HEALTH INEQUALITIES ACROSS NORTHERN FRANCE AND SOUTH EAST ENGLAND

First Report from the Interreg Project

Health and Health Behaviour in South East England and Northern France

Project Partners and main contributors

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1.1 Introduction

The project is co-financed by Interreg IIIA, a European Union Programme financed through the European Regional Development Fund. Interreg IIIA is specifically aimed at Northern France and South East England (see figure 1).

Interreg IIIA is a European Union Programme financed through the European Regional Development Fund, which aims to stimulate co-operation between regions divided by an international border. The aim of the Franco-British INTERREG IIIA Programme is to develop transfrontier co-operation between eligible areas in SE England and Northern France.

The project covers the whole of Nord Pas de Calais in northern France and Kent and Medway, East Sussex, and Brighton and Hove in the south east of England.

Figure 1

Interreg Region

Source: www.interreg3a.com

The aim of the project is to analyse available data from routine sources and local health surveys to compare health and health-related behaviour in the populations of South East England and North France focusing particularly on health inequalities and social cohesion. The project will be comparing the availability and accessibility of health-related programmes in each country and in the second year of the project it is expected to develop strategies to enhance the health of citizens of the euro-region. In addition the project will, through focus groups, seek information from the patients' perspective with respect to the social and cultural aspects of both regions.

1.2 Description of the geography and social context of the two regions (see Working Paper 1)

Table 1 Populations

English		French	
Administrative Area	Number of People	Administrative Area	Number of People
Region (Kent, Medway, East Sussex and Brighton and Hove)	2,319,347	Region (Nord Pas de Calais)	3,996,588[1]
County or Unitary Authority (4)	492,324 (East Sussex); 249,488 (Medway) 1,329,718 (Kent) 247,817 Brighton and Hove	Département (2)	Nord : 2,555,020 Pas-de-Calais : 1,441,568
Local Authority 5 East Sussex; 12 Kent; Medway, Brighton and Hove	85,000 (Hastings) to 250,000 (Medway)	Arrondissements (13)	99,249 (Montreuil) to 1,181,724 (Lille)
Electoral Wards	249 (North Downs, Ashford) to 5666 (Beaver Ashford)	Pseudo-Cantons	4919 (Le Quesnoy) to 93.531 Tourcoing 96,959 Roubaix and 184,647 Lille

[1] http://www.insee.fr/

The Nord-Pas-de-Calais region is situated in the North of France and covers 12,414 km2 which equates to 2.3% of the total surface of France[2]. The population of Nord-Pas-de-Calais is 3 996 588 (in 1999) (compared with 60 185 831 in France)[3], being 2 555 020 resident population in the department Nord and 1 441 568 in Pas-de-Calais[4]. The region is administratively divided into two départements (Nord with Lille as regional capital and Pas-de-Calais with Arras); 13 districts (arrondissements), including 6 in Nord and 7 in Pas-de-Calais; 170 cantons (86 in Nord and 84 in Pas-de-Calais) and 1546 communes (652 in Nord, 894 in Pas-de-Calais)[5]. The unemployment rate at regional level is higher than for France (13.2% compared to 9.5% in the fourth trimester of 2005)[6]. Among the four main economic activities (agriculture, industry, construction and services), industry is the most important – Nord-Pas-de-Calais is the third region in France as for density of employment in industry. Nord-Pas-de-Calais ranks the third biggest economic region in France[7] with its total GDP of 77.26 billion euros (5.5% of national GDP). GDP per head of population is 82 versus 104 for France (compared to 100 for the 15 European countries

[2] Source: Insee "Nord Pas de Calais. La région en faits et chiffres" ; http://www.insee.fr/fr/insee_regions/nord-pas-de-calais

[3] idem

[4] Source : INSEE

[5] Source : INSEE

[6] Source : Insee. Taux de chômage trimestriel par région. http://www.insee.fr/fr/ffc/chifcle_fiche.asp?ref_id=CMRSOS03311&tab_id=476

[7] Source: Chambre Régionale de Commerce et d'Industrie Nord Pas de Calais. http://www.nordpasdecalais.cci.fr/www/espace_territoires/economie_du_nordpas_de_calais.aspx

– data Insee from 1999)[8], which places the Nord-Pas-de-Calais among the poorest of French regions.

Kent and Medway, East Sussex, Brighton and Hove lie within the Region served by the Government Office of the South East. The population of the region is 2,319,347; being 1,329,718 in Kent, 249,488 in Medway, 492,324 in East Sussex and 247,817 in Brighton and Hove[9]. The Government Office for the South East works with organisations across the South East to deliver the Government's policies and programmes in the region. The South East of England was the region of the UK with the largest population, with 8.1 million residents in 2004, followed by London, with 7.4 million people[10]. Over a quarter (26 per cent) of the population of England was resident in London and the South East combined. This is despite these two regions together covering less than a tenth of the UK's land area. The population of the South East Region is 8,080. The South East is one of the wealthiest regions in England; Gross value added per head index, 2003 (UK=100) for the South East is 115%. The South East and

[8] Insee « Nord pas de Calais. La région en faits et chiffres », http://www.insee.fr/fr/insee_regions/nord-pas-de-calais/rfc

[9] 2001Census ; National Statistics Online http://www.statistics.gov.uk/census2001/pyramids/pages/00ml.asp

[10] http://www.statistics.gov.uk/CCI/nugget.asp?ID=1306&Pos=1&ColRank=2&Rank=512

the East are two regions with the highest employment rate in Great Britain (over 78% in 2004)[11].

