value without the sign) indicates the size of the inequity.

Patients in the most deprived areas are more likely to be identified with risk factors of smoking, obesity, diabetes, or depression, by their GP and placed on a register, than patients in the least deprived areas. Patients in the most deprived areas are also more likely to receive primary care prevention such as smoking cessation support or be prescribed statins where they are newly diagnosed with hypertension.

However, patients living in the least deprived areas are more likely to have electrocardiography and be identified with and recorded on the CHD register. Patients from the least deprived areas are also more likely to receive secondary preventions such as a flu vaccination, a cardiology outpatient referral, and prescribed medications such as aspirin, APT or ACT.

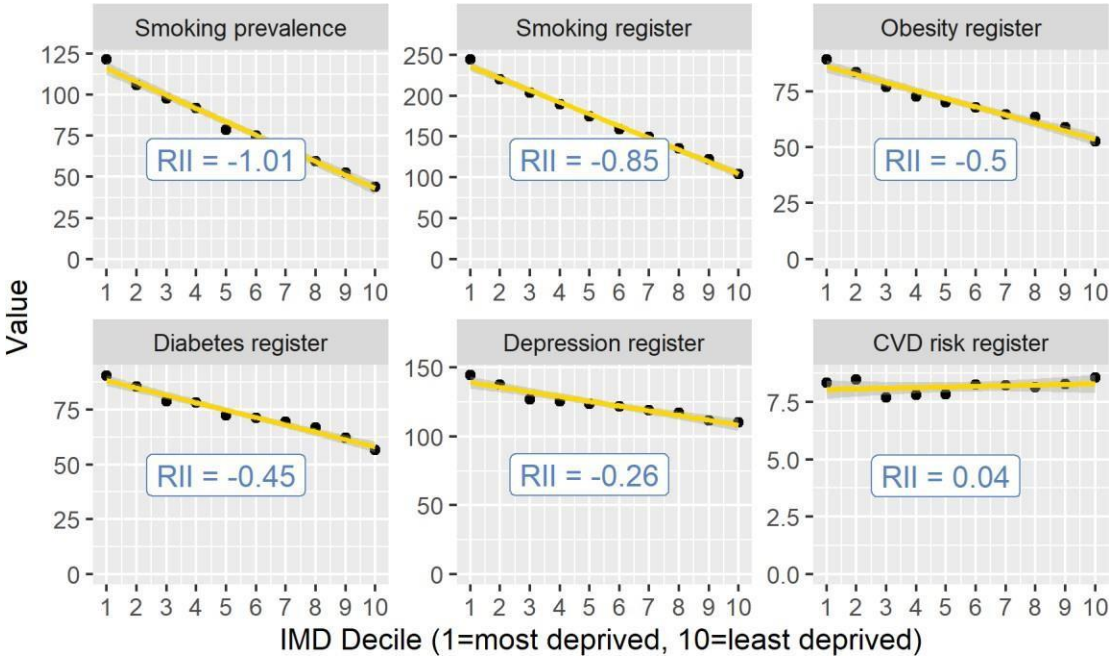
Tertiary preventions such as elective procedures (PCI and CABG) are more likely for those from the least deprived areas. However, rehabilitation is more likely to be started by patients from the most

deprived areas. Interestingly, patients receiving elective PCI or CABG procedures are more likely to be discharged early if they are from less deprived areas, however they are then more likely to be readmitted as an emergency within 30 days of discharge. Patients from the most deprived areas are more likely to be admitted as an emergency with a CHD diagnosis.

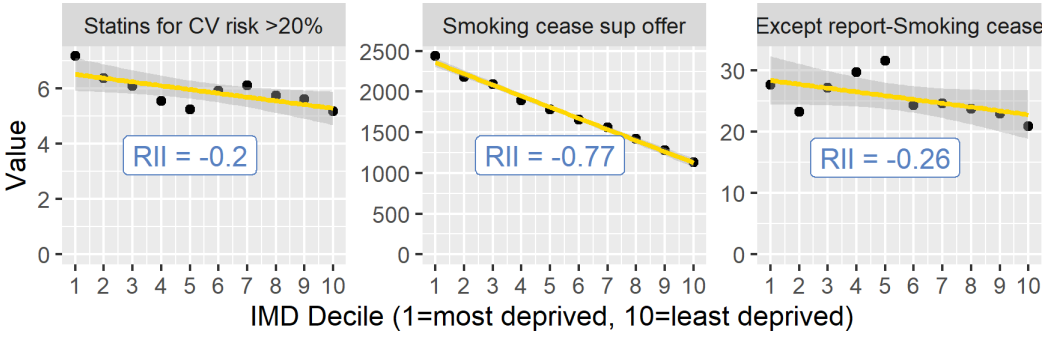
Amongst all ages, deaths from CHD are slightly more likely amongst those from less deprived areas, however, when considering premature deaths (aged <75) then this is more likely amongst patients from the most deprived areas.

