

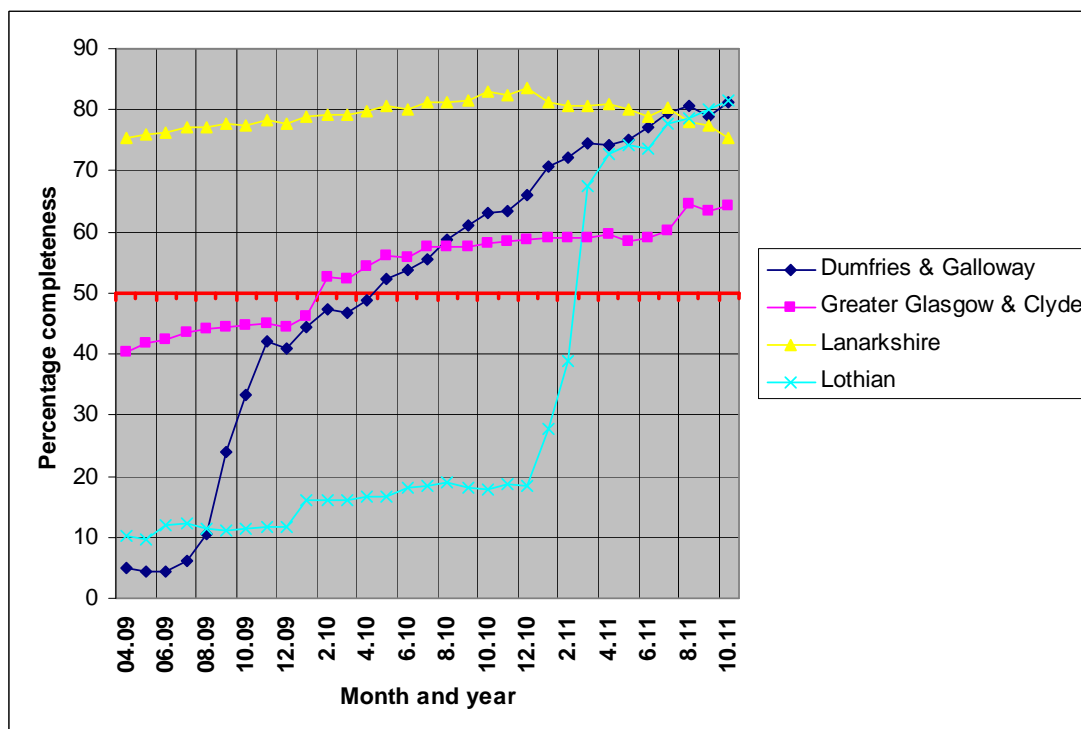
Routine hospital data on ethnicity and health – the example of Coronary Heart Disease

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Routine data on ethnicity and health are important to enable the NHS to demonstrate that it is meeting the needs of all groups equally and fairly. Ethnic group is recorded on Scottish hospital discharge (SMR01) records and the completeness of recording has improved substantially (from 20% in December 2008 to 64% in the quarter ending September 2011). However this is still not sufficient to produce reliable statistics on ethnic variations in hospital admissions for Scotland as a whole. There was, though, considerable variation between NHS Boards in completeness in the quarter ending September 2011 from 18% to 84%.⁽¹⁾ Continuing improvements in data quality need to be supported by work to demonstrate how the data collected can be used.

This page presents an exploratory analysis of routine data focussing on NHS Boards that had the highest level of data completeness. Four boards were included: Lothian, Lanarkshire, Greater Glasgow and Clyde and Dumfries and Galloway. Data were included for these boards from the point at which they achieved 50% completeness up to October 2011, the most recent data available at the time of the analysis. Levels of completeness are shown in Figure 1 and the periods included are given in the appendix.

Figure 1. Percentage completeness of ethnic group recording in SMR01 hospital inpatient and day case records, April 2009 to October 2011, by NHS Board.



The analysis examined first admissions for Coronary Heart Disease (CHD). Further information including numbers and crude rates is given in the appendix.

Figures 2 and 3 show Standardised incidence ratios for discharge for Coronary Heart Disease (CHD) indirectly standardised for age for men and women respectively. In

this figure ratios are expressed relative to White Scottish people, so that White Scottish are shown as 100.

Figure 2. Standardised incidence ratios (SIR) for CHD in men with 95% confidence intervals (Reference group White Scottish men).

