Data Profile: Hospital Episode Statistics Ethnicity Data Product – Preventable hospitalisation

Introduction

Accurate recording of ethnicity in electronic healthcare records is important for the monitoring of health inequalities. Yet until the late 1990s, ethnicity information was absent in Hospital Episode Statistics (HES) from more than half of records of patients who received inpatient care in England.

To address the gap in the completeness of ethnicity data, CDRC worked with NHS Digital to enhance HES data collected between 1999/00 and 2013/14 with name-based ethnicity imputation using the CDRC Ethnicity Estimator software (EE).

Details about the completeness of ethnicity records and the prediction success of the EE software for different ethnic groups over time and across regions can be found in the accompanying documentation for the CDRC HES Ethnicity data products. Two data products were produced in conjunction with this project: 1) Preventable hospitalisation admission by ethnic group; and 2) Hospital admission for major disease categories as defined in the Global Burden of Disease project.

This document concerns preventable hospitalisation admission by ethnic group.

Emergency hospital admissions are distressing for patients, associated with poorer long-term outcomes, and are costly to the healthcare system. Indicators for admissions considered preventable have been defined and known as ambulatory care sensitive conditions (ACSC). ACSC admissions have been associated with patients under the age 5 years, the elderly, deprivation, and ethnicity. NHS monitors ACSC in the general population and saw a 40% rise in 2001-2011. Studies in US, New Zealand, and Scotland have found higher risk of ACSC admission for many ethnic minorities compared to the White majority populations.

This is to our knowledge the first study of ethnic inequalities in ACSC in England. The dataset contains age- and sex-standardised hospital admission incidence by ethnic group and local authority district for acute ambulatory care sensitive conditions (acute, chronic, and vaccine-preventable combined).

Scale and Extent

Field	Value
Data Provider	NHS Digital
Analytical Units	Local authority districts
Data Format	Csv
Temporal Extent	2009/10-2013/14
Geographical Extent	England
Variables	49
Observations	326

Citation Information

The following statement should be included when citing the use of this dataset:

"The data for this research have been provided by the Consumer Data Research Centre, an ESRC Data Investment, under project ID CDRC [Project Number], ES/L011840/1; ES/L011891/1"

Data Classification and Access Summary

These data are classified as Safeguarded and are available only upon approved application. To make an initial application, please visit: https://www.cdrc.ac.uk/data-services/using-our-data/

Content

Age- and sex-standardised hospital admission incidence per 100,000 population by ethnic group and local authority district for acute ambulatory care sensitive conditions (acute, chronic, and vaccine-preventable combined). The hospital admission data were enhanced

with ethnicity coding of participants' names using the Ethnicity Estimator (EE) software.

Novelty

The dataset on preventable hospital admissions by ethnic group is novel in a few different aspects. First, it is based on a version of HES enhanced with surname imputation of ethnicity. Second, it is a result of the first study on ethnic inequalities in preventable hospitalisation in England. Third, it provides admission statistics by local authority district.

Quality, Representation and Bias

HES has near-complete coverage of NHS commissioned hospital admissions in England. Coding of diagnoses may vary in consistency but has been validated for research and auditing purposes in an earlier study.

As a limitation, it should be noted that ethnicity is a complex concept encompassing biological, cultural, and subjective aspects. Variation in prediction success of name-based ethnicity classification can therefore arise for different reasons including individuals' sense of belonging and resulting choice of ethnic group, socio-cultural naming and name-change practices, distinctiveness of names across ethnic groups, and the extent to which the name-based classification covers different origins at a given time point, e.g. when later waves of immigration have widened the range of diasporic names in the host country since the creation of the software.

We used denominator data from Census 2011 the most complete dataset on ethnicity of the residential population in England. The census contains self-reported ethnicity. HES draws on the central NHS patient register with self-reported ethnicity. In this dataset we used surname imputation for the 5.6% of patients that did not have an ethnicity record in 2009/10-2013/14. The prediction success of the EE software is reported in the accompanying documentation.

Related Datasets

Hospital Episode Statistics Ethnicity Data Product – Hospital admission for Global Burden of Disease conditions by ethnic group.

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Data Triangulation: data sources used to establish provenance

Source	Variable	Spatial granularity of comparator	Temporal granularity of comparator	Note(s)
E.g 2011 Census of Population	e.g.Adult population count	e.g. Local Authority District	e.g. 2011	e.g. Mean adult population from Census (Consumer Register) 162,191 (148,765) S.d. of Census 20,000 (Consumer Register 28,000)
ONS	Oslaua	Local authority district (2016)	2016	Local Authority district code (2016)
HES, Census 2011	r_[ethnic group]	Local authority district (2016)	2009/10-2013/14	Age- and sex-standardised preventable hospitalisation incidence per 100,000 pop
HES, Census 2011	r_ll_[ethnic group]	Local authority district (2016)	2009/10-2013/14	Standardised incidence 95% CI lower
HES, Census 2011	r_ul_[ethnic group]	Local authority district (2016)	2009/10-2013/14	Standardised incidence 95% CI upper
HES, Census 2011	rz_[ethnic group]	Local authority district (2016)	2009/10-2013/14	z-score of r_[ethnic group] relative to national mean and SD of White British group
HES, Census 2011	rzcat_[ethnic group]	Local authority district (2016)	2009/10-2013/14	z-score categories (label): -1000 (Less than -4 SD), -4 (-4 to -2.1 SD), -2 (-2 to -1.1 SD), -1 (-1 to -0.1 SD), 0 (0-0.9 SD), 1 (1-1.9 SD), 2 (2 to 3.9 SD), 4 (4 SD and more), -999 (Low count: <20 cases)