Ratio of activity to need charts

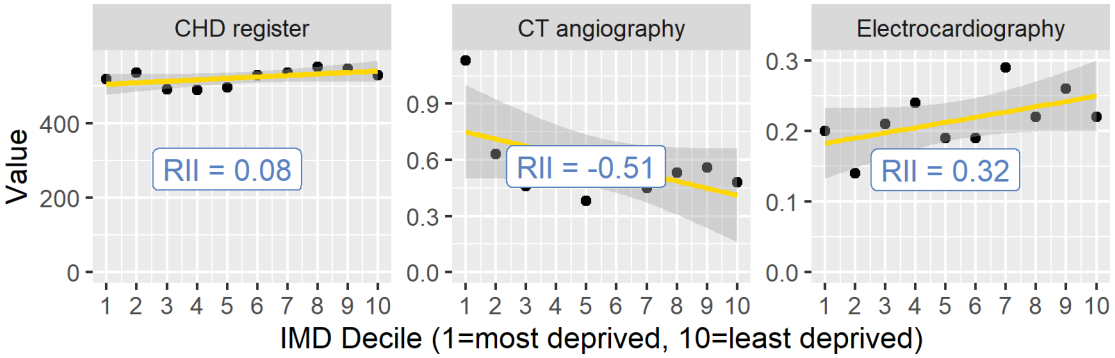
Risk



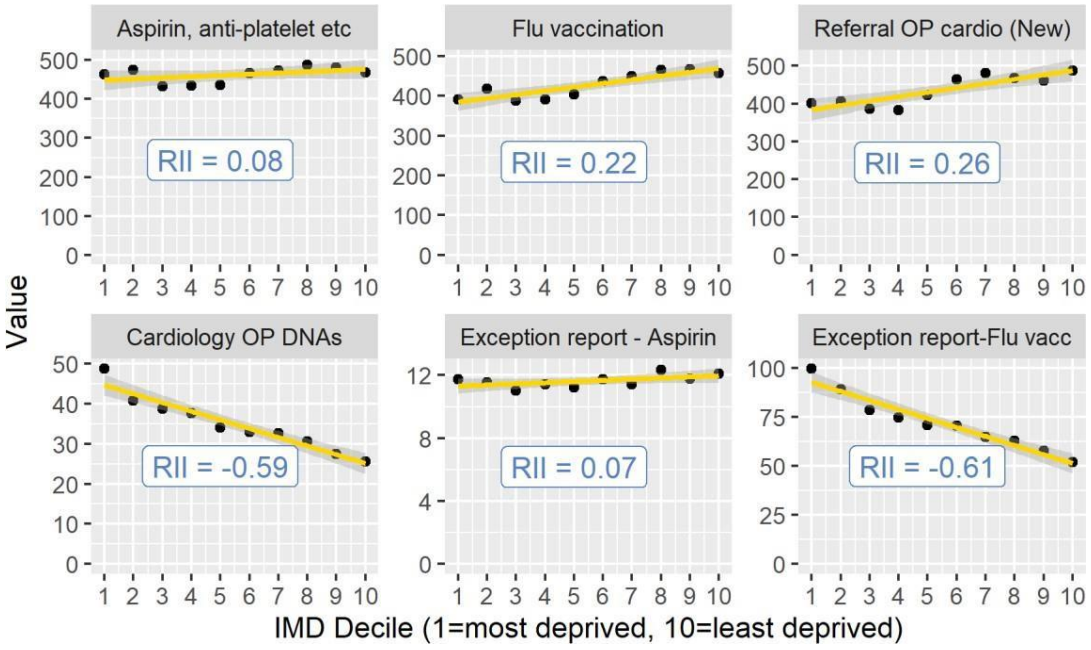
Primary Prevention



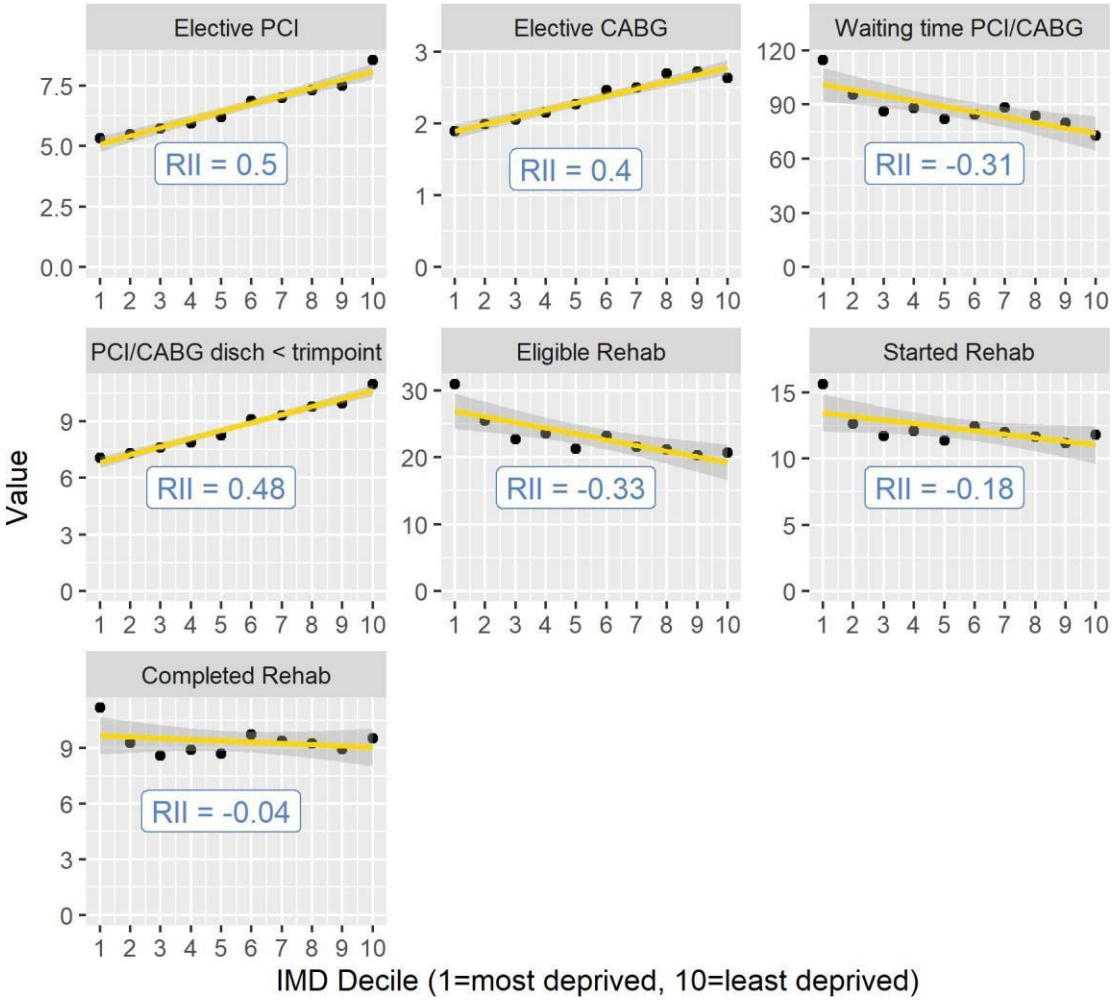
Disease Identification



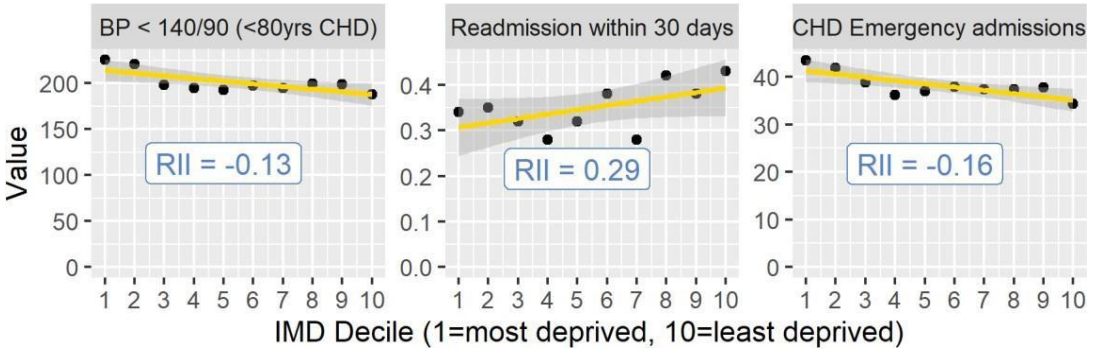
Secondary Prevention



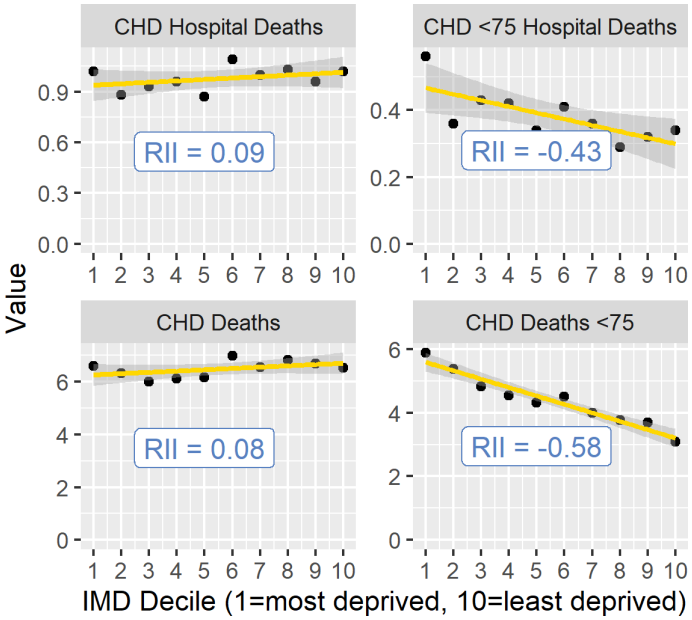
Tertiary Prevention



Intermediate Outcome



Full Outcomes

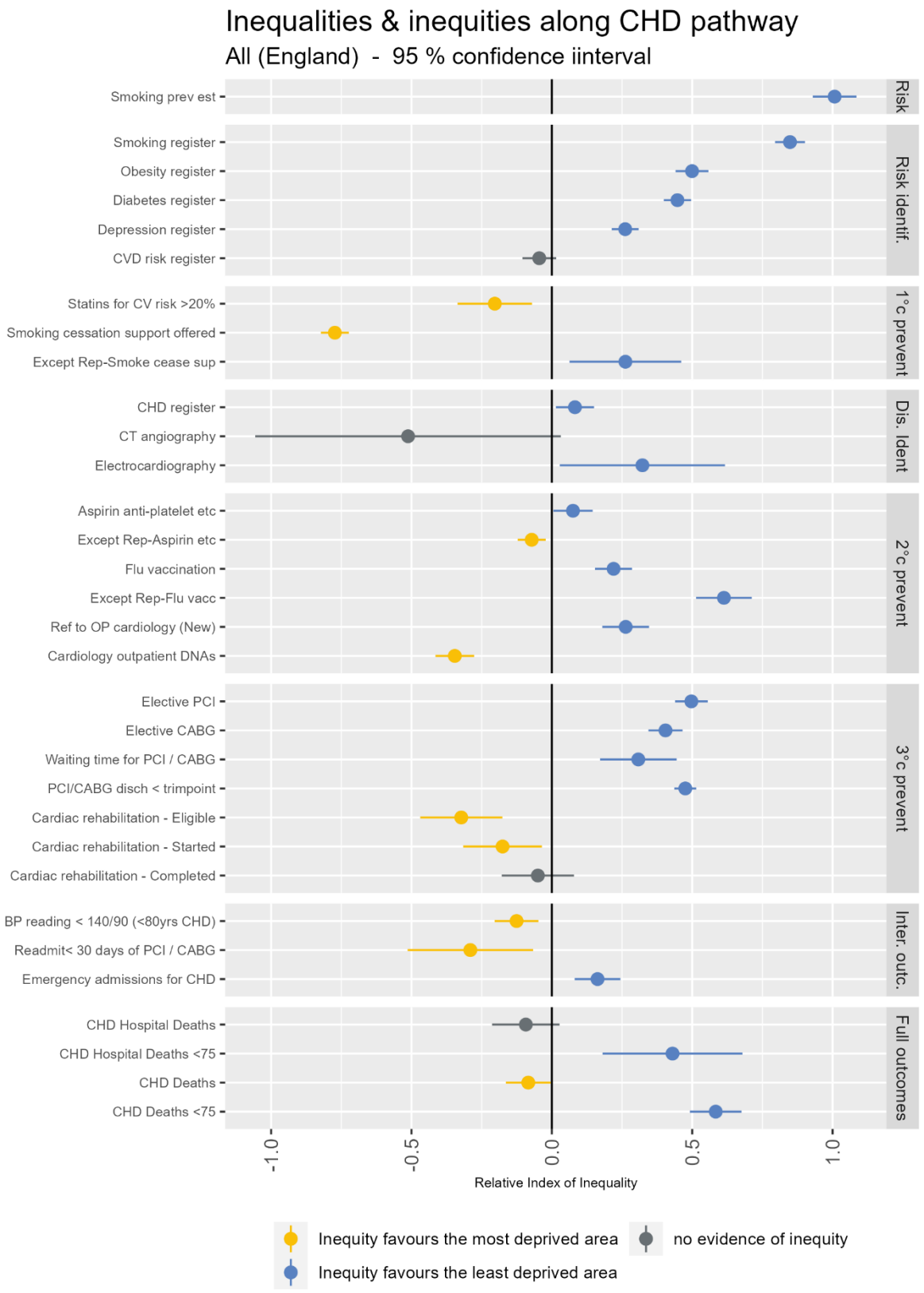


4. CHD Pathway Visualisation

4.1 National (England) level

