Working Paper 3

 ISSUES FOR COMPARISON

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February 2006
Introduction
As the work progressed in separate workstreams, it became apparent that the study should adopt a coherent approach to choosing data for comparison. Proposals have been made to encourage a consistent and systematic approach (see ‘Groundrules for comparing data in the COSPH study’ attached to this document) and in particular in the selection of measures of inequalities (see ‘Choosing measures of inequalities in health and health services within the COSPH study’ also attached)

This paper discusses the main decisions which have arisen in our work comparing health inequalities between France and England. The aim of the workstream is to develop / find key measures which will enable comparisons to be made at local level between the 2 sides of the channel. The main areas we have focussed on in attempting this work in the first 6 months of the project have been the following :-

- Demography
- Social Indicators
- Mortality indicators
- Health indicators from the local health surveys

Key sources of data are the Census, Deaths, and local surveys.

Census data
- The French Census is carried out every 9 years; the dates were 4th of march 1982, 5th of march 1990, 8th of march 1999 - the last was 1999.
- The English (UK) Census is every 10 years as well and the last was in 2001 ( NISRA (Northern Ireland Statistics and Research Agency) also conducted the NI Census in 2001 to tie in with the rest of UK ).

The Census is the most accurate source of population data; in the intervening years prospective and retrospective estimates are made for each year. The estimates are derived by using migration figures into and out of an area, births and deaths. This becomes more difficult as the size of the area diminishes; estimates in England are available to Electoral Ward area, but become less and less reliable as time passes.
since the last census. Estimates in France are available to Canton level but no lower; it is also not possible to provide population figures for any smaller area than Canton; on average Cantons are three times larger than electoral wards and the variation in size is much greater (e.g. up to 100,000 people in one Canton).

Census data can be analysed down to very small areas; this is important where an analysis of deprivation is required and where there are marked variations over a small geographic area.

**Choice of geographical area**

Generally data are available at administrative level; in England they are also available down to Electoral Ward which is a unit developed because of political boundaries. Populations at these levels are outlined in Table 1 showing the smallest and largest populations in each group.

A decision was made to analyse data at Regional level and at Electoral Ward in England and Canton in France; this would provide the best opportunity of showing variations at small area level whilst maintaining a level of analysis which would be statistically significant (provided years are aggregated).
Table 1
Populations

<table>
<thead>
<tr>
<th>English Administrative Area</th>
<th>Number of People</th>
<th>French Administrative Area</th>
<th>Number of People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region (Kent, Medway, East Sussex and Brighton and Hove)</td>
<td>2,319,347</td>
<td>Région (Nord Pas de Calais)</td>
<td>3,995,871</td>
</tr>
<tr>
<td>County or Unitary Authority (4)</td>
<td>492,324 (East Sussex); 249,488 (Medway) 1,329,718 (Kent) 247,817 Brighton and Hove</td>
<td>Département (2)</td>
<td></td>
</tr>
<tr>
<td>Local Authority 5 East Sussex; 12 Kent; Medway, Brighton and Hove</td>
<td>85,000 (Hastings) to 250,000 (Medway)</td>
<td>Arrondissements (13)</td>
<td>99,249 (Montreuil) to 1,181,724 (Lille)</td>
</tr>
<tr>
<td>Electoral Wards</td>
<td>249 (North Downs, Ashford) to 5666 (Beaver Ashford)</td>
<td>Pseudo-Cantons</td>
<td>4919 (Le Quesnoy) to 93.531 Tourcoing 96,959 Roubaix and 184,647 Lille</td>
</tr>
</tbody>
</table>

Deprivation Scores

One objective of the project has been to provide a comparative scoring system for Deprivation across the whole region. France and England have been using different methodologies and also indicators collected routinely through the Censuses vary between the two countries. Methodology in France has been more occupation based whilst in England indices of deprivation have been used over a long period of time, beginning with Jarman and Townsend, Carstairs and latterly Index of Multiple Deprivation (IMD)\(^2\).

