

# POPULATION AND MIGRATION STATISTICS COMMITTEE (SCOTLAND)

## Census Alternatives update

This paper summarizes developments since the last PAMS committee meeting. Members are invited to comment and suggest any further data sources, either national or local, or areas of work which we should seek to include in our programme of work.

## Administrative sources

**School Census.** We have completed an evaluation of 2003 and 2004 school census data against GROS population estimates at the council level. These data are now due to be used to quality assure the experimental datazone SAPEs and develop the methodology for producing SAPEs in the future.

**DVLA.** We have carried out a comparison between DVLA car registration data from 2000, 2001 and 2002 with Census data on car ownership to assess the potential of this administrative source to meet information needs now served by Census. We are also exploring possibilities for using DVLA data on driving license holders to improve the migration estimates used by GROS in the production of population estimates.

**Electoral Register.** Current regulations do not allow GROS to access the full register of electors for research purposes. We have worked with the Scotland Office to introduce amendments to the Representation of the People Regulations (governing access to the electoral register) which will give us such rights. Consultation on the proposed changes has now been completed and once approved by Parliament, the amendments will enable us to use the full register of electors to produce datazone level figures for the purposes of SNS and the production of SAPEs and household estimates by GROS.

**DWP benefits data** (Child Benefit and Super Old Persons database). Working with OCS we have recently obtained datazone level figures on child benefit recipients and benefit recipients aged 65 and over for 2001 – 2003. These data are being used for the development of new SAPEs methodology. We are also looking into setting up a project to investigate the feasibility of using benefits receipt data to improve the estimates of internal migration which GROS currently uses.

## Data linkage work

**The Scottish Longitudinal Study (SLS)** which links 1991 and 2001 census records and vital events information for about 5.5% of the Scottish population is still under development. The database is due to be launched early next year.

**The Ethnicity and Health** project led by Prof. R.Bhopal of Edinburgh University undertook a linkage between 2001 census records and the Community Health Index (CHI) in order to assign ethnicity information to the health records of the population of Scotland. The study published its main report in August (see Annex for more detail). We are now in the process of analyzing the matching success rates across key population groups in order to inform work on the development of integrated system of population statistics. Our results should be available early next year.

We have obtained a copy of the 2001 **Scottish Household Survey** records which were linked to 2001 census data as part of a project assessing patterns of non-response. We are planning to use this work to identify the potential of survey data in the context of an integrated systems of demographic statistics.

Finally, we have undertaken a review of data matching methods and tools and are working to set up an experimental project to enable GROS to develop the skills and capability required to undertake in-house data linkage for the purposes of the production of population statistics.

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**Alternative Sources**  
**GROS**

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# Scotland's health databases are missing ethnic codes. Can we fill the gap?



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## Background

There are substantial ethnic inequalities in health but there is little information on this in Scotland. The Race Relations (Amendment) Act 2000 and NHS policy require health services to show they are promoting racial equality and reducing inequalities.

Routine data sources in Scotland do not include the information needed to (a) measure health inequalities (b) assess service use (c) demonstrate compliance with policy and legislation. The Scottish executive funded a 30 month demonstration project (ending May 2005) aiming to seed health databases with ethnic codes. This poster describes the conceptual, ethical, technical and practical challenges faced, and overview the outputs. Our project focused on CHD as an example.

## Methods

We reviewed existing databases, but found little of value, then:

- probability linked the ethnic code in the Census to the Scottish NHS Community Health Index (Scotland's version of the NHSNumber) and subsequently to the Scottish Morbidity Record (SMR) database
- tested name search algorithms validated elsewhere, in Scotland where 2 percent of the population are non-white. Datasets used were hospital morbidity records, and the DARTS diabetes register
- analysed country of birth as a proxy for ethnicity.
- extrapolated cardiovascular risk factor data from England to Scottish populations.

## Results

- We linked 94% of census records to health databases, with the figure for minority ethnic groups exceeding 85 %.
- The incidence of acute myocardial infarction (AMI) in South Asians was, comparative to non-South Asians, about 60-70% higher (table). In contrast, survival following AMI was better (figure).
- Computer based name search algorithms were inaccurate in Scotland requiring visual inspection by knowledgeable observers.
- Despite equivalence in processes of care, the DARTS database showed South Asians had a higher HbA1c (a marker for high blood sugar) than non-South Asians. The difference was not present when the results were adjusted for age and sex differences between the populations.
- Mortality by country of birth showed major variations in coronary heart disease. The higher mortality rates from CHD in South Asian populations shown in England and Wales were demonstrable as was the lower mortality from CHD in the Chinese and Hong Kong born, when we used England and Wales as the standard. Control of CHD in Scottish born, Irish born, and South Asian populations is a top priority.
- Procedures for imputation of data by modelling were developed, giving some interim data on lifestyle that require further explanation and further development of methods.

Crude and age adjusted rates of myocardial infarction by sex and ethnic group using the matched population of 25 years and older from the Scottish census population 2001 as reference.

