**Conditions included:**

Heart failure

Asthma

COPD

Hypertension

Myocardial Infarction

Angina

Atrial fibrillation

Stroke

Transient Ischaemic Attack

Peripheral Vascular Disease

Chronic Liver Disease

Dementia

Chronic Kidney Disease (stage 5)

Ischaemic Heart Disease

Revascularisation

Solid organ transplant

Other neurological conditions

Cancer

Foot infections and ulcers

**Complications:**

Diabetes complications (nephropathy, neuropathy, retinopathy)

**Biomarkers/ clinical measurements:**

BMI

Blood pressure

Height

Weight

**Lifestyle/ demographic features:**

Ethnicity

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| **Condition**  **(in file name)** | **Codelist 1** | **Codelist 2** | **Notes** |
| Heart Failure  (heartfailure) | Caliber  Heart failure  <https://portal.caliberresearch.org/phenotypes/kuan-hf-yxinh8trwet5pog7g48clc>  Added: 25/02/21 | OpenSAFELY  Heart failure  <https://codelists.opensafely.org/codelist/opensafely/heart-failure/2020-05-05/>  Added:25/02/21 |  |
| Asthma  (asthma) | Caliber  Asthma  <https://portal.caliberresearch.org/phenotypes/kuan-asthma-efthigq2rjygabhhuco4pw>  Added: 02/03/21 | OpenSAFELY  Asthma Diagnosis  <https://codelists.opensafely.org/codelist/opensafely/asthma-diagnosis/2020-04-15/>  Added: 02/03/21 |  |
| COPD  (copd) | Caliber  Chronic Obstructive Pulmonary Disease (COPD)  <https://portal.caliberresearch.org/phenotypes/kuan-copd-kgwojwpdpg8npp8huc37zd>  Added: 02/03/21 | OpenSAFELY  Current COPD  <https://codelists.opensafely.org/codelist/opensafely/current-copd/2020-05-06/>  Added: 02/03/21 | \*OS codelist created as a subset of OS Chronic Respiratory Disease Codelist |
| Hypertension  (hypertension) | Caliber  Hypertension  <https://portal.caliberresearch.org/phenotypes/kuan-hypertension-inukpplkh7qtfxfaq8qjaa>  Added: 03/03/21 | OpenSAFELY  Hypertension  <https://codelists.opensafely.org/codelist/opensafely/hypertension/2020-04-28/>  Added: 03/03/21 | \*Phenotyping algorithm also given in Caliber |
| Myocardial Infarction  (myocardialinfarction) | Caliber  Myocardial infarction  <https://portal.caliberresearch.org/phenotypes/kuan-myocardial-infarction-lg5fydnaomhyfennkpx92j>  Added: 03/03/21 | OpenSAFELY  Myocardial Infarction  <https://codelists.opensafely.org/codelist/opensafely/myocardial-infarction/2020-06-25/>  Added: 03/03/21 | \*Phenotyping algorithm also given in Caliber |
| Angina  (angina) | Caliber  Stable Angina  <https://portal.caliberresearch.org/phenotypes/kuan-stable-angina-7amhmwhkjhbnc2w32de4rt>  Added: 05/03/21  Unstable Angina  <https://portal.caliberresearch.org/phenotypes/kuan-unstable-angina-ccquofjx2zzprqrx8ubgdq>  Added: 05/03/21 | OpenSAFELY  Other Heart Disease  <https://codelists.opensafely.org/codelist/opensafely/other-heart-disease/2020-05-11/>  \*kept only codes from this list with “Angina” or “angina” in the description  Added: 05/03/21 | \*Phenotyping algorithm also given in Caliber  \*OS codelist is chronic heart conditions excluding heart failure |
| Atrial Fibrillation  (af) | Caliber  Atrial fibrillation  <https://portal.caliberresearch.org/phenotypes/kuan-af-7ld6qmwnjm3trhykwmpq6h>  Added: 03/03/21 | OpenSAFELY  Atrial fibrillation or flutter – Clinical finding  <https://codelists.opensafely.org/codelist/opensafely/atrial-fibrillation-clinical-finding/2020-07-09/>  Added: 12/03/21 | \*Phenotyping algorithm also given in Caliber |
| Stroke  (stroke) | Caliber  Stroke NOS  <https://portal.caliberresearch.org/phenotypes/kuan-stroke-nos-xvns5oshwa9hrbkevj2yyl>  Added: 03/03/21  Ischaemic stroke  <https://portal.caliberresearch.org/phenotypes/kuan-isch-stroke-nfrpsebdjbyxgwgzhqtq2a>  Added: 04/03/21 | OpenSAFELY  Stroke (updated)  <https://codelists.opensafely.org/codelist/opensafely/stroke-updated/2020-06-02/>  Added: 04/03/21 |  |
| Transient ischaemic attack  (tia) | Caliber  Transient ischaemic attack  <https://portal.caliberresearch.org/phenotypes/kuan-tia-xxlutcnthxos59d3ftn9fy>  Added: 03/03/21 | OpenSAFELY  Transient Ischaemic Attack  <https://codelists.opensafely.org/codelist/opensafely/transient-ischaemic-attack/3526e2ac/>  Added: 04/03/21 | \*OS codelist includes definite and probable TIA |
| Peripheral vascular disease  (pad) | Caliber  Peripheral arterial disease  <https://portal.caliberresearch.org/phenotypes/kuan-peripheral-arterial-disease-44jczffvdpmniwqnrtmijx>  Added: 03/03/21 | OpenSAFELY  peripheral arterial disease  <https://codelists.opensafely.org/codelist/opensafely/peripheral-arterial-disease/50e915d7/>  Added: 04/03/21 | \*Phenotyping algorithm also given in Caliber |