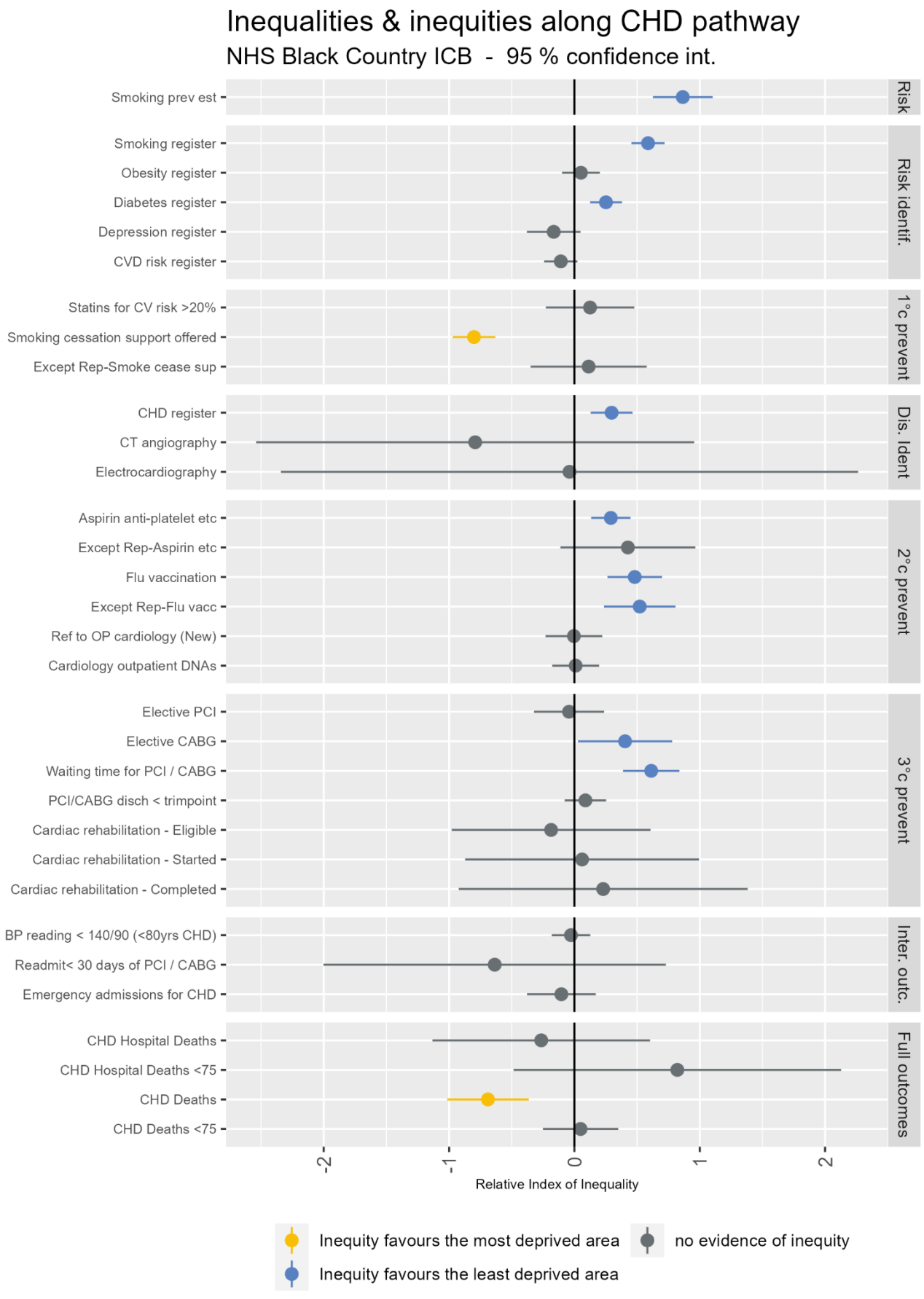
The summary chart below illustrates the RII for each metric on the CHD pathway. It has been designed to enable comparisons to be made between the individual metrics along the CHD pathway and illustrate at which points along the pathway inequities are greatest. Confidence intervals are also shown which indicate whether the observed inequity is statistically significant. Four methods of presentation were reviewed to use in an interactive tool.

