

246105001

704647008

1251554004

258734002

420246001

72320100000105

257974004

421829000

80586004

308557000

Milan Wiedemann
Researcher



NUFFIELD DEPARTMENT OF
PRIMARY CARE
HEALTH SCIENCES

246105001	Presentation (attribute)
704647008	Is about (attribute)
1251554004	Medical coding (qualifier value)
258734002	counts (qualifier value)
420246001	At - dosing instruction fragment (qualifier value)
72320100000105	National Health Service (qualifier value)
257974004	Upper case Roman letter R (qualifier value)
421829000	And - dosing instruction fragment (qualifier value)
80586004	Genus Python (organism)
308557000	Meetings and conferences (procedure)

OpenCodeCounts

Arina Tamborska, Rose Higgins, Yamina Boukari, Viveck Kingsley, Lola Ojedele,
Kunle Oreagba, Jon Massey, Andrea Schaffer, Amelia Green, William Hulme,
Brian MacKenna, Helen J Curtis, Louis Fisher, **Milan Wiedemann**

RPySOC 2025, Thu 13th Nov



BENNETT
INSTITUTE
FOR APPLIED
DATA SCIENCE



NUFFIELD DEPARTMENT OF
PRIMARY CARE
HEALTH SCIENCES



OpenSAFELY

Clinical Code Usage in Primary Care

277833004 Anxiety about fainting (finding)

277826004 Anxiety about sweating (finding)

351861000000106 Stranger anxiety (disorder)

Clinical Code Usage in Primary Care

277833004 Anxiety about fainting (finding)

277826004 Anxiety about sweating (finding)

351861000000106 Stranger anxiety (disorder)

836571000000106 GAD-2 Score (observable entity)

836561000000104 Assessment using GAD-2 scale (procedure)

Clinical Code Usage in Primary Care

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836561000000104 Assessment using GAD-2 scale (procedure)

228560001 Anxiety management training (procedure)

1053791000000108 Signposting to IAPT service (procedure)

* IAPT = Improving Access to Psychological Therapies (now known as NHS Talking Therapies).

Clinical Code Usage in Primary Care

277833004 Anxiety about fainting (finding)

277826004 Anxiety about sweating (finding)

351861000000106 Stranger anxiety (disorder)

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228560001 Anxiety management training (procedure)

1053791000000108 Signposting to IAPT service (procedure)

1037391000000102 Anxiety resolved (finding)

* IAPT = Improving Access to Psychological Therapies (now known as NHS Talking Therapies).

Clinical Code Usage in Primary Care

277833004	Anxiety about fainting (finding)	540
277826004	Anxiety about sweating (finding)	490
351861000000106	Stranger anxiety (disorder)	610
836571000000106	GAD-2 Score (observable entity)	1,136,480
836561000000104	Assessment using GAD-2 scale (procedure)	5,950
228560001	Anxiety management training (procedure)	22,480
1053791000000108	Signposting to IAPT service (procedure)	1,043,310
1037391000000102	Anxiety resolved (finding)	3,755

* IAPT = Improving Access to Psychological Therapies (now known as NHS Talking Therapies). Counts are total usage from August 2011 to July 2024.

NHS Digital >  > [MI] SNOMED Code Usage in Primary Care > [MI] SNOMED Code Usage in Primary Care, 2024-25

Publication, Part of [MI] SNOMED Code Usage in Primary Care

[MI] SNOMED Code Usage in Primary Care, 2024-25

Publication Date: 18 Sep 2025

Geographic Coverage: England

Date Range: 01 Aug 2024 to 31 Jul 2025

[Download this page as a PDF](#)



Page contents

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[Summary](#)

[Resources](#)

Summary

The following files show the number of times each listed SNOMED code was added to a GP patient record within the period 1 Aug 2024 to 31 July 2025, aggregated at England level. The data is available in .txt and .xlsx formats.

Available
from
2011-12

opencodecounts

The `opencodecounts` R package provides easy access to yearly summaries of clinical code usage in England. The package makes NHS England's published datasets available in R and an interactive online tool, covering SNOMED CT codes in primary care and ICD-10/OPCS-4 codes in secondary care.