Table 2
Overview of the population health

	Nord Pas de Calais[12]	**France**	Kent & Medway	Brighton & Hove	East Sussex	**Great Britain**
Birth rate[13]	14.15	**13**	60.3	49.7		**56.3**
Infant mortality	4.6	**4.2**		5.3		**5.3**
Life expectancy at birth	M: 72.4 F: 80.8	**M: 75.8** **F: 82.9**	M: 75.9 F: 80.2	M: 72.5 F: 81.0		**M: 76** **F: 81**
Mortality rate for all ages	9.2	**9.0**				**M: 9.8** **F: 10.6**

Within their own country context as measured against the national standard population the SMR for Kent and Medway is 97%; and for Nord Pas de Calais 126%. A comparison of the two countries has enabled these figures to be put more into context, particularly highlighting the differences between men and women in the two countries.

[11] Annual Population survey, Office for National Statistics. http://www.statictics.gov.uk/downloads/theme_labour/UALADtables_Sept05.xls

[12] All the data for Nord Pas de Calais and for France come from http://www.insee.fr/fr/insee_regions/nord-pas-de-calais/rfc

[13] Measured in France as number of live birth per year referred to the total population within measured area. In England birth rate is number of live birth per 1,000 females aged 15-44 in years.

Life expectancy at birth in Nord Pas de Calais is among the lowest in France, for both genders. A rise in life expectancy is observed from 1990 for both men and women; however the gap between both genders remains nearly the same. The global mortality rate is the highest in France, for both genders. According to the Regional Health Observatory (ORS), mortality for men is 26% higher for the region than for France[14]. It is thought that this results from a high incidence of diseases related to alcohol, bad nutritional habits and high proportion of workers exposed to risk factors in industrial areas and in mines.

Mortality varies across the south east of England; in Kent and Medway Sevenoaks has the lowest SMRs and Dartford the highest. In the whole of the project region Hastings has the lowest life expectancy at 77.4 and Wealden the longest at 80.7 (men and women). Diseases of circulatory system are the most important cause of deaths in Kent and Medway for both genders. The second largest number of deaths is attributed to cancers. Diseases of the respiratory system constitute the third cause of deaths[15].

2.1 What do we know about inequalities (see Working Paper 2)

Inequalities in health are defined as variations in health (as measured by mortality) across communities and geographical groups.

[14] ORS Nord Pas de Calais, oral presentation during the workshop of Interreg project, 30 January 2006

[15] ONS Annual District Deaths Extracts, 1996-2002

Geographical variations in health have been demonstrated in both England and France (the Black Report demonstrated that men from social class V were 2.5 times as likely to die before retirement age than men from social class I). Glasgow had the shortest expectation of life in Britain, 76.4 (2001-2003) compared with a person living in Kensington (London) whose expectation of life was the longest in 2001-2003 was 84.8. In the South East of England (GOSE area) the average life expectancy at birth (1998-2002) is 79.3 years; for Local Authorities in the Interreg project area the expectation of life ranges from 77.4 in Hastings, 77.6 in Medway and also in Thanet, to 80.2 in Lewes, 80.6 in Sevenoaks and 80.7 in Wealden[16].

It is possible to define four concepts of inequalities;

- Health Inequalities
    - related to economic position resulting from occupational social class
    - behavioural inequalities which again have been related to socio-economic position
    - life-course inequalities
- Inequalities in healthcare provision

Inequalities in health have been an important issue for the government of England since the publication of the Black Report in 1980; British health policy is directed at the reduction of inequalities in health. In

[16] SEPHO 2004: Life Expectancy at birth; local authorities in the south east

France much less has been written about health inequalities; however the same issues are important, those of the links between poor health and material and social deprivation. The Haut Comité de la Santé Publique in its report of January 2002 « Health in France »[17] showed the differences in life expectancy at 35 years, between the socio-professional categories. Life expectancy at 35 years of age for a middle class man was 6.5 years greater than that of a working class man between 1982 and 1996; this difference is smaller for women et it equals 3.5 years. The probability of dying between 35 and 65 years old is twice higher for a working class man than for a middle class man (1.6 for women).

2.2 How is this seen from the viewpoint for England and for France

It has been interesting to find that the position regarding inequalities in health is at a different stage of evolution on the two sides of the channel. Analysis of inequalities in health has been important in Public Health in England since William Farr carried out some analyses in 1837; by 1980 when the Black Report was published this was a controversial issue for the Thatcher Government and the results were not published initially; however subsequent analyses have shown that if anything inequalities across social groups and between the north and the south of England have continued to widen.

[17] La santé en France 2002. Rapport du Haut Comité de la Santé Publique. ISBN : 2-11-005112-4

In France, the question of inequalities in health has received little attention by the specialists of public health and social sciences until recently. This explains why this question playedh a marginal part in public health debates, although some developments about this question appear in the first article of the 2004 Law on Public Health[18] and are at the origin of the 1999[19] Law defining an universal coverage insurance for the poorest part of the French population (*couverture mutuelle universelle*).

It was only in 2001 that this question benefited from collaborative work by epidemiologists and social scientists. During the same period, public reports by the High Committee on Public Health *(Haut Comité de la Santé Publique*) and the National Academy of Medicine (*Académie nationale de médecine*) investigated and provided public proposals on the issue.