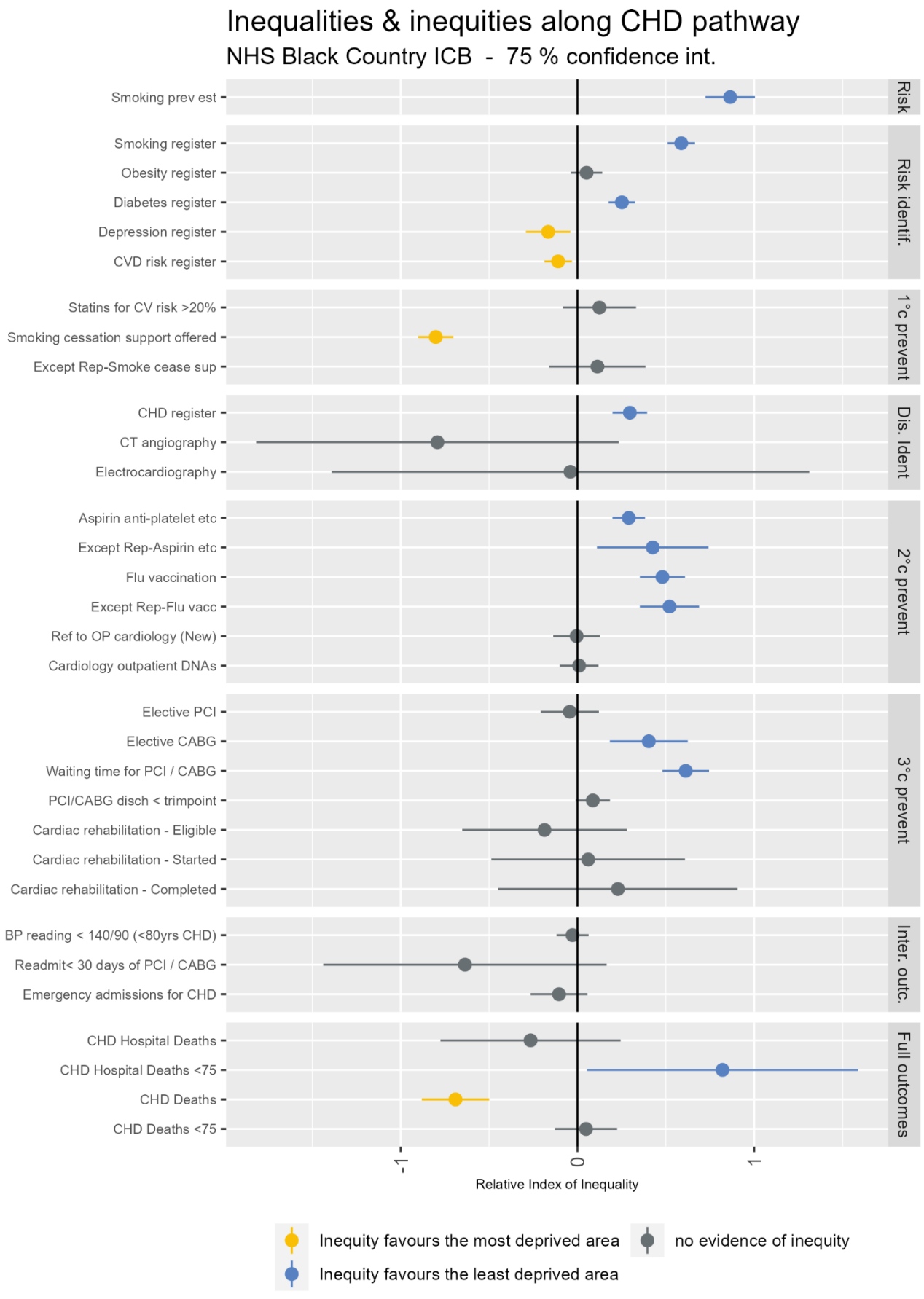
The chosen method attempts to address the benefit/disbenefit of the metrics by "flipping" the metric (multiply the RII by -1) where it would be considered a disbenefit. In this way a value judgement has been made for the reader and it is possible to see who the inequity favours and the variation along the pathway, with inequity favouring the least deprived appearing on the right-hand side of the chart (in blue) and inequity favouring the most deprived appearing on the left-hand side (in yellow).


Inequalities & inequities along CHD pathway
All (England) - 95 % confidence iinterval
Smoking prev est
Smoking register
Obesity register
Diabetes register
Depression register
CVD risk register
Statins for CV risk >20%
Smoking cessation support offered
Except Rep-Smoke cease sup
CHD register
CT angiography
Electrocardiography
Aspirin anti-platelet etc
Except Rep-Aspirin etc
Flu vaccination
Except Rep-Flu vacc
Ref to OP cardiology (New)
Cardiology outpatient DNAs
Elective PCI
Elective CABG
Waiting time for PCI / CABG
PCI/CABG disch < trimpoint
Cardiac rehabilitation - Eligible
Cardiac rehabilitation - Started
Cardiac rehabilitation - Completed
BP reading < 140/90 (<80yrs CHD)
Readmit< 30 days of PCI / CABG
Emergency admissions for CHD
CHD Hospital Deaths
CHD Hospital Deaths <75
CHD Deaths
CHD Deaths <75
Risk
Risk identif.
1°c prevent
Dis. Ident
2°c prevent
3°c prevent
Inter. outc.
Full outcomes
-1.0
-0.5
0.0
0.5
1.0
Relative Index of Inequality
Inequity favours the most deprived area
no evidence of inequity
Inequity favours the least deprived area

4.2 ICB level

The interactive tool allows local areas (ICBs) to explore regional inequities to support initiatives targeted where most inequity exists. Below are some illustrative examples of ICB level charts that are indicative of those that are included within the tool. The national charts presented earlier use a confidence interval of 95%, however, when considering ICB level outputs using 95% confidence intervals often results in a high(er) proportion of metrics being classified as not showing statistically significant levels of inequity. This is in part due to the small volumes of activity for some metrics at this lower level. We have therefore presented below examples for the Black Country ICB where confidence intervals are set at 95% and 75%. The tool allows the user to choose between different levels of confidence.


Inequalities & inequities along CHD pathway
NHS Black Country ICB - 95 % confidence int.
Smoking prev est
Smoking register
Obesity register
Diabetes register
Depression register
CVD risk register
Statins for CV risk >20%
Smoking cessation support offered
Except Rep-Smoke cease sup
CHD register
CT angiography
Electrocardiography
Aspirin anti-platelet etc
Except Rep-Aspirin etc
Flu vaccination
Except Rep-Flu vacc
Ref to OP cardiology (New)
Cardiology outpatient DNAs
Elective PCI
Elective CABG
Waiting time for PCI / CABG
PCI/CABG disch < trimpoint
Cardiac rehabilitation - Eligible
Cardiac rehabilitation - Started
Cardiac rehabilitation - Completed
BP reading < 140/90 (<80yrs CHD)
Readmit< 30 days of PCI / CABG
Emergency admissions for CHD
CHD Hospital Deaths
CHD Hospital Deaths <75
CHD Deaths
CHD Deaths <75
Risk
Risk identif.
1°c prevent
Dis. Ident
2°c prevent
3°c prevent
Inter. outc.
Full outcomes
-2
-1
0
1
2
Relative Index of Inequality
Inequity favours the most deprived area
Inequity favours the least deprived area
no evidence of inequity


Inequalities & inequities along CHD pathway
NHS Black Country ICB - 75 % confidence int.
Smoking prev est
Smoking register
Obesity register
Diabetes register
Depression register
CVD risk register
Statins for CV risk >20%
Smoking cessation support offered
Except Rep-Smoke cease sup
CHD register
CT angiography
Electrocardiography
Aspirin anti-platelet etc
Except Rep-Aspirin etc
Flu vaccination
Except Rep-Flu vacc
Ref to OP cardiology (New)
Cardiology outpatient DNAs
Elective PCI
Elective CABG
Waiting time for PCI / CABG
PCI/CABG disch < trimpoint
Cardiac rehabilitation - Eligible
Cardiac rehabilitation - Started
Cardiac rehabilitation - Completed
BP reading < 140/90 (<80yrs CHD)
Readmit< 30 days of PCI / CABG
Emergency admissions for CHD
CHD Hospital Deaths
CHD Hospital Deaths <75
CHD Deaths
CHD Deaths <75
Risk
Risk identif.
1°c prevent
Dis. Ident
2°c prevent
3°c prevent
Inter. outc.
Full outcomes
-1
0
1
Relative Index of Inequality
Inequity favours the most deprived area
Inequity favours the least deprived area
no evidence of inequity

5. Conclusion and Next Steps

As with previous reports from the Strategy Unit [2], this report shows evidence of significant and widespread inequalities and inequities along the care pathway. The inequity for most of the metrics along the pathway favours those living in the least deprived areas. Notably those in less deprived areas are more likely to be identified as having CHD, are more likely to be referred to a cardiologist, are more likely to receive a procedure, spend less time waiting for a procedure and are less likely to die prematurely.