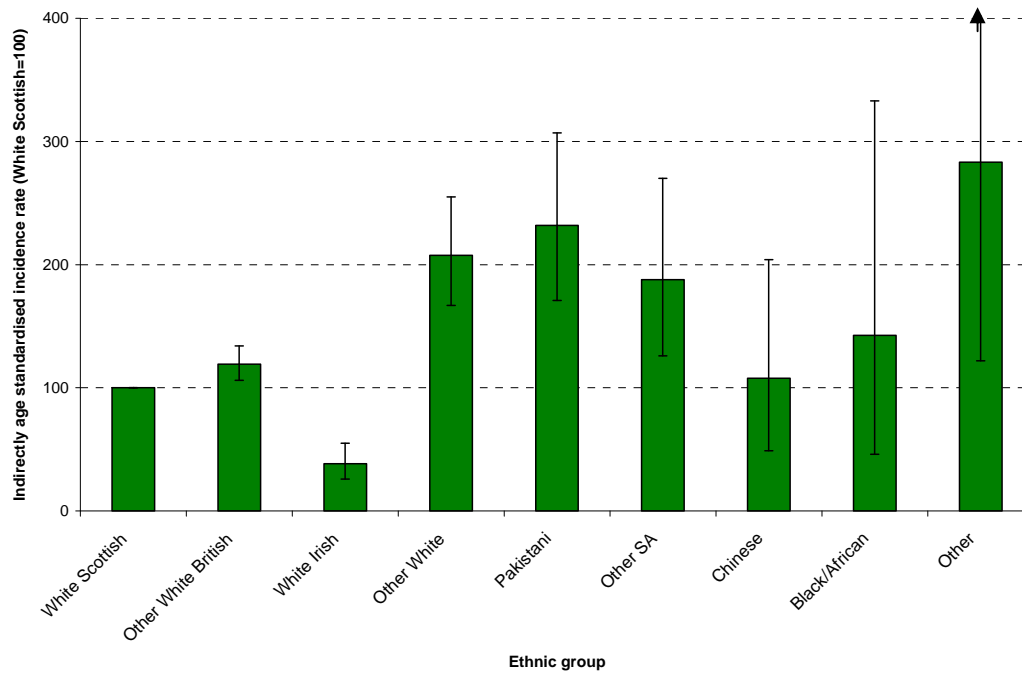
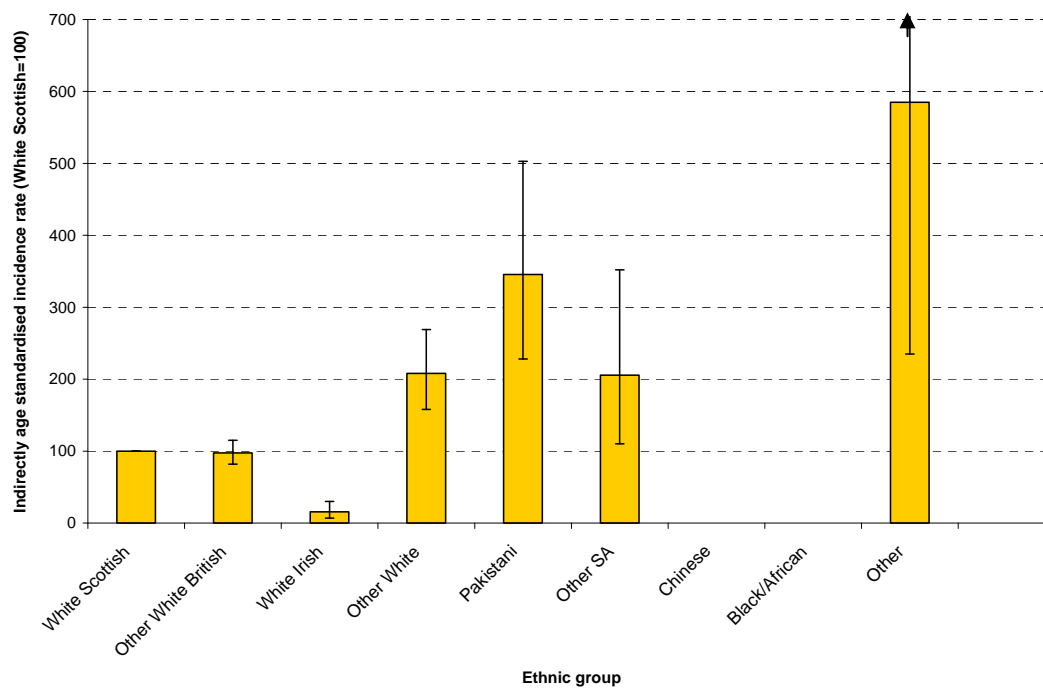


Figure 3. Standardised incidence ratios (SIR) for CHD in women with 95% confidence intervals (Reference group White Scottish women).