3.1 What are the issues methodologically to enable comparisons (see paper 3)

The aim has been 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 focussed on in attempting this work in the first 6 months of the project have been the following:

[18] Loi du 9 août 2004 relative à la politique de santé publique

[19] Loi 99-641 du 27 Juillet 1999 portant création d'une couverture maladie universelle

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

3.2 Key sources of data

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

3.3 Census data

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. The French Census is carried out every 9 years; the last was 1999. The English (British) Census is every 10 years and the last was in 2001. The Census is the most accurate source of population data; in the intervening years prospective and retrospective estimates are made for each year. Estimates in England are available to Electoral Ward area, but become less and less reliable as time passes since the last census. In France there are population estimates available at level of *regions*, *departments* and cantons. Other areas to be considered for comparisons are *bassin de vie* and *zone de proximité* in France, used by l'Agence Régional de l'Hopitalisation (ARH). Some data concerning health provision and health utilisation exists at this level.

A decision was made to analyse data as far as possible at Regional level and at Electoral Ward in England and Canton in France; 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). 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 data are aggregated across years).

However the level analysed will depend on the researched question. In consequence some analysis may be carried out on the level of *zone de proximité* in France and district level in England, for example in the health utilisation workstream.

3.4 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 and income based whilst in England composite 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)[20].

[20] Office of Deputy Prime Minister. 2000. Indices of Multiple Deprivation 2000 – The Methodology. http://www.odpm.gov.uk/index.asp?id=1128452

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[21]. 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.

3.5 Socio-economic Class

In both countries the Social Class definition is occupationally 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; it is thought that Eurostat are working on this issue. 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". For France the social classes are described by the nomenclature of the Professions et Catégories Socioprofessionnelles (PCS-2003) that has been updated since 1982 taking into account that some professions are no longer represented in a society and that the new professions appear in some quickly developing fields (e.g. NTI, communication, environment), as well as the new transversal character of professional function is

[21] 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.

presently promoted in different industrial activities (methods, quality control, logistics).

The new nomenclature includes four levels of professions' aggregation. The most aggregated level gives 8 socio-professional groups (see Table below). The nomenclature describes 486 jobs for active population and 11 additional posts for people without professional activity[22].

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

'The NS-SEC is an occupationally 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.'[23]

Table 3
Social Classification

[22] Source: Insee; http://www.insee.fr/fr/nom_def_met/nomenclatures/prof_cat_soc/pages/pcs.htm

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

France[24]
Farmers
Craftsmen/tradesmen
Executives/intellectual professions
Intermediate professions
Employees
Workers
Retired
Without professional activity

England
Higher Managerial and Professional Occupations
Lower Managerial and Professional Occupations
Intermediate Occupations
Small Employers and own account workers
Lower supervisory and technical occupations
Semi-routine occupations
Routine occupations
Long term unemployed

3.6 Mortality Data

Denominator data comes from the population censuses or population estimates. As outlined before, the French Census is two years earlier than the English Census and estimates become less reliable the longer ago the last Census. In addition it was found that whilst more recent

[24] Liste des catégories socioprofessionnelles agrégées 2003. Niveau 1 : 8 Postes ; http://www.insee.fr/fr/nom_def_met/nomenclatures/prof_cat_soc/html

mortality data is available in England, older data was only available to 1986 whilst French mortality data is available at Canton level to 1979.

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.

In France ICD 9 was used for coding deaths between 1979 and 1999 and ICD 10 from 2000; in England ICD 9 was used to the end of year 2000 and ICD 10 from the beginning of 2001. It is not clear that collection and 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.

The question of calculation of age is not only a problem for childhood mortality but for all kind of mortality (at all ages). In analysing childhood 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 in 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. To correct this difference it has been necessary to use a corrected standard population for France between 1979 and 1997.

3.7 Survey Data

Both England and France have a national Health Survey; this is run annually in England and every 10 years in France (1969-1970, 1980-1981, 1991-1992, 2002-2003).

In England 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). In France there has been an enhanced sampling of the national Survey across Nord Pas de Calais in 1980-1981 and 2002-2003. More specific surveys called *Baromètre Santé* were conducted across France; in 2000 the survey about smoking, and in 2002 about nutrition.

There are 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.

3.8 State of Art, literature review – How we measure health inequalities?

Health Inequalities are commonly measured at a population level. There are common and different methods of measuring inequalities across the channel The method we have in common is the measurement of mortality standardised for age and sex; the two sets of data though are on different scales being standardised against each national population. For this reasons the project has developed a common methodology using mortality, expectation of life and indices of deprivation. As explained above available information on deprivation has been explored on both sides and a common approach has been agreed using the Townsend Index of Deprivation.

A geographical approach is being used to demonstrate the variations in mortality and expectation of life and the Townsend Deprivation Index at small area level (electoral wards and cantons). Correlations will be used to demonstrate how good a fit there is on both sides of the channel regarding measures of health and measures of inequality and explanations will be sought using the survey and qualitative data.

Data from surveys (Enquête Santé 2002-2003 – Extension régionale Nord/Pas-de-Calais, Kent and Medway, Health Counts (East Sussex, Brighton and Hove) Health and Lifestyle surveys) have been analysed following the econometric approach developed by Van Doorslaer and

al. (2003, 2004)[25][26] in order to compare total and income-related health inequalities across the two regions.

Explaining health inequalities provides :-

- the statistical relationship between health status and socio-economic characteristics at the individual level (gender, age, income, SES, health behaviour, social capital...)
- the distribution of these "predictive" factors in the general population.

Within such a framework, a variable contributes to "explain" health inequalities if the following two conditions are fulfilled:

- it has an impact on health (i.e. has a significant coefficient in the health equation) and,
- it is unequally distributed among individuals (i.e. has a concentration index greater than zero). Health status can be assessed using the SF36 questionnaire.