| Chronic liver disease  (cld) | Caliber  Alcoholic liver disease  <https://portal.caliberresearch.org/phenotypes/kuan-liver-alc-dx2rrinjmddgrfjzejyuh7>  Added: 05/03/21  Autoimmune liver disease  <https://portal.caliberresearch.org/phenotypes/kuan-autoimm-liver-ehcfqgupwewexfdz8vquby>  Added: 05/03/21  Chronic viral hepatitis  <https://portal.caliberresearch.org/phenotypes/kuan-chr-hep-ue8m4voqchggtrx2sqwfes>  Added: 05/03/21  Fatty liver  <https://portal.caliberresearch.org/phenotypes/kuan-fatty-liver-maahaluemormfcis7gorgs>  Added: 05/03/21  Hepatic failure  <https://portal.caliberresearch.org/phenotypes/kuan-liver-fail-5f44cpa3onkpv3axcvvdcp>  Added: 05/03/21    Liver fibrosis, sclerosis and cirrhosis  <https://portal.caliberresearch.org/phenotypes/kuan-cirrhosis-2lw7p3ulbveqv3vynlryu2>  Added: 05/03/21 | OpenSAFELY  Chronic Liver Disease  <https://codelists.opensafely.org/codelist/opensafely/chronic-liver-disease/2020-06-02/>  Added: 03/03/21 | \*OS codelist includes signs of cirrhosis and liver transplant |
| Dementia  (dementia) | Caliber  Dementia  <https://portal.caliberresearch.org/phenotypes/kuan-dementia-jxyxcgdmoqd58igunbzatr>  Added: 03/03/21 | OpenSAFELY  Dementia (Complete)  <https://codelists.opensafely.org/codelist/opensafely/dementia-complete/48c76cf8/>  Added: 04/03/21 |  |
| Chronic Kidney Disease stage 5 (ckd5) | Caliber  End stage renal disease  <https://portal.caliberresearch.org/phenotypes/kuan-esrd-656rd4trga4b7ghmajzazt>  Added: 09/04/21 | OpenSAFELY  Chronic Kidney Disease  <https://codelists.opensafely.org/codelist/opensafely/chronic-kidney-disease/2020-04-14/>  Added: 02/03/21 | \*Classification based on egfr\_ckdepi also given in Caliber  \*OS list uses codes indicating end stage renal disease, dialysis or kidney transplant (not all stages) |
| Ischaemic Heart Disease (ihd) | Caliber  Coronary heart disease not otherwise specified  <https://portal.caliberresearch.org/phenotypes/kuan-chd-nos-u66rc5otddejcbdzi2hj8k>  Added 12/04/21 |  | \*also included some of the codes that were dropped from the angina/ myocardial infarction/ heart failure lists |
| Revascularisation (revasc) | Sub set of codes from angina list (as above) | Table 3: Read codes used to identify the presence of coronary artery disease, from paper ‘Sodium-Glucose Co-transporter 2 (SGLT2) Inhibitor: Comparing Trial Data and Real-World Use’, 2017  <https://link.springer.com/article/10.1007/s13300-017-0254-7#Sec11>  Accessed 12/04/21  \*first term in table 3 ‘Double coronary vessel disease’ was excluded |  |
| Solid organ transplant  (solidorgantransplant) | Manchester clinical codes (ClinicalCodes.org)  Transplant  <https://clinicalcodes.rss.mhs.man.ac.uk/medcodes/article/34/codelist/res34-transplant/>  Added: 09/03/21 | OpenSAFELY  Solid Organ Transplantation  <https://codelists.opensafely.org/codelist/opensafely/solid-organ-transplantation/2020-04-10/>  Added: 17/03/21 | \*need to determine whether Manchester code list is Read 2 or 3 |
| Other neurological conditions  (otherneuroconditions) | Caliber  Cerebral palsy  <https://portal.caliberresearch.org/phenotypes/kuan-cerebral-palsy-lowh6jee99hfyv6wwxwa8j>  Added 29/03/21  Motor neuron disease  <https://portal.caliberresearch.org/phenotypes/kuan-mnd-vjkmbencljgwmfxkdfutt8>  Added 29/03/21  Multiple sclerosis  <https://portal.caliberresearch.org/phenotypes/kuan-ms-o3phknpsjohi4ewuwrqknh>  Added 29/03/21  Myasthenia gravis  <https://portal.caliberresearch.org/phenotypes/kuan-myasthenia-7swrullqj4xm6gztfztag3>  Added 29/03/21  Parkinson’s disease  <https://portal.caliberresearch.org/phenotypes/kuan-parkinsons-3wekgjs8prps7dr3emae4l>  Added 29/03/21  Hemiplegia for Charlson index (primary care)  <https://www.caliberresearch.org/portal/show/hemiplegia_charlson_gprd>  Added 29/03/21 | OpenSAFELY  Other neurological conditions  <https://codelists.opensafely.org/codelist/opensafely/other-neurological-conditions/2020-06-02/>  Added 17/03/21 | \*Caliber does not have lists for muscular dystrophy and Huntington’s disease which feature in the openSAFELY list |
| Cancer | Cancer read codes from the NORMA study, sent by Luke Mounce  Added 30/09/21 |  | \*Split these into a haematological cancer list and a solid cancer list  \*cross referenced using Andy’s malignancies read code list and added any extra codes to this list |
| Foot infections and ulcers | OpenCodelists  Foot ulcer or infection or ischaemia <https://www.opencodelists.org/codelist/nhsd-primary-care-domain-refsets/footulcerinfectisch_cod/20250627/>  Added 07/08/25 | OpenCodelists  Skin and soft tissue infections  <https://www.opencodelists.org/codelist/ukhsa/skin-and-soft-tissue-infections/2dfc111b/#full-list>  Added 07/08/25  \*Kept only codes from this list with “foot” “heel” or “toe” in the description. Excluded codes that weren’t specific enough to feet or actually indicated the absence of foot infection | \*Used this article: <https://pmc.ncbi.nlm.nih.gov/articles/PMC2914721/> as a reference for what should be included, such as adding extra codes for paronychia |