The team worked on repeating IMD with French data; however it was difficult to find data for so many indicators and its was decided the most useful Index for this purpose would be the Townsend Index\(^3\). The Townsend Index was devised by
Townsend et al in 1988 to provide a material measure of deprivation and disadvantage. The index is constructed from 4 different variables taken, originally from the 1991 Census but this project will be using 2001 Census in England and 1999 Census in France; these are combined to form an overall score. The higher the Townsend score the more deprived and disadvantaged an area is. These variables are available on both sides of the Channel, the purpose being to be able to compare across the two sides of the Channel.

**Socio-economic Class**

The team has investigated the comparability of Social Class definitions across the channel.

The system used in England is based on the Labour Force using National Statistics Socio-economic Classification (NS-SEC).

> "The NS-SEC is an occupation-based classification but has rules to provide coverage of the whole adult population. The information required to create the NS-SEC is occupation coded to the unit groups (OUG) of the Standard Occupational Classification 2000 (SOC2000) and details of employment status (whether an employer, self-employed or employee; whether a supervisor; number of employees at the workplace). Similar information was previously required for earlier social classifications: Social Class and Socio-economic Group."

In both countries the Social Class definition is occupation-based and is in some way comparable, a new piece of work is really needed to provide a complete cross analysis of the two systems. For the UK, everyone's Economic Status is classified separately. So if a woman works and her husband takes care of the family and home, he is NOT looking for a job so will be classified as "Economically Inactive".
France | England
--- | ---
Professionals/executives | Higher Managerial and Professional Occupations
Farmers | Lower Managerial and Professional Occupations
Intermediate professions | Intermediate Occupations
Craftsmen/tradesmen | Small Employers and own account workers
Employees | Lower supervisory and technical occupations
Workers | Semi-routine occupations
 | Routine occupations
 | Long term unemployed

**Numerator and Denominator Data**

As outlined before, the French Census is two years earlier than the English Census and population estimates become less reliable the longer ago the last Census. In addition it was found that whilst more recent mortality data is available in England, older data only available back to 1986 whilst French mortality data is available at Canton level to 1979.

In France it hasn’t been possible to find population estimates at the level of cantons, the estimates are available for the whole of France, régions and departments.

There are 170 cantons and pseudo cantons in Nord - Pas-de-Calais; in Kent and Medway, East Sussex, Brighton and Hove there are 580 Electoral Wards, some of which go down to a very small population (Table 1) and this in itself challenges the ability to provide analysis of SMRs and Expectation of Life which are statistically significant.

It was agreed that French mortality at Canton level would cover the years 1997-2001 whilst English mortality data would cover 1999-2003. Time trend data would be a three year rolling average from 1979 (France) and 1986 (England) at regional and departmental level.

It is also not possible to provide population figures for any smaller area than Canton;
It is possible to get the number of deaths and the 1999 census results (number of persons by sex and age for example) at the level of commune (1547 communes in Nord-Pas-de-Calais). The only problem is to get estimated populations (at national regional departmental level only).

Both sides of the channel use ICD 9 (CIM9). In France data is available coded to CIM9 from 1979 until the end of 1999 with a changeover to CIM10 at the beginning of 2000. In England the dataset begins in 1986 using ICD 9 to the end of 1999 with the change to ICD 10 at the beginning of 2001. However England has been using ICD-10 for hospital data since 1995 and this will need to be noted in analysing utilisation data.

It is not clear that collection and data processing of mortality data results in the same label on both sides of the channel; for example a death from pneumonia in France will give pneumonia as the cause of death even if there is an underlying cause such as cerebro-vascular accident; in England the underlying cause will be that recorded. Since these data are used for published international comparisons e.g. by the world Health Organisation, it was agreed to progress the work whilst bearing in mind that differences may be due to such anomalies.

In analysing mortality; there is a difference in the definition of age for France which until 1997 was calculated as complete years up to the age of 9 and at 10 years and more, the age was calculated as the age reached during the year. From 1998 all ages are calculated in completed years in the same way of England. This difference in the calculation of age leads to a difference in mortality rate at same age and is not only a problem for childhood mortality but for all mortality (at all ages). To correct this difference it has been necessary to use a corrected standard population for France between 1979 and 1997

Access and Healthcare Utilisation
There has been much debate around how best to make comparisons across the two regions as the collection of data is quite different. In England every patient episode attracts a dataset which includes personal data date of birth, sex, ethnicity (not
always recorded), religion, GP, address with post code. In addition the date of admission and end date for the episode is recorded; it is not always possible to link episodes of care where a patient is transferred to another consultant or department in the same hospital. Date and place of discharge are also recorded, thus it is possible to analyse hospital deaths by electoral ward or district of residence for example as well as by GP practice.