Many previous studies show that self-assessed health is a good predictor of future mortality. ORL models can be used to transform qualitative answers to quantitative interval-scaled measures.
Population surveys bring useful information on socio-economic status

[25] VAN DOORSLAER E, JONES AM (2003) Inequalities in self-reported health: validation of a new approach of measurement. *Journal of Health Economics*; 22: 61-87.
[26] VAN DOORSLAER E, KOOLMAN X (2004) Explaining the differences in income-related health inequalities across European countries. *Health Economics*; 13: 609-628.

(gender, age, SES, income data are not available in English surveys) and on health-related lifestyles (alcohol consumption, smoking habits, nutrition and activity). If representative, these surveys can also be used to estimate the distribution of "predictive" factors in the general population.

From the launch of the project, statistical work has progressed along the following lines:

- Surveys have been precisely compared regarding representativeness (sampling process, weighting schemes) and available information (scope of information, definition of variables and modalities);
- Health equations have been estimated and tested separately for each region (Nord/Pas-de-Calais, Kent and Medway, East Sussex, Brighton and Hove).
- Decomposition of health inequalities in both regions is presently ongoing. Comparing the "explanatory" power of each factor between Nord/Pas-de-Calais and in Kent is planned.

Early results from comparisons of the surveys have led to debate about the use of weighting and the statistical modelling has produced conflicting and hard to interpret conclusions. Direct comparisons between the results of the surveys are leading to some interesting differences between the 2 populations.

4.1 Analysis of indices of deprivation (using French and English approaches); mapping and detailed comparison of the two regions (Working Paper 4)

The initial approach had been to use indices already in existence on both sides of the channel; however it was found that the data constructing these indices (in particular Index of Multiple Deprivation which uses 36 indicators, could not be replicated on the other side. There are also differences in the way social class is measured.

There are two possibilities for analysing / comparing social disadvantage and health indicators. Firstly we researched the use of variables which provide the maximum explanation of health variation. This approach meant we needed to make comparisons of indices in common use and examine the evidence to show they were proven to be linked to indicators of inequalities. This led to a comparison of Townsend, Carstairs, Jarmen and other indices. A major constraint has been the ability to find suitable indicators on both sides of the channel in which we could be confident of their having the same true meaning. Paper 4 sets out this process and the academic rigor to which the choice of Townsend Index was applied before we set about constructing the index for 2001 in England and for France where it hadn't previously been used.

Further we wanted to ensure that the indicator chosen would provide a geographic analysis at small area level, and would be robust in calculating the correlation between health and social indicators across the geographical area.

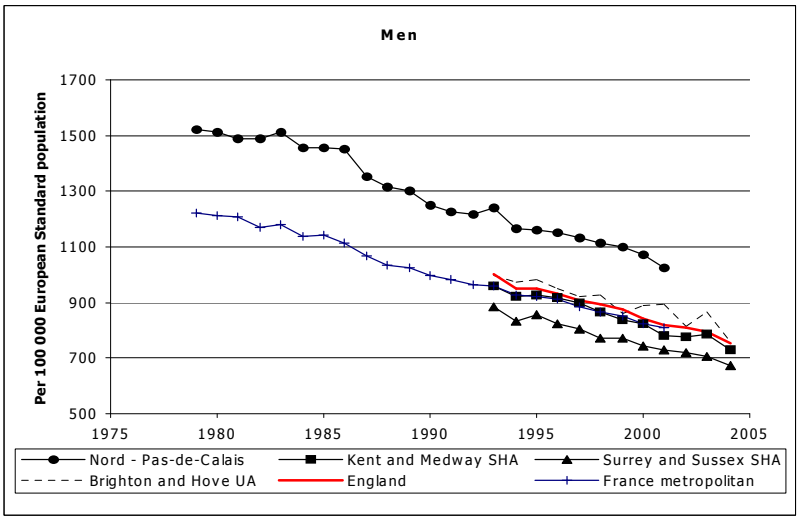
5.1 Local perspective of health inequalities using the data we have collected and comparisons made – mortality, expectation of life etc. (Working Paper 5)

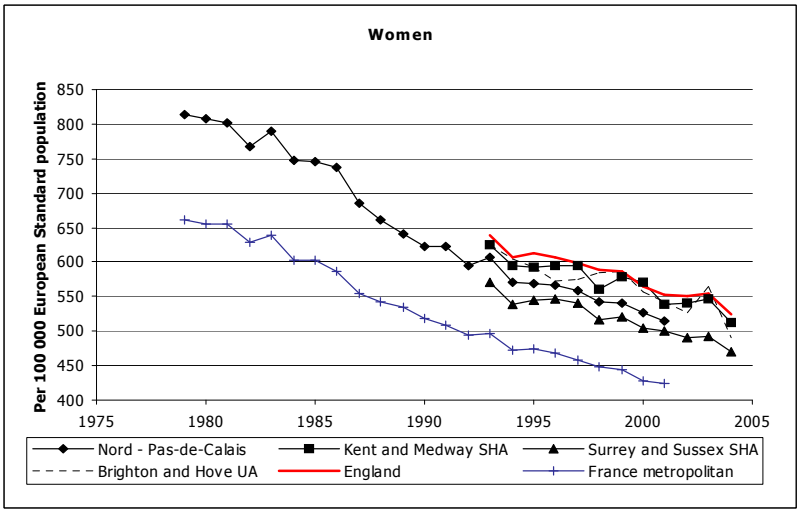
Aggregation of mortality data across the two regions has enabled, for the first time, the direct comparison of mortality between northern France and South East England. It also provides the ability for direct comparison of mortality between England and France.