5.1 Feasibility of extending the approach to other axes of inequality

As part of our proposal to the British Heart Foundation we agreed to explore the feasibility of extending the approach to visualising cardiovascular disease pathway inequalities by socio-economic group, to other axes of inequality. We agreed to explore the feasibility of extending the approach to inequalities between levels of educational attainment and ethnic group.

1

5.2 Inequalities by educational attainment

In our core analysis by socio-economic group, GP practices are assigned to one of 10 (check) deciles of deprivation. This assignment uses lower super output area (LSOA) data on deprivation, derived from the 2019 English Indices of Deprivation (EIoD2019) and the resident distribution of a GP practice's patients over LSOAs. EIoD2019 is built up from a series of domains, sub-domains, and indicators. One of these domains explores deprivation from the perspective of education. The domain comprises three indicators: (1) staying on in education post 16, (2) entry to higher education, and (3) adult skills and English language proficiency. It would be feasible, indeed fairly straightforward to replicate the approach we have used to visualise socio—economic inequalities to visualise inequalities by educational attainment using either the EIoD2019 education domain or one of its component indicators.

Furthermore, a similar approach could be used to explore inequalities over any of the other EIoD2019 domains, sub-domains or indicators. We list the domains and sub-domains below for information.

- Income
- Income affecting children

[2] https://www.strategyunitwm.nhs.uk/publications/socio-economic-inequalities-access-planned-hospital-care-causes-and-consequences

- Income affecting older people
- Employment
- Health
- Crime
- Barriers to housing and services
- Living environment

5.3 Inequalities by ethnicity

Assessing inequalities across ethnic groups is more challenging. We set out the two key challenges and our proposed solutions below.

Challenge	Possible solution
The distribution of patients across ethnic groups will be unique to each practice. There is no meaningful way to numerically aggregate these distributions into a single variable (e.g. % BME) without significant loss of information. An alternative method of grouping practices according to the distribution of its patients over ethnic group would be required.	We propose the use of k-medoids clustering to assign practices to one of a small number of groups such that practices within a group have similar distributions of patients over ethnic groups. K-medoids is an established, and commonly used unsupervised machine learning technique.
Ethnicity, unlike deprivation of educational attainment is not an ordered variable. Our standard approach uses the relative index of inequality to measure the degree of inequality. This measure relies on the ordered quality of the socio-economic deprivation variable. An alternative measure of inequality would be required to handle the categorical nature of the ethnicity variable.	We propose to use the relative index of disparity. This index estimates the proportion of events (e.g., admissions) that would need to be redistributed between (ethnic) groups in order that event rates follow levels of need.

Further work would be required to test these approaches before a confident decision to proceed could be taken. Should the British Heart Foundation decide there is value in either or both of the above additions then the Strategy Unit would provide an additional costed proposal to undertake the work.

6. Appendix

6.1 Definitions and data sources of pathway metrics

The table below sets out the sources of the various metrics as well as the time-period to which they relate, and details of the selection criteria used.

Table 2

Domain	Metric	Data source	Year	Definition and selection criteria/codes
Need	CHD synthetic prevalence estimates	PHE	2015	Indicator 92847 extracted from FingertipsR
Risk factors	Smoking synthetic prevalence estimates	GP Survey	2021	
Risk factor identification	Smoking register	NHSD QOF	2020/21	Indicator 91280 extracted from FingertipsR
	Obesity register	NHSD QOF	2019/20	Indicator 93088 extracted from FingertipsR
	Diabetes register	NHSD QOF	2020/21	Indicator 241 extracted from FingertipsR
	Depression register	NHSD QOF	2020/21	Indicator 848 extracted from FingertipsR
	CVD risk register	NHSD QOF	2019/20	Indicator 92589 extracted from FingertipsR
Primary prevention	Statins for CV risk >20%	NHSD QOF	2019/20	Indicator 91248 extracted from FingertipsR
	Smoking cessation support offered	NHSD QOF	2020/21	Indicator 90619 extracted from FingertipsR. Used SMOK004
	Exception reporting for Smoking cessation support offered	NHSD QOF	2020/21	QOF_ACHIEVEMENT_2021_v2. indicator_code = 'SMOK004' and measure = 'PCAS'
Disease identification	CHD register	NHSD QOF	2020/21	Indicator 273 extracted from FingertipsR
	CT angiography	HES	2019/20	OPCS Code: U102 - Cardiac computed tomography angiography. Elective only
	Electrocardiography	HES	2019/20	OPCS: U19 & U34. Elective only
Secondary prevention	For patients with CHD, a record that aspirin, APT or ACT is taken exists	NHSD QOF	2020/21	Indicator 90999 extracted from FingertipsR
	Exception reporting for Aspirin, APT or ACT record	NHSD QOF	2020/21	QOF_ACHIEVEMENT_2021_v2. indicator_code = 'CHD005' and measure = 'PCAS'
	Patients with CHD immunised against flu	NHSD QOF	2020/21	Indicator 91000 extracted from FingertipsR Used CHD007 - Patients with CHD immunised against flu (den.incl.PCAs)

Domain	Metric	Data source	Year	Definition and selection criteria/codes
	Exception reporting for patients with CHD immunised against flu	NHSD QOF	2020/21	QOF_ACHIEVEMENT_2021_v2. indicator_code = 'CHD007' and measure = 'PCAS'
	Referral to cardiology (First outpatient)	HES	2018/19	TFC = 320.
	Cardiology outpatient DNAs	HES	2018/19	TFC = 320.
Tertiary prevention	Elective PCI	HES	2019/20	OPCS Code: K49, K50, K75. FCE = 1
	Elective CABG	HES	2019/20	OPCS Code: K40-K46, FCE = 1
	Waiting time for elective PCI / CABG	HES	2019/20	Elecdate is not null and elecdur is not null. FCE =1. Elective admissions. OPCS Codes as per metrics 20 and 21
	Elective PCI / CABG patients discharged before trimpoint	HES	2019/20	Main PCI and CABG Trim points for 2019/20 linked for HRG
	Cardiac rehabilitation - Pseudo-eligible	NACR	2021	Data supplied by STP. Aggregated ACS and HF patients.
	Cardiac rehabilitation - Started	NACR	2021	Data supplied by STP. Aggregated ACS and HF patients.
	Cardiac rehabilitation - Completed	NACR	2021	Data supplied by STP. Aggregated ACS and HF patients.
Intermediate outcome	Last BP reading of patients (<80 yrs, with CHD) in last 12mths is <=140/90	NHSD QOF	2020/21	CHD008
	Readmission within 30 days of elective PCI / CABG	HES	2018/19 (Mar-Feb)	No. of emerg. spells up to 31/03/2019 within 0-29 days (inclusive) of the last, previous discharge from hospital / No. of finished spells with discharge date between 01/03/2018 and 28/02/2019 Exclude: TFC = 501, 560, 610, OPCS starting with O, Classpat = 1 (Ord.), Any diagnosis = C00*-C97*, D37*-D48*
	Emergency admissions for CHD	HES	2019/20	PRIMARY diagnosis = I20 or I21 or I22 or I23 or I24 or I25
Full outcomes	Deaths in hospital from CHD	HES	2019/20	'Following any admission Elective or Emergency. PRIMARY diagnosis = I20 or I21 or I22 or I23 or I24 or I25
	Deaths in hospital from CHD <75	HES	2019/20	'Following any admission Elective or Emergency. PRIMARY diagnosis = I20 or I21 or I22 or I23 or I24 or I25. Age <=75
	Deaths from CHD	ONS Death records	2018/19	'Underlying Cause of Death = I20 or I21 or I22 or I23 or I24 or I25
	Deaths from CHD <75	ONS Death records	2018/19	'Underlying Cause of Death = I20 or I21 or I22 or I23 or I24 or I25. Age <=75

6.2 Methods explained

The data was assembled using Transact-SQL and the analysis conducted using R and selected R libraries.