You can launch the interactive Shiny app by clicking on [Launch Shiny app](#). For work in R, all available functions (including datasets) are documented in the [Reference](#) section.

Installation

You can install the `opencodecounts` package in R with:

```
remotes::install_github("bennettoxford/opencodecounts")
```

How-to guides

- [How to use the Shiny app](#)
- [How to use the R package](#)
- [How to extract semantic tags from SNOMED CT descriptions](#)
- [Learn about the available datasets](#)

Data sources

The original data is available from NHS Digital at:

- [SNOMED Code Usage in Primary Care](#)
- [ICD-10 and OPCS-4 Code Usage in Inpatient Secondary Care](#)

Search for

Links

[Browse source code](#)

[Report a bug](#)

License

[Full license](#)

[MIT + file LICENSE](#)

Citation

[Citing opencodecounts](#)

Developers

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Author, maintainer

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Author

Lola Ojedele

Author

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Wellcome Trust



Funder



Follow

atamborska Arina Tamborska · she/her

-o Committed to this repository



HelenCEBM

Member of bennettoxford/ebmdata...

Member of Bennett Institute for Applied Data Scien...



kayleepn Kaylee Poon · she/her

MSc student at @bennettoxford

Member of bennettoxford/ebmdata...



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Follow

rose-higgins Rose Higgins

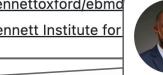
Member of bennettoxford/ebmdata...

Member of Bennett Institute for Applied Data Scien...



Ldhgit1 Kunle Oreagba

-o Committed to this repository



Follow

Lola-Audrey Lola O

-o Committed to this repository



LFISHER7 Louis Fisher

Health Data Scientist

Member of bennettoxford/ebmdata...

Member of Bennett Institute for Applied Data Scien...

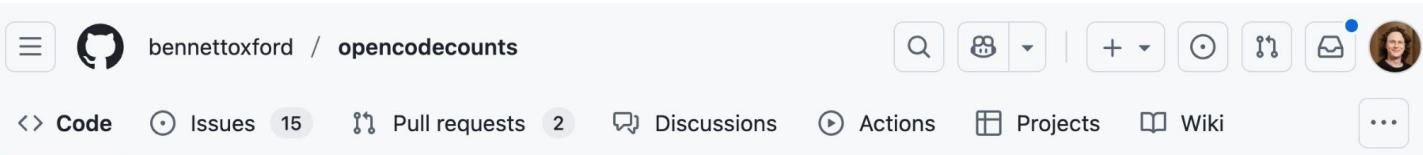


Follow

```
> library(opencodecounts)
> snomed_usage
```

```
> library(opencodecounts)
> snomed_usage

# A tibble: 1,523,967 × 7
  start_date end_date    snomed_code description    usage
  <date>     <date>      <chr>        <chr>       <int>
1 2023-08-01 2024-07-31 27999100000... Short mess... 4.41e8
2 2023-08-01 2024-07-31 184103008     Patient te... 1.91e8
3 2023-08-01 2024-07-31 428481002     Patient mo... 1.16e8
4 2023-08-01 2024-07-31 423876004     Clinical d... 7.81e7
5 2023-08-01 2024-07-31 72313002      Systolic a... 6.87e7
```



main · opencodecounts / data-raw / snomed_code_usage.R

Go to file

atamborska Change small numbers supression (#89) ✓

7489b5c · 5 months ago

121 lines (105 loc) · 6.28 KB

Code

Blame



```
1 # This script loads all available code usage data from files.digital.nhs.uk
2 # and combines the files into two files:
3 # (1) snomed_code_usage: yearly summary of code usage (no code description)
4 # (2) snomed_code_dict: code descriptions for each year (as there are sometimes small differences across years
5
6 library(tidyverse)
7 library(janitor)
8 library(here)
9
10 url_start <- "https://files.digital.nhs.uk/"
11
12 snomed_code_usage_urls <- list(
13   "2023to2024" = paste0(url_start, "B8/7D8335/SNOMED_code_usage_2023-24.txt"),
14   "2022to2023" = paste0(url_start, "09/E1218D/SNOMED_code_usage_2022-23.txt"),
15   "2021to2022" = paste0(url_start, "71/6C02F5/SNOMED_code_usage_2021-22.txt"),
16   "2020to2021" = paste0(url_start, "8A/09BBE6/SNOMED_code_usage_2020-21.txt"),
```