Analysis of mortality has been in two ways

- mortality trends over time comparing the two regions and national statistics
- geographical analysis using cantons in France and electoral wards in England pto provide a 'ladder' or hierarchy by SMR (this latter piece of work has still to be completed)

Figure 2
Mortality from all causes (ICD10 A00-Y99, ICD9 001-E999)



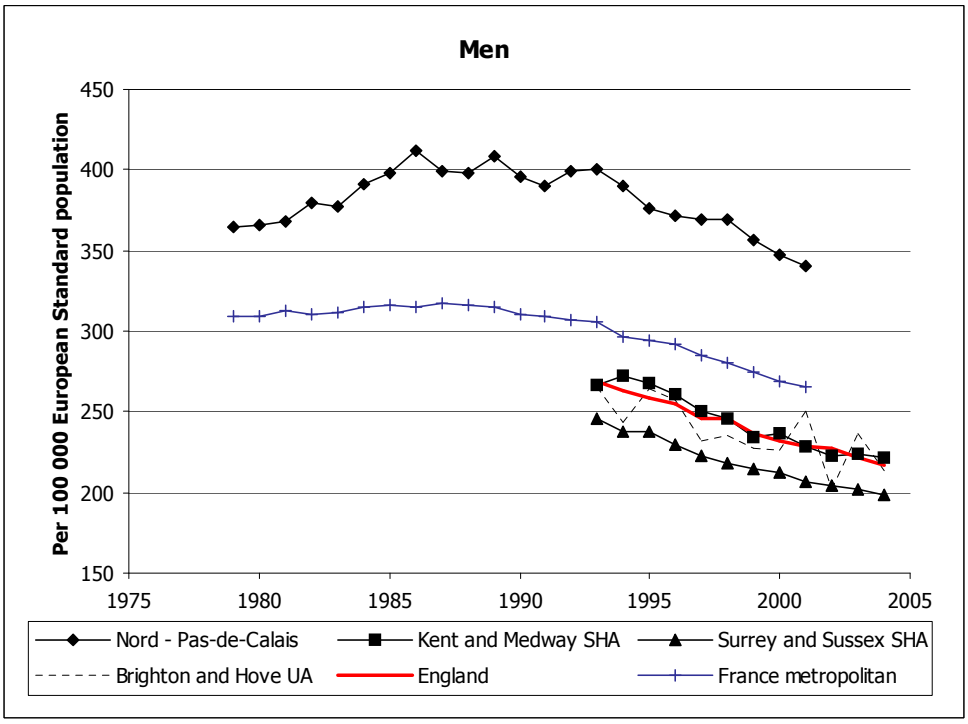


All cause mortality amongst males on a nationwide basis is the same for France and England with a reducing rate over time from approximately 1350/100,000 in 1978 to 850/100,000 in 2003. Particularly noteworthy is that the men in Nord Pas de Calais have a mortality experience over time consistently higher than men in Kent and Medway, and in Surrey and Sussex. Between 1993 and 2001 the fall in mortality has been -12.4 % (Surrey and Sussex) and -15.3 %

(Nord – Pas-de-Calais). Mortality in Nord Pas de Calais was 29% above France Metropole (France without the 3 *départements* outside the geography of France) and in 2001 was still 26% above the whole of France.

Figure 3

Mortality from all cancers at all ages – Men (ICD9 140-208 adjusted, ICD10 C00-C97)



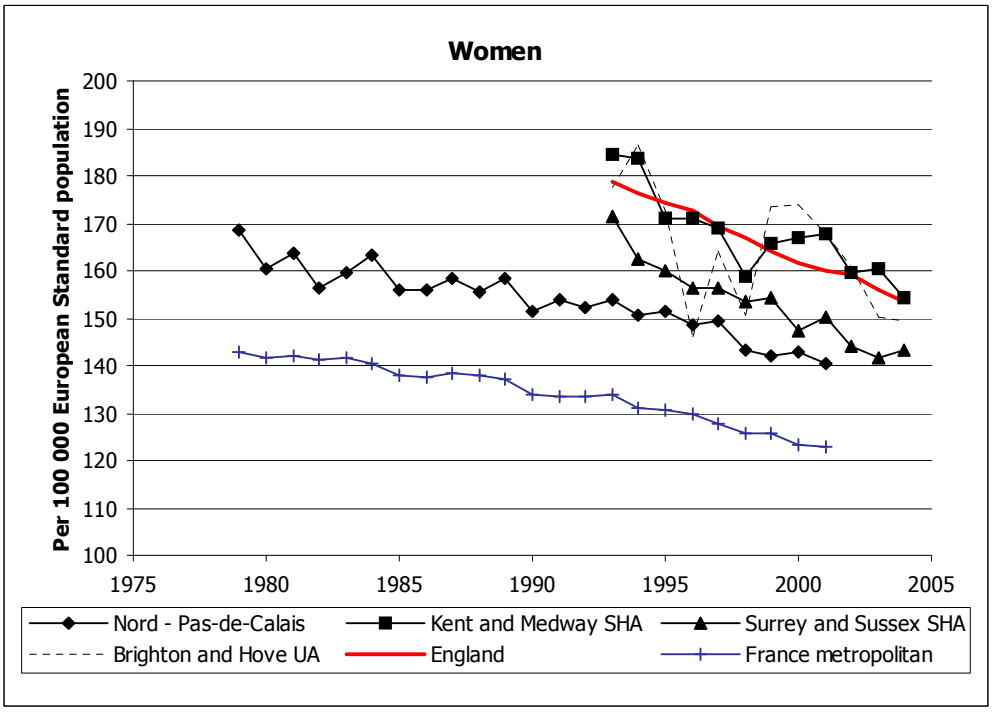
French women have been noted to have a longer life expectancy than English women and in 2001 their all cause mortality rate was still considerably lower at just above 400 deaths / 100,000 compared to 550/100,000 for English women. French women in Nord Pas de Calais have however maintained an excess in mortality over the French national rate of 20% to 23% over the years 1979-2001. The trend in