6.2.1 QOF data

Metrics taken from the QOF data via Fingertips have been extracted by GP practice and the counts (numerator of the measure) from the calculations have been used.

Exception reporting metrics have used the Personalised Care Adjustment (PCA) data to obtain the number of patients by GP practice for whom a PCA has been recorded for the relevant metric. Possible reasons for a PCA include; Newly diagnosed/registered, Intervention is clinically unsuitable, patient choice, did not respond to offers of care, service not available.

6.2.2 HES data

HES data was extracted using Transact-SQL and using relevant OPCS, ICD10, HRG, and Treatment function codes as detailed in table 2 above.

6.2.3 Cardiac rehabilitation

This data was supplied by NACR. The data wasn't available by GP Practice, so an alternative method was followed. Patients were allocated to an IMD and an STP using their home postcode and data was then supplied aggregated into IMDs by STP. In some cases, the data had to be redacted due to small numbers in the category. For the purposes of this analysis the redacted data item was re-assigned an average value.

The true definition of eligible for rehabilitation is the HES admission and successful discharge of all patients with CVD e.g., MI, revascularization, or HF. However, to link with the NACR only those records entered into the database can be used so NACR use pseudo eligible as this is as close as the audit can get, at a granular level, to eligible. It is though affected by areas without entry to the database,

The data used relates to the 2021 calendar year, which is the most recent complete year, and following changes in the way rehabilitation has been delivered due to the Covid pandemic, most closely reflects the rehabilitation model now in place.

6.2.4 Readmission within 30 days

The methodology used for this metric follows, as far as possible, that detailed by NHS Digital[3]. The readmissions counted relate to those who had an elective PCI / CABG in the period 1/3/2018 to 28/2/2019.

6.2.5 ONS Death records

ONS death records contain an encrypted HES ID which was used to link to outpatient, inpatient and A&E HES records, from which the latest GP practice recorded (on a spine traced record) for the patient was then assigned to the death record.

6.2.6 Activity to need ratio calculation

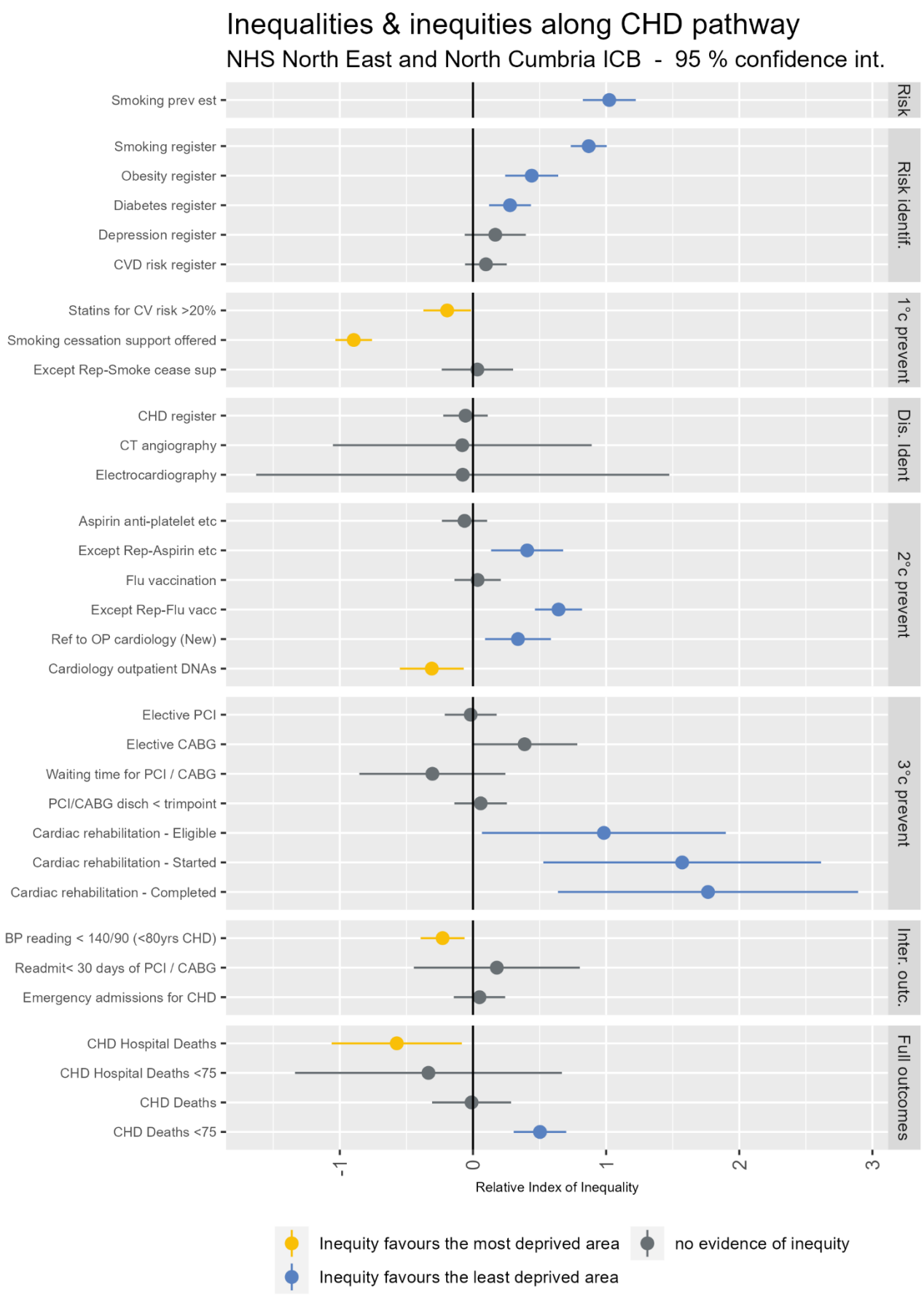
To adjust the activity in these metrics for the levels of need within the population, the synthetic estimate of CHD was used. The PHE synthetic estimate prevalence rate was applied to the 16+ population to give an estimate of the numbers in the given population with CHD.