Add 2024-25 SNOMED CT data #140

Changes from all commits ▾ File filter ▾ Conversations ▾ ⚙

Ask Copilot ▾

Review in codespace

Review changes ▾

▼ ⌂ 4 R/data.R ⌂

```
3   3
4   4  #' Yearly SNOMED CT Code Usage in Primary Care in England
5   5  '#'
6 - #' Yearly summary of SNOMED CT code usage from 1st August 2011 to 31st July 2023.
6 + #' Yearly summary of SNOMED CT code usage from 1st August 2011 to 31st July 2025.
7   7  #' The variables in this dataset include:
8 - #' @format A data frame with 1,366,513 rows and 6 columns:
8 + #' @format A data frame with 1,682,534 rows and 7 columns:
9   9  #' \describe{
10  10  #'   \item{start_date}{Start date of code usage count}
11  11  #'   \item{end_date}{End date of code usage count}
```

↓

▼ ⌂ 18 data-raw/snomed_code_usage.R ⌂

```
↑ @@ -10,6 +10,7 @@ library(here)
10  10 url_start <- "https://files.digital.nhs.uk/"
11  11
12  12 snomed_code_usage_urls <- list(
13 + "2024to2025" = paste0(url_start, "9F/527A2C/SNOMED_code_usage_2024-25.txt"),
13  14 "2023to2024" = paste0(url_start, "B8/7D8335/SNOMED_code_usage_2023-24.txt"),
14  15 "2022to2023" = paste0(url_start, "09/E1218D/SNOMED_code_usage_2022-23.txt"),
15  16 "2021to2022" = paste0(url_start, "71/6C02F5/SNOMED_code_usage_2021-22.txt"),
↓
↑ @@ -48,7 +49,8 @@ snomed_code_usage_urls <- list(
```

```
> library(opencodecounts)
> run_app()
```



Analyse More

Select data

Dataset ⓘ

- General practice (SNOMED CT)
- Hospital admissions (ICD-10)
- Hospital admissions (OPCS-4)

Date range ⓘ

2012 2024

Select codes

Search

Load OpenCodelist

Specific code(s) ⓘ

Description ⓘ

anxiety

Reset code selection



Selected codes with usage data in England

185



Total number of recorded events in England

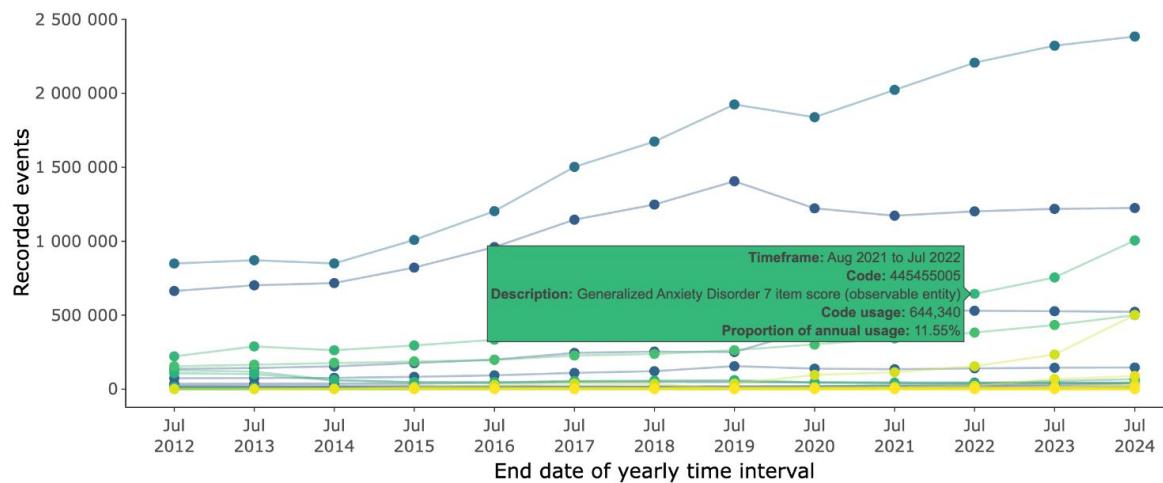
55,004,875

Trends over time

Usage table

Selected codes

Show individual codes ⓘ





Analyse

More

Select data

Dataset ⓘ

- General practice (SNOMED CT)
- Hospital admissions (ICD-10)
- Hospital admissions (OPCS-4)