standardised mortality rate over the time period 1978 – 2001 has been falling at the some rate as English women but remains 29-30% lower than English women. In Kent and Medway, and in Brighton and Hove mortality for women has been shown to be 5% below the English national rate. In Surrey and Sussex female mortality is 11% below the national rate.

Cancer accounts for 32% of male deaths in France and 28% in England (all ages). As circulatory disease reduces in importance and the population ages, cancer deaths are becoming a more important cause. In France the number of deaths from cancer has been stable from 1993-2001 whilst in England cancer mortality has fallen by 6%. The death rate however has reduced in France between 1979 and 2001 by 16.5%; this is not seen in Nord Pas de Calais where the reduction has only been by 7.8% where the number of cancer deaths has actually increased by 28%.

Figure 4

Mortality from all cancers at all ages - Women (ICD9 140-208 adjusted, ICD10 C00-C97)



In the whole of France for 2001 the death rate for Cancer was 265.5/100,000 compared to 228.5 in England. Kent and Medway and Brighton and Hove have a rate similar to England, whilst Surrey and Sussex has a lower mortality 8-9% less than England between 1993 and 2004.

There is more similarity between France and England for female cancer deaths; in 2001 22% of death is France and 23.5% in England were due to cancer. In both countries the death rate for women was less than for men. This is particularly marked in Nord Pas de Calais where male cancer deaths are twice the female. This sex difference is less marked

in England or the regions of the south east. English women were 32% more likely to die from cancer than French women in 1993-2001. Over this period, women in Nord Pas de Calais had a excess mortality from cancers of 14%, stable over the time period, women in Kent and Medway were similar to England as a whole whilst in Surrey and Sussex mortality form cancers was 7% lower than England.

Circulatory disease (Coronary Heart Disease plus Cerebrovascular disease) accounts for 27% of all mortality for French men and 40% for English men. In both countries there is a long term trend for reduction in deaths from circulatory disease. Mortality in Nord Pas de Calais is less than South East England, however, Nord Pas de Calais does still have a stable excess mortality of average 28% over the years 1978-2001. Kent and Medway and Brighton and Hove are similar to the English national mortality rate but Surrey and Sussex have a mortality from Circulatory Disease 13% below the national average rate over 1993-2001.

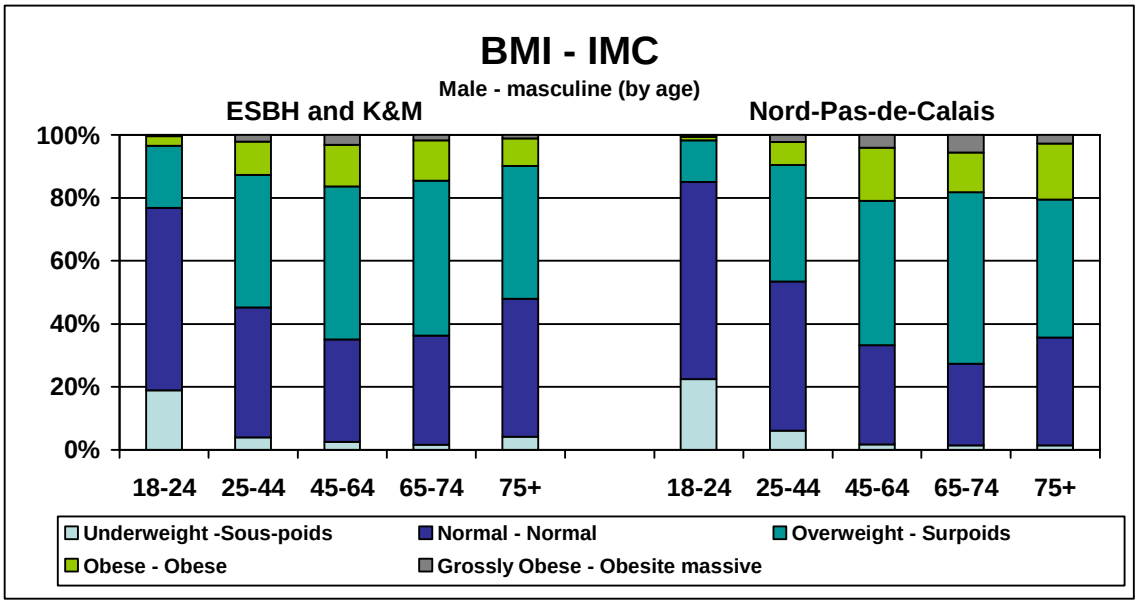
The difference for women (6.3% less in France) is less marked than for men (13% less in France). Circulatory disease represents 39.6% of all female deaths in England, compared to 33.3% for France. Women have seen a 25% reduction in Circulatory deaths, and male mortality from this cause is 1.6-1.8 times higher than for women; this difference appears to be increasing over time in France and in Nord Pas de Calais but reducing in England and in the regions in the south east.