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| **Complication** | **Codelist 1** | **Codelist 2** | **Notes** |
| Neuropathy  (neuropathy) | Caliber  Complications of diabetes (primary care)  <https://www.caliberresearch.org/portal/show/diabcomp_gprd>  \*kept only codes from neurological complications category (2)  Added: 03/03/21  Diabetic neurological complications  <https://portal.caliberresearch.org/phenotypes/kuan-dm-neuro-tbatltjsibhrbremjqskuj>  Added: 03/03/21  Peripheral neuropathies (excluding cranial nerve and carpal tunnel syndromes)  <https://portal.caliberresearch.org/phenotypes/kuan-periph-neuro-ezrssl9ryypafk67puln56>  Added: 05/03/21 | Manchester clinical codes (ClinicalCodes.org)  Microvascular complications  <https://clinicalcodes.rss.mhs.man.ac.uk/medcodes/article/72/codelist/res72-microvascular-complications/>  \*kept only codes from neuropathy category  Added: 05/03/21 | \*Research article from codelist 2:  Cardiovascular Risk and Risk Factor Management in Type 2 Diabetes: A Population-Based Cohort Study Assessing Sex Disparities  \*need to determine whether Manchester code list is Read 2 or 3  \*added some extra qof codes |
| Retinopathy  (retinopathy) | Caliber  Complications of diabetes (primary care)  <https://www.caliberresearch.org/portal/show/diabcomp_gprd>  \*kept only codes from retinopathy categories (4,5,6,7,8,9)  Added: 03/03/21  Diabetic ophthalmic complications  <https://portal.caliberresearch.org/phenotypes/kuan-diab-eye-gkfgm8qsdkpabsxux6ted3>  Added: 03/03/21 | Manchester clinical codes (ClinicalCodes.org)  Microvascular complications  <https://clinicalcodes.rss.mhs.man.ac.uk/medcodes/article/72/codelist/res72-microvascular-complications/>  \*kept only codes from retinopathy category  Added: 05/03/21 | \*Research article from codelist 2:  Cardiovascular Risk and Risk Factor Management in Type 2 Diabetes: A Population-Based Cohort Study Assessing Sex Disparities  \*need to determine whether Manchester code list is Read 2 or 3  \*Updated retinopathy read code list to include some extra codes provided by Katie/ RCGP list |
| Nephropathy  (nephropathy) | Caliber  Complications of diabetes (primary care)  <https://www.caliberresearch.org/portal/show/diabcomp_gprd>  \*kept only codes for nephropathy category (1)  Added: 03/03/21 | Manchester clinical codes (ClinicalCodes.org)  Diabetes  <https://clinicalcodes.rss.mhs.man.ac.uk/medcodes/article/7/codelist/diabetes/>  \*manually selected nephropathy diabetes complication codes  Added:30/04/21 | \*need to determine whether Manchester code list is Read 2 or 3  \*Research article from codelist 2: Can analyses of electronic patient records be independently and externally validated? The effect of statins on the mortality of patients with Ischaemic heart disease: a cohort study with nested case-control analysis |