Date range ⓘ

2012 2024

Select codes

Search

Load OpenCodelist

Specific code(s) ⓘ

Description ⓘ

anxiety

Reset code selection

Selected codes with usage data in England

185

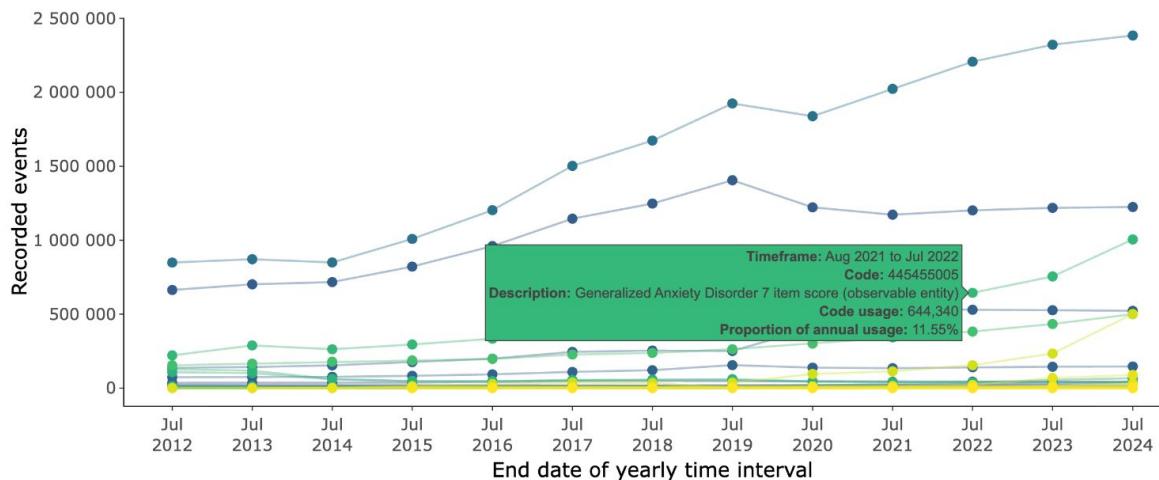
Total number of recorded events in England

55,004,875

Trends over time

Usage table

Selected codes

 Show individual codes ⓘ



Analyse

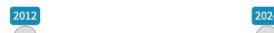
More

Select data

Dataset ⓘ

- General practice (SNOMED CT)
- Hospital admissions (ICD-10)
- Hospital admissions (OPCS-4)

Date range ⓘ



Select codes

Search

Load OpenCodelist

Specific code(s) ⓘ

Description ⓘ

anxiety

Reset code selection



Selected codes with usage data in England

185

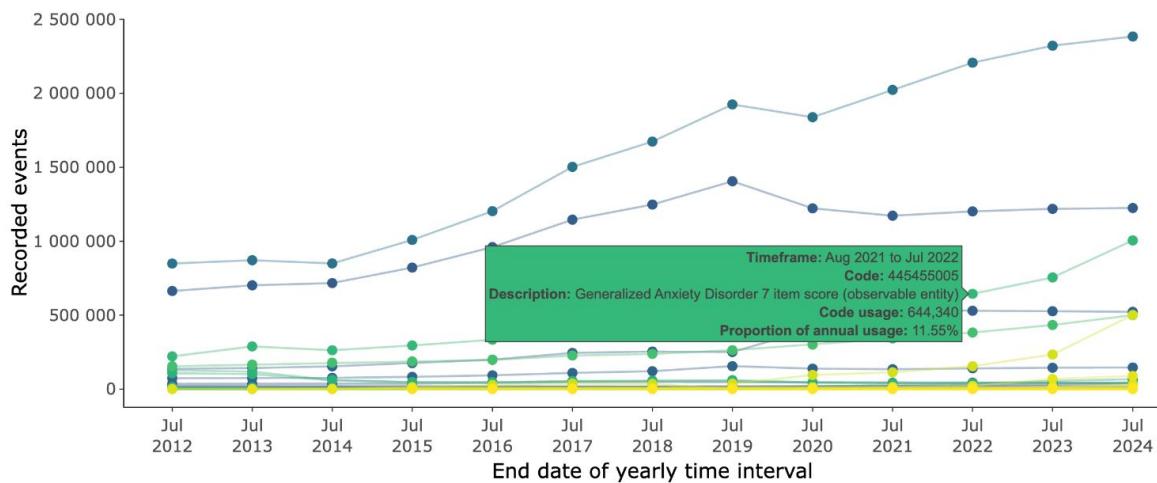
Total number of recorded events in England