6.1 Local perspective of measures and breakdown for health behaviour and health inequalities using the analysis from the survey data (Working Paper 6)

Health and lifestyle surveys have recently been carried out on both sides of the English Channel. They included questions about self-reported health (physical, mental and emotional/social functioning), about health-related behaviour (smoking, drinking, diet and exercise), about use of health services, and other socio-demographic details. Data from these surveys (Enquête Santé 2002-2003 – Extension régionale Nord/Pas-de-Calais, Kent & Medway and East Sussex, Brighton and Hove Health and Lifestyles surveys) have been analysed in order to compare total health inequalities across the two regions.

Both surveys used the same self-assessed general health question with five possible answers. There were marked differences between the regions in the distribution of the answers 'good' and 'very good'. The French respondents are most likely to say their health is 'good', whereas the English use the two terms more evenly. We do not know how much of this variation is due to real differences in health and how much is due to differences in the way these terms are used in the two regions Overall both regions report deteriorating health as age progresses, with only small differences between males and females

Figure 5



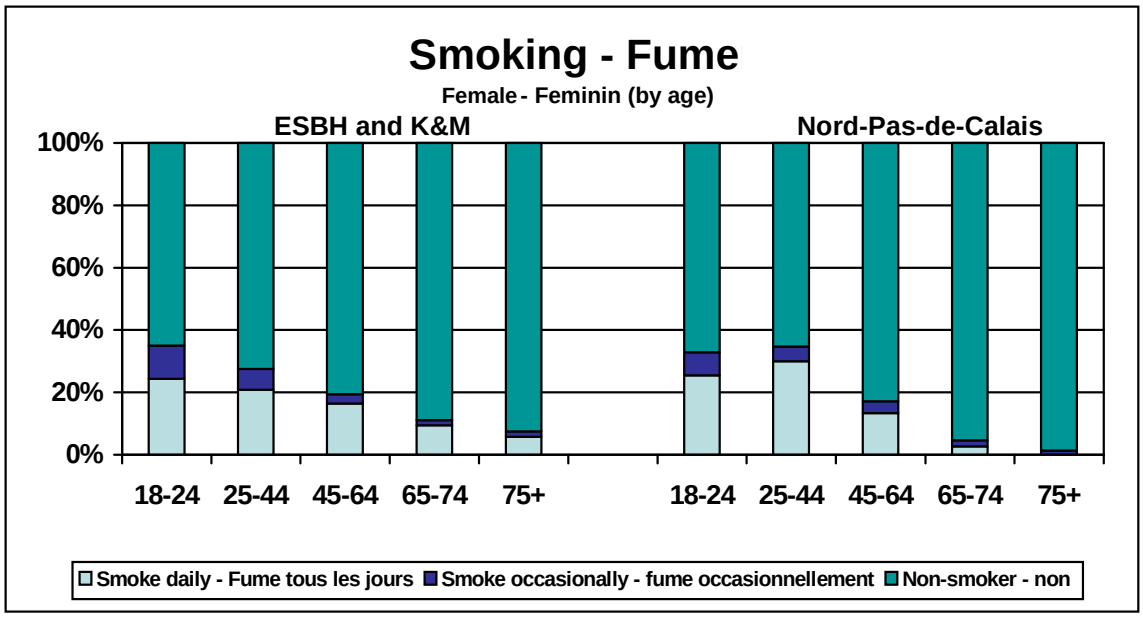
Height and weight are self-rated in both surveys, so would be subject to similar reporter biases. It is known that height tends to be overstated (especially in males) and weight is often under-estimated. These two factors suggest BMI scores may be under-estimated.

In both regions, large proportions of males were overweight once they got beyond 25 years old. Among females it was less of a problem, but still over half aged between 45 and 64 were overweight.

Levels of smoking reduce with age for both males and females. Smoking is more common among males, and this is particularly so in NPDC, where no females over 75 claimed to smoke daily. Comparing

the regions, the percentage of male smokers declines more rapidly with age in NPDC, from around 40% to 4%. Corresponding figures in KMESBH are 26% reducing to 8%. For female smokers the differences between regions were quite small, apart from the low percentages of females over 65 smoking in NPDC.

Figure 6



An important finding is that fewer older people in NPDC smoke compared to KMESBH.

Contrary to popular stereotypes, the majority of Frenchmen do not drink alcohol daily, based on the people responding to our surveys. However males of 45 and over in the NPDC survey were nearly twice as likely to drink daily compared to their KMESBH counterparts (around 40% compared to around 20%). In both regions males were more likely

than females to drink daily, and the gender difference A notable reversal of the above was seen among young people in KMESBH, where more people under 25 were drinking daily (5% of males and 2% of females compared to 3% of males and 1% of females in NPDC).

Both surveys ask for the number of days when various foods are eaten, including fruit and vegetables. The comparison is based on the percentage of people who said they eat fruit and/or vegetables on at least 5 days in a week. In both countries there are more females than males eating fruit and vegetables at this frequency. In NPDC the percentage eating fruit and vegetables on 5 or more days of the week increases with age (from well over 50% to over 90%).

The number of people taking exercise 3 or more times a week is higher for males and tends to reduce with age.

Although differences in exercise are not great between the regions, larger proportions of those aged 65 and over are taking exercise at these levels in KMESBH.

Following the methodology proposed by van Doorslaer and Jones (2003)27, van Doorslaer et Koolman (2004)28, explaining health

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[27] VAN DOORSLAER E, JONES AM (2003) Inequalities in self-reported health : validation of a new approach to measurement. *Journal of Health Economics* ; 22 : 61-87.