This analysis using routine hospital discharge data shows wide variation between ethnic groups in the risk of hospital admission for CHD. Since some ethnic groups in Scotland are much younger than average than others it is important to use age

adjusted figures to make comparisons. The pattern of variation for some groups is broadly in line with a previous project(2) that used more reliable and accurate linkage methods; particularly high risk of CHD admissions among Pakistanis and other South Asians. The high risk for Other White British group was in contrast to the finding from linkage work which suggested that risk was lower than in the Scottish population. Linkage work also found that risk for Other White males was lower than the White Scottish group. One possible explanation of the finding for the Other White group is that the population has increased substantially, generating more events than would be expected from the much smaller population counted in the 2001 Census. In interpreting these figures it is important to note that they do not include deaths, which may be the first presentation of cardiovascular disease, that the ethnicity data remains incomplete and that (in the absence of any better data) the population estimates used for denominators are based on the 2001 Census and are therefore very out of date. Despite these caveats the analysis illustrates the potential for future use of routine data on ethnicity in Scotland.

(1) Fischbacher CM. Equality and Diversity Information Programme. Worldwide web 2012; Accessed: 2012 Mar 30; Available from: URL: <http://www.isdscotland.org/Health-Topics/Equality-and-Diversity/Publications/2012-02-28/2012-02-28-EDIP-Report.pdf?35326784850>

(2) Fischbacher CM, Bhopal R, Povey C, Steiner M, Chalmers J, Mueller G, et al. Record linked retrospective cohort study of 4.6 million people exploring ethnic variations in disease: myocardial infarction in South Asians. BMC Public Health 2007;7:142.

Appendix: methods

The analysis examined first admissions for principal diagnoses of Acute Myocardial Infarction (AMI, using ICD 10 codes I21, I22) and for Coronary Heart Disease (CHD, I20-I25) and counts of Coronary Artery Bypass Grafting (CABG, using OPCS4 codes K40-K46) and Percutaneous Coronary Intervention (PCI, OPCS4 K49, K75, K50.1) procedures. For reasons of space the results presented here are only for CHD. First admissions for the time periods shown in the table below were defined as those where there had been no previous admission with the same diagnosis in the preceding 10 years. Person years at risk were estimated using 2001 populations for each ethnic group by health board multiplied by the number of years included in the analysis.

Ethnic group recording used the 14 high level categories in the 2001 Census. Due to the small number of cases these were further aggregated into 9 groups as follows: White Scottish; Other White British; White Irish; Other White (including Polish people and Gypsies/Travellers); Pakistani; Other South Asian (Indian, Bangladeshi and Other South Asian combined); Chinese; Black/African (Caribbean, African and Black combined) and Other (including Arab, Arab Scottish and Arab British). The "Mixed" group was excluded because of small numbers.

Table 1 - Time periods for which data were included in analysis

NHS Board	Period included	No of months included	Overall mean completeness (%)
Lothian	Mar 11- Oct 11	8	76
Lanarkshire	Nov 09- Oct 11	24	80
Greater Glasgow and Clyde	Feb 10- Oct 11	21	58
Dumfries and Galloway	May 10- Oct 11	18	69

Table 2 - Crude event rates (first admissions, procedures): number of events per 100,000 person years by ethnic group for those of all ages

Ethnic group	PYAR	CHD		AMI		PCI & CABG	
		events	rate	events	rate	events	rate
Male							
White Scottish	1,428,750	3,951	277	2,301	161	2,587	181
Other White							
British	79,500	283	356	142	179	168	211
White Irish	21,429	30	140	9	42	19	89
Other White	23,026	104	452	79	343	94	408
Mixed/multiple	4,337	5	115	-	-	-	-
Pakistani	20,064	52	259	31	155	38	189
Other SA	11,900	36	303	21	176	25	210
Chinese	6,981	9	129	-	-	6	86
Black/African	3,086	7	227	-	-	-	-
Other	3,724	9	242	6	161	8	215
Female							
White Scottish	1,577,448	2,639	167	1,498	95	990	63
Other White							
British	86,897	147	169	82	94	62	71
White Irish	23,206	10	43	-	-	9	39
Other White	25,553	59	231	42	164	40	157
Mixed/multiple	-	-	-	-	-	-	-
Pakistani	19,653	27	137	9	46	8	41
Other SA	10,363	16	154	4	39	7	68
Chinese	-	-	-	-	-	-	-
Black/African	-	-	-	-	-	-	-
Other	3,458	8	231	-	-	-	-

Cells based on fewer than 5 events are omitted (-)

PYAR: person-years at risk

Rates are crude rates per 100,000 person years

Crude rates are given above to reflect the actual burden of disease, and show the context for the age standardised comparisons.

Reference List

- (1) Fischbacher CM. Information Services Division, Scottish Government *Equality and Diversity Information Programme*. <http://www.isdscotland.org/Health-Topics/Equality-and-Diversity/Publications/2012-02-28/2012-02-28-EDIP-Report.pdf?35326784850> 2012 March 30, date last accessed;
- (2) Fischbacher CM, Bhopal R, Povey C, Steiner M, Chalmers J, Mueller G, et al. Record linked retrospective cohort study of 4.6 million people exploring ethnic variations in disease: myocardial infarction in South Asians. *BMC Public Health* 2007;7:142.