55,004,875

Trends over time

Usage table

Selected codes

 Show individual codes ⓘ

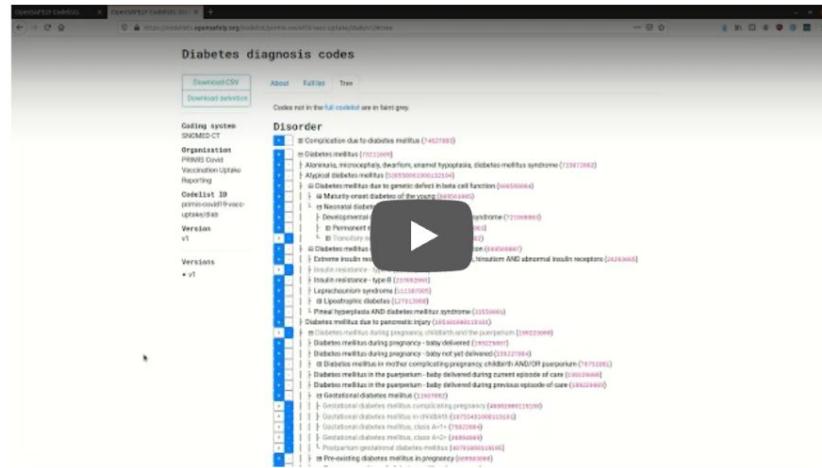
OpenCodelists

Welcome to OpenCodelists, created by [OpenSAFELY](#) for creating and sharing codelists.

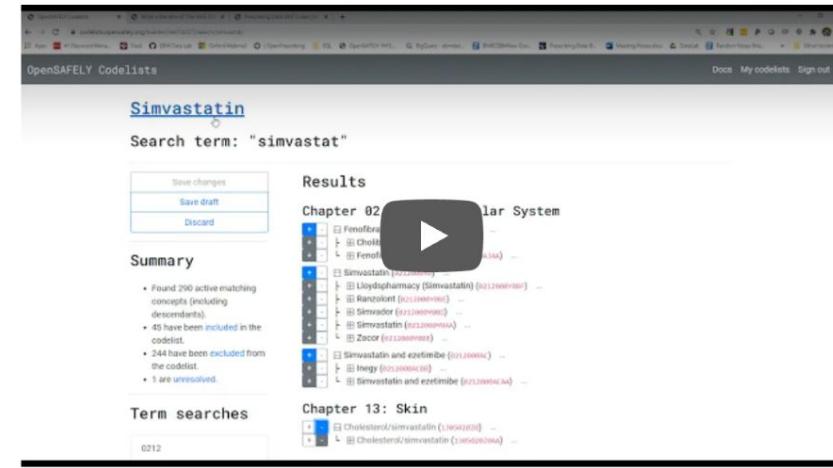
Anybody can also use this tool to create and share codelists. To get started, take a look at the [documentation](#) or watch the videos.

If you would like to publish codelists on behalf of an organisation, please [get in touch](#).

Below, you'll find all the codelists that have been used in [OpenSAFELY research](#) to date.



The screenshot shows a web-based application for managing codelists. At the top, there's a navigation bar with links for 'About', 'Full list', and 'Tree'. Below this, a section titled 'Diabetes diagnosis codes' is displayed. It includes a 'Coding system' dropdown set to 'SNICMED-CT', a 'Organisation' dropdown set to 'PRIMIS Direct', and a 'Reporting' dropdown set to 'primis-owid-primis'. A 'Codelist ID' field contains 'primis-owid-primis'. A 'Version' dropdown is set to 'v1'. A 'Versions' link is visible. On the right, a large tree view lists various diabetes-related codes under the heading 'Disorder'. Some nodes are expanded, showing more detailed information. A video player icon is overlaid on the left side of the tree view.