On the French side it is very much more complicated as hospitalisation information is recorded by the insurance people (IRH). Such data is quite sensitive and one has to be careful not to make comparisons between hospitals; it does though seem that hospitalisation by area of residence will be possible.

Morbidity data again will come from different sources; in the UK it is increasingly likely that data can be obtained through GP computer systems, though at this stage the mechanisms for analysis are not robust and also there is likely still to be large variations in completeness and comparability of coding between practices.

On the French side data comes from the data base for maladies de longue durée – a register of people with long standing chronic disease; this is set up through insurance and includes such conditions as diabetes, heart disease, multiple sclerosis and is much more likely to be complete than the UK GP systems but there needs to be some work to assure comparability in terms of severity of disease (unless the project concentrates on disease like diabetes where either you have been diagnosed and are on the register – or not). We still have the issue of possible difference in propensity to seek care between the two nations as well as social class and educational differences (which link to socio-economic inequalities).

Easier to carry out is a comparison between availability of healthcare, and mapping exercises showing density of GPs, community nurses, physios , social workers should be possible. More difficult is to make access to hospital beds; firstly a definition of ‘a hospital’ is required to ensure we compare like with like. In addition the mapping of nursing home, residential and retirement homes etc. should be included.
Local Surveys

Both England and France have a national Health Survey. This is run annually in England. The french national Health Survey is taking place around approximately every 10 years. These have been:

1969-1970
1980-1981
1991-1992
2002-2003

In France there has been an enhanced sampling of the national Survey across Nord Pas de Calais in both 1980-1981 and 2002-2003

In England there are insufficient responses in the national survey to allow analysis at sub-regional level. There are a series of local surveys including Apple a Day (Maidstone and Canterbury 1985) Health Quest SouthEast (1993) Kent and Medway (2001) and Health Counts (East Sussex, Brighton and Hove 2003). Similar questions used in the French Survey and in Kent and Medway and Health Counts including SF-36, Obesity, Physical Activity, Housing, Occupational Class. Thus it was agreed to use these surveys to compare the health of individuals in the two regions. Wording has been examined carefully to ensure comparability.

Dr. Ann Palmer
10th February 2006
Within this study there are frequent occasions when data from our two regions are not easy to compare. For example, when

- information is not recorded in one of the countries,
- when access is denied or difficult,
- when it would take too long to assemble,
- when information is not available at a detailed level,
- when there are differences in definitions and relevance.

For consistency across workstreams within the project, an agreed or systematic approach is needed when making comparisons. This document is a proposal for the ‘groundrules’ to be followed:

**General principles** (yet to be agreed) might be as follows:

1. Appoint a lead person for each workstream, who is responsible for progress and reporting. Identify a responsible person on each side of the channel to organise or co-ordinate the work in their country within the project plan. All working on a workstream need to check their analyses and comparisons fall within the scope and aims of the project (project proposal and annexes attached).

2. Have an initial discussion to find out how much relevant work has already been done in the regions, establish how interesting or important the topic is seen to be, and the types of inequalities that might exist.

3. French and english colleagues jointly agree the specific items of data to be compared and the level of detail needed for inequalities analyses.

3. Check if suitable (timely, accurate, complete) data exist in both regions.

4. Check if available data cover all or only part of the regions.
5. Check if data are recorded to a level of detail that enables the required or appropriate inequalities analysis.

6. Check if data are available to the project in reasonable time and cost.

7. Check if data are in a suitable form to analyse/manipulate.

8. Check if we have the resources (people, skills and time) to re-analyse data. Can be done on either side of the channel.

9. Compare data definitions.

10. Agree on data definitions to be used.

11. Agree on method of comparison and presentation.

12. Agree if french and english data to be combined and analysed together, or whether analysed by individual country and then compare results.