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| **Biomarker** | **Codelist 1** | **Codelist 2** | **Notes** |
| BMI | RCGP  BMI read code list (BMI\_readcodes\_RCGP)  Added 22/04/21 |  |  |
| BMI (SNOMED) | BHF snomed code list  Added 08/04/21 | Cambridge  <https://www.phpc.cam.ac.uk/pcu/research/research-groups/crmh/cprd_cam/codelists/v10-qofaurum/>  Body mass index (BMI) codes (BMI\_COD)  Added 21/04/21 |  |
| Blood pressure | RCGP  RCGP lab tests (RCGP\_labtests)  \*blood pressure table taken from labtests  (bloodpressure\_RCGP)  Added 27/04/21 |  |  |
| Blood pressure (SNOMED) |  | Cambridge  <https://www.phpc.cam.ac.uk/pcu/research/research-groups/crmh/cprd_cam/codelists/v10-qofaurum/>  Blood pressure (BP) recording codes (BP\_COD)  Added 30/04/21 | \*Cambridge list manually split into systolic and diastolic codes to use in our DBP and SBP snomed code lists |
| Height | Added 27/04/21\*\* |  |  |
| Weight | Added 27/04/21\*\* |  |  |
| Cholesterol | RCGP  RCGP lab tests  (RCGP\_labtests)  \*cholesterol table from lab tests (cholesterol\_RCGP)  Added 27/04/21 |  |  |

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| **Lifestyle feature** | **Codelist 1** | **Codelist 2** | **Notes** |
| Ethnicity (med codes) | LSHTM  Ethnicity CPRD Aurum  (ethnicity\_cprdaurum\_lshtm)  Added 16/04/21 |  | \*After cross-referencing, lists available from Caliber (<https://www.caliberresearch.org/portal/show/ethnic_gprd>) and OpenSAFELY (<https://codelists.opensafely.org/codelist/opensafely/ethnicity/2020-04-27/>) do not have any added value above LSHTM CPRD Aurum list  \*This list includes med codes and so don’t need to generate any ethnicity lists- use this list as is |
| Language | Added 10/06/21\*\* |  |  |
| Alcohol | Added 30/03/21\*\* |  |  |
| Smoking | Added 31/03/21\*\* |  |  |

\*\*codes used in Andy’s previous work

**Infection outcomes:**

COVID-19

Influenza

Pneumonia

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| **Infections** | **Codelist 1** | **Codelist 2** | **Notes** |
| COVID |  |  |  |
| COVID (ICD-10) | Just U07.1 and U07.2 |  |  |
| Flu | LSHTM Data compass  Codelists for: "Ethnic differences in the incidence of clinically diagnosed influenza: an England population-based cohort study 2008-2018"  <https://datacompass.lshtm.ac.uk/id/eprint/2102/>  ari\_aurum\_mar20 |  | \*Aurum medcodes  \*filtered list for ari\_flu =1 |
| Flu (ICD-10) |  |  |  |
| Pneumonia | LSHTM Data compass  (as before)  ari\_aurum\_mar20 |  | \*Aurum medcodes  \*filtered list for ari\_pneumo =1 |
| Pneumonia (ICD-10) |  |  |  |
| Flu vaccine (medcodes) | LSHTM Data compass  (as before)  fluvacc\_medcodes\_aurum\_mar20 |  |  |
| Flu vaccine (prodcodes) | LSHTM Data compass  (as before)  fluvacc\_medcodes\_aurum\_mar20 |  |  |
| Pneumococcal vaccine (med codes) | LSHTM Data compass  (as before)  ppv\_medcodes\_aurum\_mar20 |  |  |
| Pneumococcal vaccine (prodcodes) | LSHTM Data compass  (as before)  ppv\_prodcodes\_aurum\_mar20 |  |  |