The screenshot shows a search results page for 'simvastatin' on the OpenSAFELY Codelists platform. The search term 'simvastatin' is entered in the search bar. Below it, there are three buttons: 'Save changes', 'Save draft', and 'Discard'. The results section is titled 'Results' and shows a list of matching concepts. It includes sections for 'Chapter 02: Clinical System' and 'Chapter 13: Skin'. Each result entry has a small video player icon next to it. A summary section provides details about the search results, mentioning 290 active matching concepts, 45 included in the codelist, 244 excluded, and 1 unresolved. A 'Term searches' section is also present.

All codelists



Analyse More

Select data

Dataset ⓘ

- General practice (SNOMED CT)
- Hospital admissions (ICD-10)
- Hospital admissions (OPCS-4)

Date range ⓘ



Select codes

Search Load OpenCodelist

Codelist URL ⓘ

Anxiety diagnostic codes						
Coding system	Coding system release	Organisation	NHSOS Primary Care Domains	Codelist ID	Code domain-primary-care-domain-reflection_code	Version Tag
SNOMED CT (UK Clinical Edition)	41.0.0			76bb674b	rnsd-primary-care-domain-reflection_code	20250912
						Number of codes included
						280
Download CSV						
Download definition						
Clone this codelist						
Versions						
28258912						Published
Created: 23 Oct 2025 at 14:34						
28258627						Published
Created: 18 Jul 2025 at 07:22						
28241285						Published
Created: 24 Dec 2024 at 12:42						
About	Full list	Tree				
Give us feedback!						
Description						

Selected codes with usage data in England

132

Total number of recorded events in England

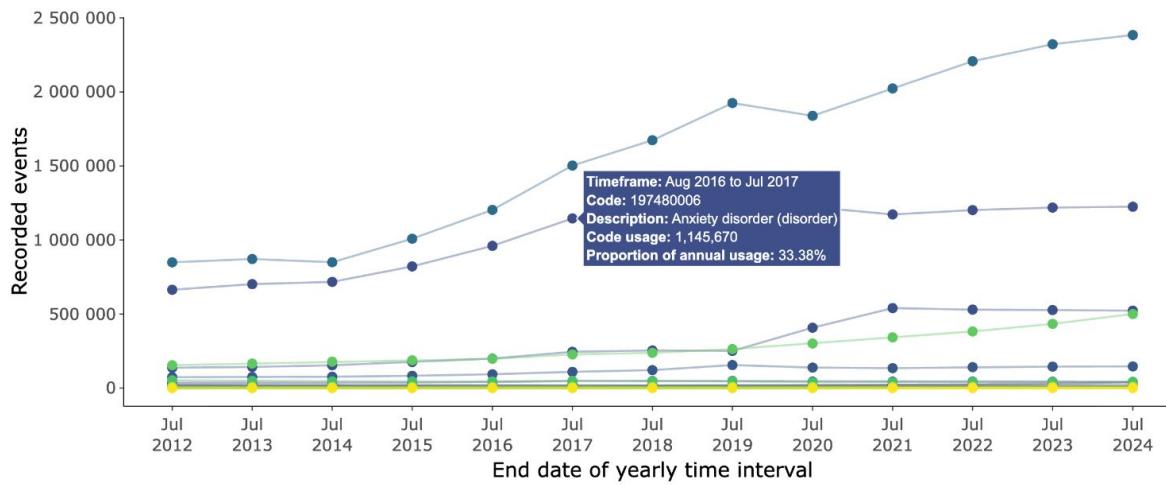
46,123,330

Trends over time

Usage table

Selected codes

Show individual codes ⓘ



> <https://bennettoxford.github.io/mental-health-open-data/>

Codelist development for anxiety disorders and depression diagnoses

Overview

This report assesses the suitability of NHS England Primary Care Domain Reference Sets for identifying diagnoses of common mental health conditions, specifically anxiety diagnoses and depression, and compares them with codelists constructed to match the definitions used in the [Adult Psychiatric Morbidity Survey: Survey of Mental Health and Wellbeing, England, 2023/4](#).