Sex / Ethnicity	Person years	Crude rate/ 1000	Adjusted rate / 1000	95% confidence interval for adjusted rate
<b>Female</b>				
Non-SA	4557730	3.42	2.99	2.94 – 3.03
SA	24762	1.62	5.07	3.23 – 6.91
<b>Male</b>				
Non-SA	3905224	5.44	6.01	5.92 – 6.08
SA	25885	4.40	9.88	7.63 – 12.41

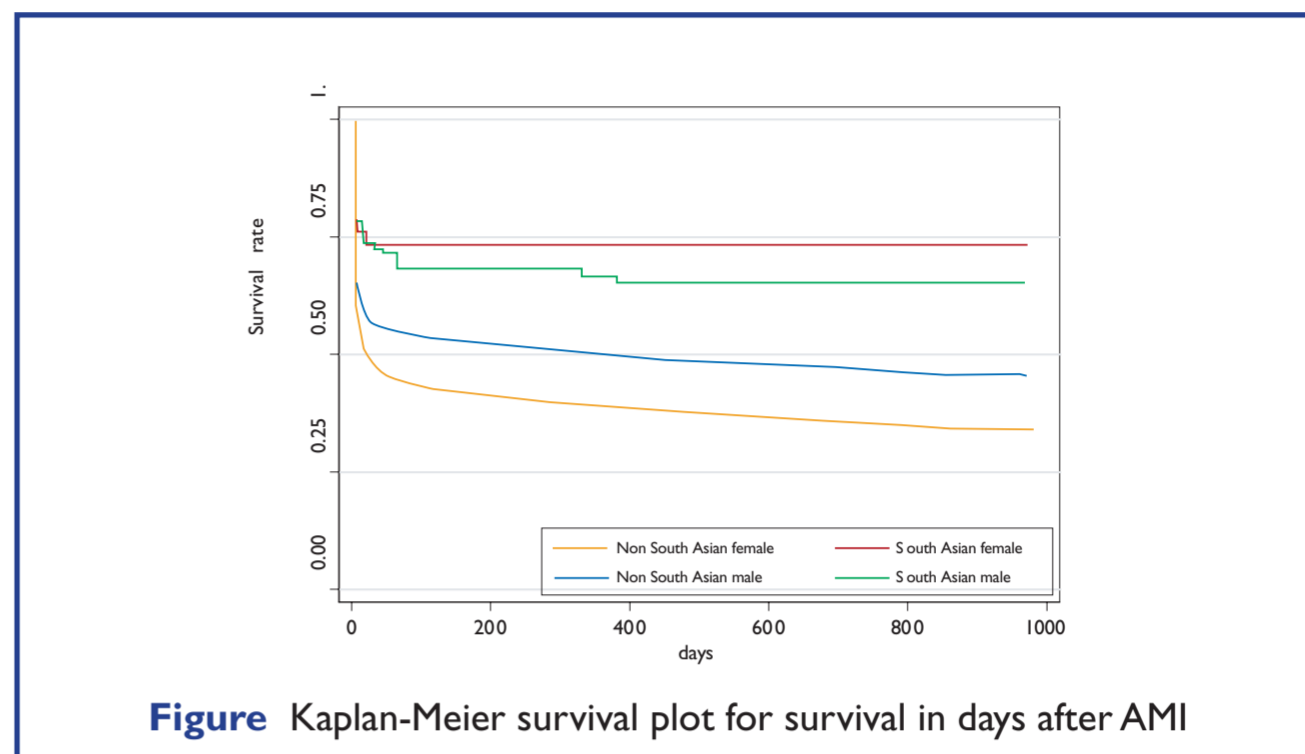


Figure Kaplan-Meier survival plot for survival in days after AMI

## Conclusions

Retrospective extraction of data by ethnic group from existing databases is possible at relatively low cost, and reasonable timescales. Our methods are likely to be applicable beyond Scotland. The results on coronary heart disease demonstrate major variations that can be used to refine policies and services to improve the health of Scotland's ethnically diverse populations. The data also add to broader understanding of the causes and consequences of CHD. Similar data could be produced for a range of important disease. Pending the results of prospective ethnic coding in 5-10 years this approach fills a data vacuum.

## Next steps and recommendations

- The data produced on CHD and its risk factors should be used to refine and adapt Scotland's policies on the prevention and control of CHD and its risk factors
- Ethical committee and PAC approval should be sought for a more comprehensive analysis of morbidity and mortality by ethnic group e.g. on cancers, respiratory diseases, infections etc.
- The utility of the linkage methods should be evaluated in other UK nations and abroad.
- The country of birth analysis should be extended to other major causes of death, with both Scotland and England and Wales as standard comparison populations to yield informative comparisons.
- Computerised name search methods need to be further refined if they are to be used in a fully automated way. Investigators need to continue to include a visual inspection within the procedures
- The imputation data underline the necessity for Scotland to undertake a survey of health and lifestyle in Scotland's minority ethnic populations
- Pending the arrival of useful data from prospective ethnic coding – a process that could take 5 to 10 years – the approach described here will help fill an important gap. The project needs, therefore, to be continued.