**Responsibilities of individuals**

Members of workstreams will need to be disciplined in their approach and adopt ways of working that are effective and efficient, for example to:

- drop work that is irrelevant to the project,
- spend time trawling for existing work on methodologies and international comparisons,
- avoid work that does not produce comparisons of our regions,
- work closely with partners informing each other of and sharing progress,
- record agreements and decisions,
- take into account the importance of a information in each region (try to use what is credible, well-established and frequently used, and reflects important policy objectives),
Resolution of problems

The main problems are where data cannot easily be compared. Resolution might be to:

- work out common data definitions that are acceptable,
- change one country’s data to the same format as the other one (providing new formulation is acceptable and easily achievable),
- change both country’s data to an acceptable and easily achievable new definition,
- consider dropping the measures when no direct comparison is possible,
- consider carrying out descriptive analyses separately for France and England and then comparing the results.

Likely outcomes

Comparisons may be done differently for different workstreams, for example,
- mortality might be compared in a single analysis with identical data and definitions,
- provision of services might be described down to different geographic levels in the two countries according to availability of data,
- some data might be analysed separately by country and then the results compared.
- some data may be analysed for only part of the two regions.
CHOOSING MEASURES OF INEQUALITIES IN HEALTH AND HEALTH SERVICES WITHIN THE COSPH STUDY

Each workstream within the project will use measures of inequalities, and a systematic and consistent approach to choosing these is desirable. The ‘Groundrules for comparing data in the COSPH study’ have been proposed, to be followed when deciding the scope of our comparisons, the required level of analysis to show inequalities, suitable data and definitions, etc, etc. A modified approach will be needed for the qualitative workstream.

This document provides a framework for choosing measures of inequalities. It defines inequalities as unacceptably wide variations for different geographical areas (areas of deprivation) or sectors of the population (socially or economically excluded, etc). To examine these we need measures of health and health care at the level of small areas and sub-populations. Precisely defined and agreed measures are needed to cover the project area of interest. A first attempt is given below.

Workstreams will need to inform each other when they use and make choices about the data they use, possibly by compiling a central list of measures used across all workstreams. However it is done, communication across workstreams is essential to reduce inconsistencies in measures and their definitions within the study. For example to avoid workstreams using a confusing variety of population estimates, age-categories, methods of standardisation, geographical levels of presenting data, and so on.

**Measures of health** include (list not necessarily comprehensive):

- life expectancy
- mortality rates
- self-assessed health status
- chronic illness, on chronic disease register, in receipt of benefits relating to health
- long-term limiting illness
- health behaviour (smoking, alcohol consumption, diet, exercise)

**Measures of health care**, to include both provision and utilisation of health services (list not necessarily comprehensive):
- general/family practices, doctors and nurses
- family and community nursing, psychiatric nurses, midwives, etc
- carers – informal and provided by social or health services
- dentists
- hospitals – provision measured by clinics, beds, specialities, staff, budget?, etc), and utilisation (inpatient admissions, inpatient beddays, outpatients, accident & emergency visits, day surgery, day places)
- professions allied to medicine (physiotherapists, dieticians, occupational therapists, speech therapists, psychologists, counsellors, etc
- organisation/structure/financing/politics/policies/priorities of the region’s health care provision.

Other potentially relevant **social/economic/demographic variables** (list not necessarily comprehensive):
- Population
- Age
- Gender
- Ethnicity
- Marital status
- Employment status
- Occupational or social class
- Education
- Health insurance status
- Income
- In receipt of benefits relating to economic or social situation
- Housing tenure
- Standard of housing (overcrowding, poor condition, damp, cold)
- Neighbourhood and community anxieties/stresses/ social capital
• Inner city/urban/rural dweller
• Canton/electoral ward/postcode/local authority
• attitude to healthy lifestyle/healthy behaviour
• access to help/advice/facilities to improve health or health behaviour

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References


Townsend P, Phillimore P, Beattie A. Inequalities in Health in the Northern Region: an interim report, Newcastle upon Tyne and Bristol; Northern Regional Health Authority and the University of Bristol: 1986.

Socio-economic classification of working-age population, Spring 2002: Regional Trends 37