The analysis proceeds in two stages. First, the coverage and usage of the NHS Refsets are assessed using data from the NHS England SNOMED Code Usage in Primary Care dataset. Second, condition-specific codelists are constructed to mirror APMS diagnostic definitions, and usage patterns of these lists are evaluated over time.

NHS Primary Care Refsets

The [Primary Care Domain Refset](#) contain codelist for *anxiety* and *depression* diagnostic ([anx_cod](#), [depr_cod](#)) and resolved ([anx_res_cod](#), [dep_res_cod](#)) codes.

Diagnosis

Analysis of codelists

The below figure shows the coding of anxiety disorders and depression diagnoses, as specified in the NHS Primary Care Domain Refsets ([anx_cod](#), [depr_cod](#)).

Table of contents

[Overview](#)

NHS Primary Care Refsets

APM Survey

Other Links

[opencodecounts R pkg](#)

[SNOMED Code Usage](#)

[AMPS 2023/4](#)

```
> citation(opencodecounts)
```

 Follow this preprint

OpenCodeCounts: An open-access, interactive online tool and R package for analysing clinical code usage in England

Arina A Tamborska, Rose Higgins, Yamina Boukari, Viveck Kingsley, Lola Ojedele, Kunle Oreagba, Jon Massey, Andrea Schaffer, Amelia Green, William Hulme, Brian MacKenna, Helen J Curtis, Louis Fisher, Milan Wiedemann
doi: <https://doi.org/10.1101/2025.10.14.25338005>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

Abstract

Full Text

Info/History

Metrics

 Preview PDF

Abstract

Clinical codes are unique identifiers used in electronic health records to document specific information, such as diagnoses, procedures or medications. Because of their structured and systematic nature, they are often used for research, audit and service evaluation. Knowing how frequently certain codes are recorded can be invaluable in planning such work. For example, not all events are recorded with equal frequency, so knowing the usage of specific codes helps determine research feasibility.

 Follow this preprint

The coding of migration status in English primary care from 2011 to 2024: a pilot use of Open Code Counts

Yamina Boukari, Lucinda Hiam, Jamie Scuffell, Arina Tamborska, Rachel Burns, Milan Wiedemann, Ines Campos-Matos, Robert W Aldridge, Sally Hargreaves, Neha Pathak, Peter Walsh, Ben Goldacre, William Hulme
doi: <https://doi.org/10.1101/2025.07.24.25332167>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

Abstract

Full Text

Info/History

Metrics

 Preview PDF

Abstract

Background The migration status of the 9.8 million migrants living in England is not systematically recorded in primary care electronic health records (EHRs). Codelist approaches enable us to create cohorts of individuals who have had a predefined, optional migration-related code (e.g. "refugee") added to their EHR.

Aims We aimed to explore the use of migration-related SNOMED CT codes to inform future research using primary care data.

Design and Setting We used our Open Code Counts tool and R package to explore data published by NHS England on SNOMED CT code usage in English primary care.

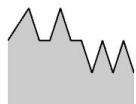
* NHS England also publishes SNOMED code usage metadata with more guidance and context.

**SNOMED CT code
descriptions
including “rain”**



Selected codes with usage data in England

5



Total number of recorded events in England

115

Trends over time

Usage table

Selected codes

Download CSV

Show 10 entries

Search:

Code	Description	Usage	Percentage
276358008	Sees rainbows (finding)	60	52.174%
217725005	Accident caused by brief heavy rainfall (event)	25	21.739%
217733006	Accident caused by continuing torrential rain (event)	20	17.391%
242553007	Accident caused by rainfall (event)	5	4.348%
4028301000001103	2002-02-01 raincoat	5	4.348%

Showing 1 to 5 of 5 entries

PREVIOUS

1

NEXT



Thank you!

OpenCodeCounts GitHub repository

> <https://github.com/bennettoxford/opencodecounts>

OpenCodeCounts documentation, including how-to guides

> <https://bennettoxford.github.io/opencodecounts>

Analysis of mental health related SNOMED CT codes

> <https://github.com/bennettoxford/mental-health-open-data>



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PRIMARY CARE
HEALTH SCIENCES