[28] VAN DOORSLAER E, KOOLMAN X (2004) Explaining the differences in income-related health inequalities accross European countries. *Health Economics* ; 13 : 609-628.

inequalities seeks to explore 1) the statistical relationship between health status and socioeconomic characteristics at the individual level (gender, age, income, social class health behaviour, social capital...) and 2) the distribution of these "predictive" factors in the general population. In this study, we use self-assessed health as the dependant variable. During the last twenty years, individuals' health status has been assessed subjectively in many surveys. Individuals are asked to rate their health status on a categorical scale (e.g. from "bad" to "excellent"). Answering to such a question is easy. Idler and Benyamini (1997)29 have clearly shown that self-assessed health is an independent predictor of mortality.

The health equation for each region was estimated via an ordered logit econometric model based on the cumulative distribution of response categories allowing the transformation of qualitative responses into a synthetic quantitative measure (interval scale) and the decomposition of inequality in three regions was carried out.

The contribution of the population in the health inequality decomposition varies across the three regions. The contribution of the age-gender structure (biological contributor) reaches 75% in the NPDC, 50% in ESBH and 33% in KM. The contribution of marital status appears relatively more significant in the NPDC than in the two other regions (9.1% for the NPDC, 2.1% for the ESBH and -0.4% for the KM). Home

[29] IDLER EL, BENYAMINI Y (1997) Self rated health and mortality: a review of twenty seven community studies. *J Health Soc Behav* ; 38(1) : 21-37.

ownership (the proxy variable of the income) has a negligible impact in the NPDC (-0.6%) whereas it amounts to 5.2% in the ESBH and 6.0% in the KM. Professional occupation contributes to a level of 2.6% in the NPDC, 5.7% in the ESBH and of 9.4% in the KM. Finally, the considerable contribution to the inequalities of health behaviour is noted: 14.1% in the NPDC, 36.6% in the ESBH and 52.2% in the KM.

These results are preliminary. From a statistical point of view the assumption of proportional odds (the necessary condition for the ordered logit model) is violated, particularly in ESBH and K&M. Given this heterogeneity in the data, a generalized logistic procedure may be required to continue the econometric modelling of the data.

7.1 Next stages of work

The following methodology has now been agreed. A comparative analysis of health policy has been presented. A surprising similarity of policy and issues arising was discovered.

Work around inequalities in public health has progressed further over at least 25 years in the UK, whilst in France there has until recently been a strictly purist economics approach in the view that individuals are restricted in their access to health through inequalities in provision of healthcare, distance and monetary restrictions through the distribution of income and access to insurance based care.

Analysis of the French sociological literature around cultural and social capital leads to the conclusion that reducing barriers to healthcare utilisation does not necessarily lead effectively to enhancement of health status of the consumer, and that the quantitative impact of better healthcare coverage on the consumption of care by the most deprived population may not be followed by a corresponding increase in the *quality* of the healthcare consumption.

English public health literature has taken these arguments further in using the evidence that the development of neighbourhoods and communities through partnership working can actually enhance the health and well being of the population through providing support and through improving the ability of communities to access healthy lifestyles.

7.2 What needs to be done?

The work so far indicates we have the opportunity through the project to enhance the approaches to health and health care on both sides of the channel through examining in more detail the factors at individual and community level influencing health of the population in these two regions. This can be taken forward through analysis of indicators of inequalities and through the examination of individual factors through the qualitative work.

Analyses of other information across the two regions (some discussion about sources and availability – e.g. GP data, ADLD) which can contribute to the inequalities debate (but mortality and morbidity data coming for the next report) – (paper 8)

The Healthcare Utilisation workstream has spent a lot of time considering two issues:

- What do we want to know about the utilisation of health and social care?
- What comparable data do we have access to in France and the UK?

Both of these have proved difficult to conclude and to reconcile with each other.

For the French side the key issue is:

- How does deprivation affect healthcare utilisation ?

For the English side there are two questions:

- Does the Inverse Care Law, where those living in the most deprived circumstances have the worst services, operate in France and England ? and
- If so, how does patient choice affect the operation of the Inverse Care Law ?

Areas down to electoral ward level will be rated for deprivation through use of the Townsend index. The provision of healthcare in

those wards can be mapped onto them. This will relate the density of health workers such as General Practitioners, nurses, therapists, dentists etc. to local populations. Similarly the number of hospital and social care beds available can be ascertained. Other data concerning the provision of health and social care resources will be available in both countries to give a picture of the service available to people with disabilities and older people. We will have to pay close attention to the different definitions of services in the two regions to ensure we have a comparable list.

Correlating Townsend to the mortality, morbidity and hospitalisation rates in a particular area should give an indication of both the links of deprivation to health outcomes and also whether the Inverse Care Law is operating.

It may also be illuminating to consider the relationship between the level of services available in the community ad the use of hospital accident and emergency units.

However, whilst it is possible in the UK to identify the home addresses for those consulting a GP this is rather difficult in France. It is therefore very difficult to correlate this activity to areas of deprivation.

The use of a proxy indicator is also being considered. Treatment for Type 2 diabetes may be suitable as it can lead to serious circulatory

and other conditions and if not properly treated in a preventative way will lead to a higher incidence of hospitalisation. Diabetes treatment is also well documented in both France and England.

The methodology outlined above should provide answers to two of the questions raised: Does deprivation affect healthcare utilisation ? and Does the Inverse Care Law operate in France and England ?

The issue of whether patient choice affects the Inverse Care Law will need to be considered in the second part of the project as we first need to ascertain whether the Inverse Care Law does indeed operate and also the data and analysis to examine this is likely to be very complicated.