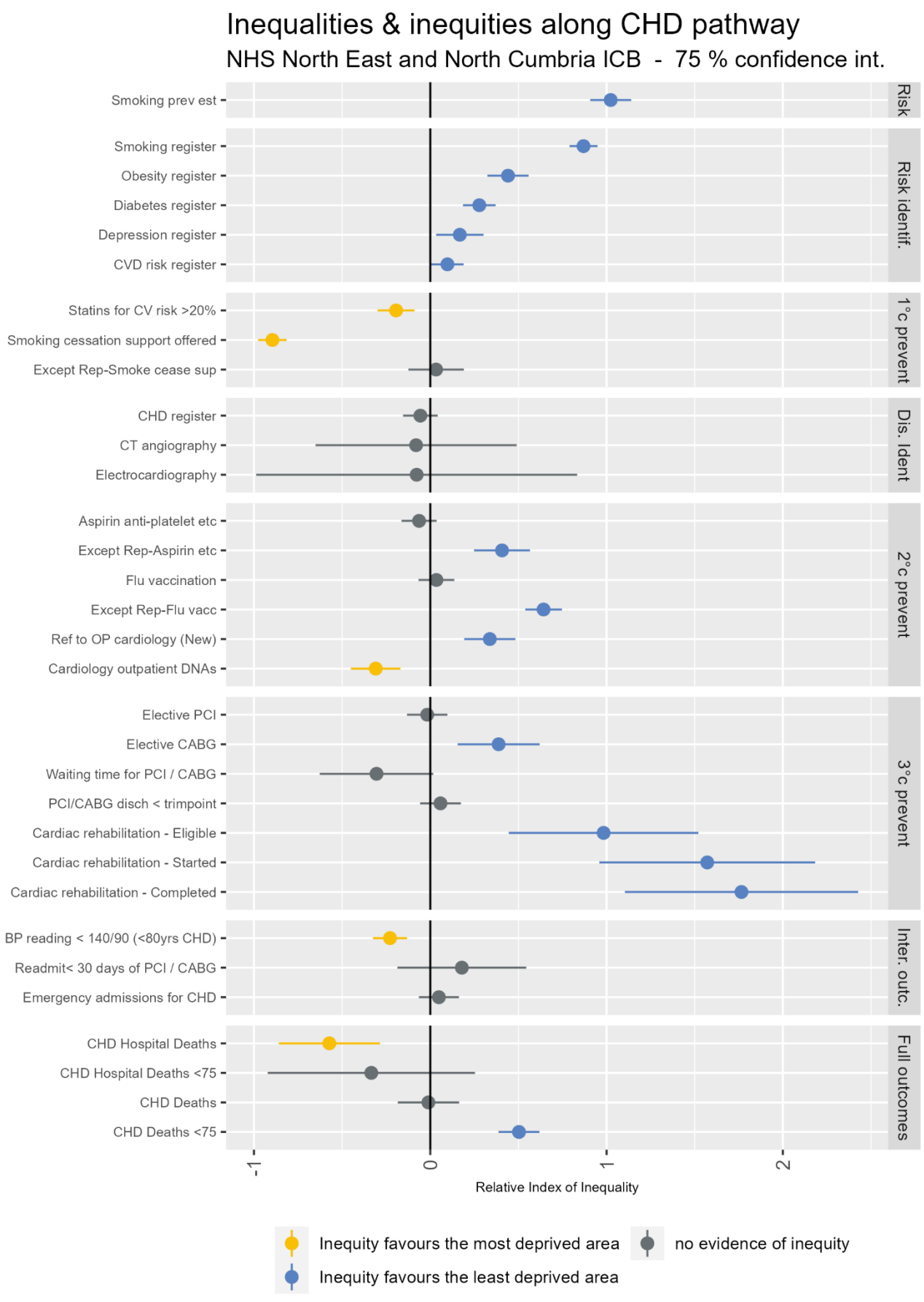
Each metric was then divided by this estimate of the population with CHD to generate a ratio of activity to need.

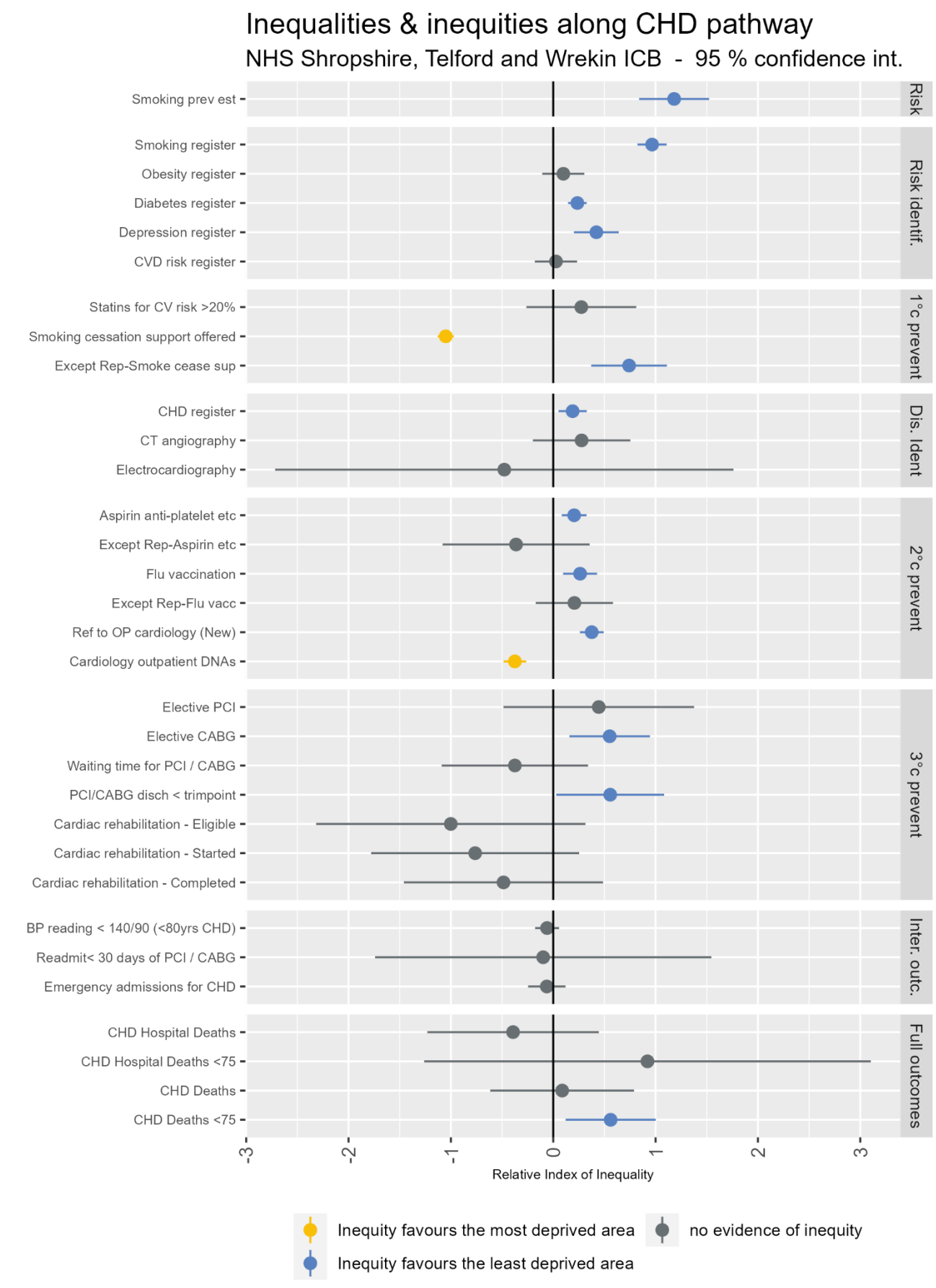
6.2.7 Confidence intervals

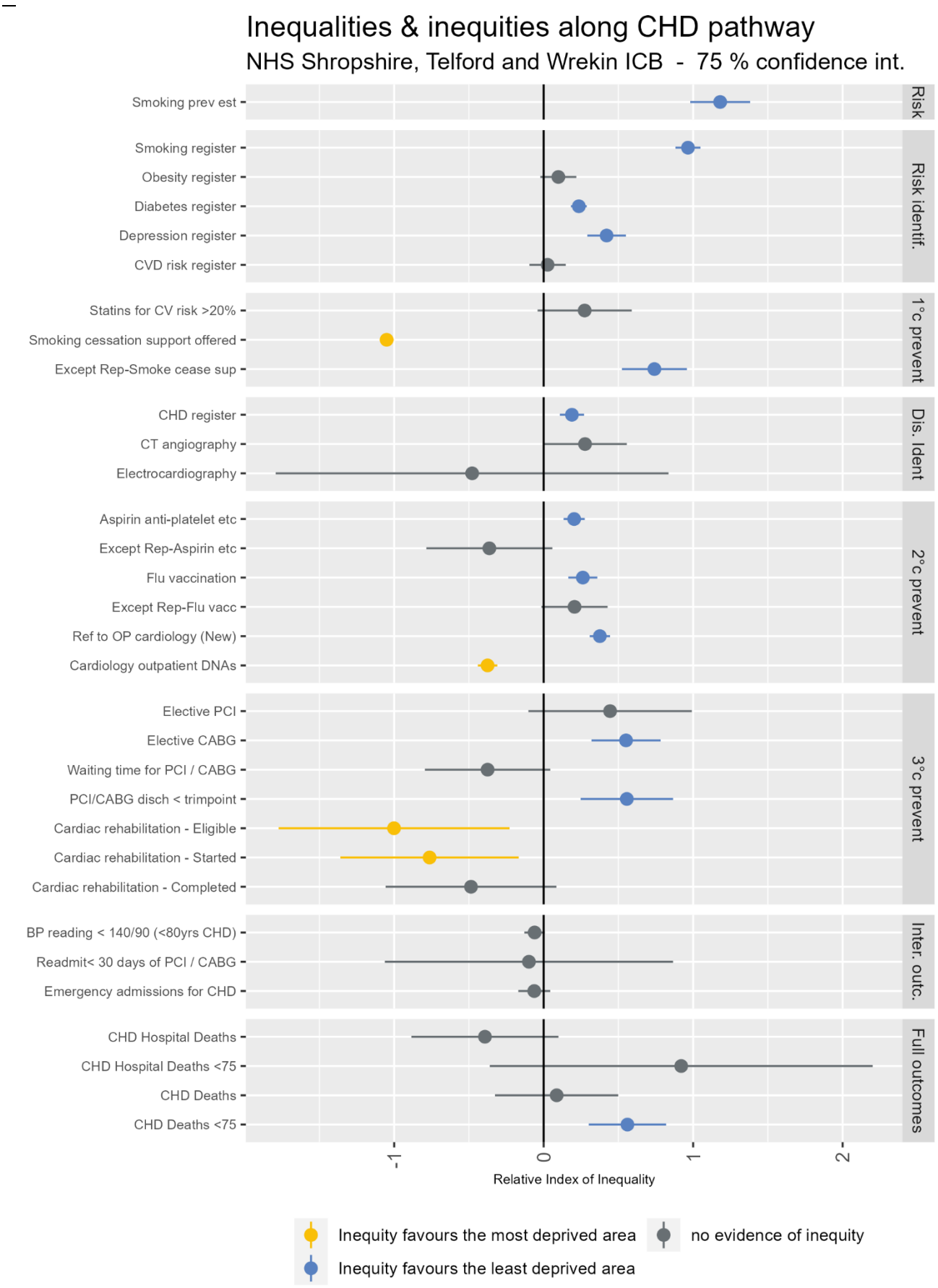
A confidence interval of 95% is used in the national charts presented in this report, but at an ICB level it might be considered necessary to use a lower confidence interval. Presented here in this appendix are example charts for North East and North Cumbria (the largest ICB with a 16+ population of 2.5 million) and the smallest ICB, Shropshire and Telford and Wrekin (with a 16+ population of just under 420,000). For each of these ICBs, examples are provided for confidence intervals of 95% and 75% to illustrate how they may look when selected in the interactive tool.

[3] https://digital.nhs.uk/data-and-information/publications/statistical/ccg-outcomes-indicator-set/specifications/3.2-emergency-readmissions-within-30-days-of-discharge-from-hospital_1_4


Inequalities & inequities along CHD pathway
NHS North East and North Cumbria ICB - 95 % confidence int.
Smoking prev est
Smoking register
Obesity register
Diabetes register
Depression register
CVD risk register
Statins for CV risk >20%
Smoking cessation support offered
Except Rep-Smoke cease sup
CHD register
CT angiography
Electrocardiography
Aspirin anti-platelet etc
Except Rep-Aspirin etc
Flu vaccination
Except Rep-Flu vacc
Ref to OP cardiology (New)
Cardiology outpatient DNAs
Elective PCI
Elective CABG
Waiting time for PCI / CABG
PCI/CABG disch < trimpoint
Cardiac rehabilitation - Eligible
Cardiac rehabilitation - Started
Cardiac rehabilitation - Completed
BP reading < 140/90 (<80yrs CHD)
Readmit< 30 days of PCI / CABG
Emergency admissions for CHD
CHD Hospital Deaths
CHD Hospital Deaths <75
CHD Deaths
CHD Deaths <75
Risk
Risk identif.
1°c prevent
Dis. Ident
2°c prevent
3°c prevent
Inter. outc.
Full outcomes
-1
0
1
2
3
Relative Index of Inequality
Inequity favours the most deprived area
Inequity favours the least deprived area
no evidence of inequity


Inequalities & inequities along CHD pathway
NHS North East and North Cumbria ICB - 75 % confidence int.
Smoking prev est
Smoking register
Obesity register
Diabetes register
Depression register
CVD risk register
Statins for CV risk >20%
Smoking cessation support offered
Except Rep-Smoke cease sup
CHD register
CT angiography
Electrocardiography
Aspirin anti-platelet etc
Except Rep-Aspirin etc
Flu vaccination
Except Rep-Flu vacc
Ref to OP cardiology (New)
Cardiology outpatient DNAs
Elective PCI
Elective CABG
Waiting time for PCI / CABG
PCI/CABG disch < trimpoint
Cardiac rehabilitation - Eligible
Cardiac rehabilitation - Started
Cardiac rehabilitation - Completed
BP reading < 140/90 (<80yrs CHD)
Readmit< 30 days of PCI / CABG
Emergency admissions for CHD
CHD Hospital Deaths
CHD Hospital Deaths <75
CHD Deaths
CHD Deaths <75
Risk
Risk identif.
1°c prevent
Dis. Ident
2°c prevent
3°c prevent
Inter. outc.
Full outcomes
-1
0
1
2
Relative Index of Inequality
Inequity favours the most deprived area
Inequity favours the least deprived area
no evidence of inequity


Inequalities & inequities along CHD pathway
NHS Shropshire, Telford and Wrekin ICB - 95 % confidence int.
Smoking prev est
Smoking register
Obesity register
Diabetes register
Depression register
CVD risk register
Statins for CV risk >20%
Smoking cessation support offered
Except Rep-Smoke cease sup
CHD register
CT angiography
Electrocardiography
Aspirin anti-platelet etc
Except Rep-Aspirin etc
Flu vaccination
Except Rep-Flu vacc
Ref to OP cardiology (New)
Cardiology outpatient DNAs
Elective PCI
Elective CABG
Waiting time for PCI / CABG
PCI/CABG disch < trimpoint
Cardiac rehabilitation - Eligible
Cardiac rehabilitation - Started
Cardiac rehabilitation - Completed
BP reading < 140/90 (<80yrs CHD)
Readmit< 30 days of PCI / CABG
Emergency admissions for CHD
CHD Hospital Deaths
CHD Hospital Deaths <75
CHD Deaths
CHD Deaths <75
Risk
Risk identif.
1°c prevent
Dis. Ident
2°c prevent
3°c prevent
Inter. outc.
Full outcomes
-3
-2
-1
0
1
2
3
Relative Index of Inequality
Inequity favours the most deprived area
Inequity favours the least deprived area
no evidence of inequity


Inequalities & inequities along CHD pathway
NHS Shropshire, Telford and Wrekin ICB - 75 % confidence int.
Smoking prev est
Smoking register
Obesity register
Diabetes register
Depression register
CVD risk register
Statins for CV risk >20%
Smoking cessation support offered
Except Rep-Smoke cease sup
CHD register
CT angiography
Electrocardiography
Aspirin anti-platelet etc
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PCI/CABG disch < trimpoint
Cardiac rehabilitation - Eligible
Cardiac rehabilitation - Started
Cardiac rehabilitation - Completed
BP reading < 140/90 (<80yrs CHD)
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Emergency admissions for CHD
CHD Hospital Deaths
CHD Hospital Deaths <75
CHD Deaths
CHD Deaths <75
Risk
Risk identif.
1°c prevent
Dis. Ident
2°c prevent
3°c prevent
Inter. outc.
Full outcomes
-1
0
1
2
Relative Index of Inequality
Inequity favours the most deprived area
Inequity favours the least deprived area
no evidence of inequity

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