Kent Academic Repository

Candidate Indicators to Monitor the Impact of the Recession on Public Health

RAPID SCOPING STUDY

Peter J Aspinall

Reader in Population Health
University of Kent

&

Dr Bobbie Jacobson

Director
London Health Observatory

September 2010

Contents

2

Acknowledgements

3

Thanks are due to Eastern Region PHO for a draft copy of the paper 'The impact of the recession on health', September 2009. We are also grateful to Professor Olle Lundberg, Professor, Director, CHESS, Stockholms Universitet / Karolinska Institutet, and to Dr David Stuckler, Oxford University, for their very detailed and informative comments on an earlier draft of this report.

EXECUTIVE SUMMARY

To date there have been few efforts to investigate the impact of the current recession on the health of the population through the exploitation of routine official sources of information. One reason for this may be the fact that official statistics on population health and health care utilisation take a significant amount of time to validate, this making them less sensitive as timely indicators of change. Yet there are some sources whose release is timely and which offer potential data to systematically assess the effects of the recession on the health of the population. This report is exploratory in attempting to identify such candidate indicators. Further work is required through consultation and peer review processes to establish more precisely whether these indicators can be populated with routine health data.

The indicators encompass three sets:

(1) Measures of recession impacts (risk factors) on population sub-groups (7 indicators)
(2) Direct measures of health impacts: short-term effects (<3 years) (16 indicators)
(3) Direct measures of health impacts: medium-term (3-9 years) & long-term (10+ years) effects (no specific indicators recommended)

The indicators in these 3 sets are summarised in table 1.

Table 1. Summary of proposed indicators

(1) Measures of recession impacts (risk factors) on population sub-groups	
Indicator	*Strength*
1. Unemployment rate	High including utility at GOR level
2. Unemployment rate by gender	High (likely to be robust at GOR level)
3. Unemployment rate by age	High (likely to be robust at GOR level)
4. Unemployment rate by ethnicity	High (likely to be robust for most GORs)
5. Unemployment rate by whether disabled or not	High (but robustness unknown at GOR level)
6. Unemployment rate by whether lowest qualified or not	High (but robustness unknown at GOR level)
7. Unemployment by deprived area or not	High (likely to be robust at GOR level)
(2) Direct measures of health impacts: short-term effects (up to 3 years)	
Generic health indicators	
1. Percentage who are economically inactive due to long-term sickness	Low/unknown
2. Claims for incapacity benefit/employment support allowance	Low/unknown
3. Limiting long-term illness/general health	Low/unknown
4. All cause mortality	Low
5. Consultation rate with general practitioners	Low but difficult to assess on currently available data
6. Number of GP referrals to all specialties: elective & non-elective admissions	Low (but further investigation needed)
7. A & E attendances	Low (but further investigation needed)

Cont. over

Indicators of psychological distress	
1. Suicide rate	High
2. Attempted suicide rate	Unknown for HES data on admissions for intentional self-harm (further investigation needed)
3. Psychiatric morbidity as recorded in ambulance calls data	Unknown but possibly high based on one GOR
4. Psychiatric morbidity as recorded in service contacts in the mental health minimum data set	Unknown (though the next release of data will help establish utility)
5. Prescribing costs for anti-depressant drugs	Low (no evidence of an effect based on one GOR but further investigation needed)
6. Deaths from alcohol abuse	High when rises in unemployment are high (>3% in a year)
7. Premature deaths associated with intentional violence	Possibly high but further investigation needed
Indicators of other negative health impacts	
1. Cardiovascular, ischaemic heart, & cerebrovascular disease (mortality & morbidity)	Low (standardised mortality rates); high for ambulance calls for chest pain based on one GOR (further investigation needed)
Indicators of positive health impacts	
1. Road traffic accidents	High (age-standardised mortality rate); high (ambulance calls data for traffic/road transportation accidents but limited to one GOR)
(3) Direct measures of health impacts: medium-term (3-9 years) & long-term (10+ years) effects	
No specific indicators recommended	

ABBREVIATIONS

ERPHO: Eastern Region Public Health Observatory

GDP: Gross Domestic Product

GOR: Government Office Region

IHS: Integrated Household Survey

INTRODUCTION

The standard definition of a recession is two consecutive quarters of negative economic growth (falls in Gross Domestic Product [GDP[1]]). On this basis the UK economy entered recession in quarter 2 of 2008. The recession continued through six consecutive quarters in which there had been a fall in GDP, at which time GDP stood at 6.4 percentage points below its pre-recession level. The fourth quarter of 2009 was the first of economic expansion. The 2008-9 recession was the longest and deepest in sixty years and predictions are indicating that the consequences will be long-lasting (a period of 3 to 5 years). A long, slow recovery is anticipated but with regional variations.

To date there have been few efforts to investigate the impact of the 2008-9 recession on the health of the population through the exploitation of routine official sources of information. Instead, the focus has been primarily on the likely impact of the recession on the operation of the National Health Service and the nursing and medical professions. At a recent meeting of the European Health Forum, for example, McKee deplored the fact that no attempt was being made to systematically collate data on the recession's effects on health and to evaluate the effect of policies to mitigate them in what he described as an 'information vacuum' (Richards 2009). This information gap is clearly likely to have an adverse effect on public debate on the health impacts of the recession and on decision-making processes by central government and at a local level. By contrast there is a substantial body of anecdotal evidence, such as that in a recent editorial in the *Nursing Times* (Anon. 2009). Examples of such evidence include an increase in the risk of suicide, attempted suicide, depression, and anxiety disorders; an increase in the use of psychotropic drugs; a deterioration in health consequent upon job loss; an increase in unhealthy eating; an increase in industrial accidents through job change; and an increase in health inequalities, to name but a few.

The ways in which a recession may manifest its impact on public health are heterogeneous but three main channels or sets of impacts can be distinguished: (i) Employment (including job insecurity); (ii) Income (including issues relating to matters such as debt and housing foreclosures); and (iii) Social protections (including access to job reintegration). Clearly, there may be interactions between these three sets of factors in how they mediate and moderate recession impacts, thereby introducing complexity into the process of deriving suitable indicators to measure and monitor impacts.

---

[1] GDP provides a measure of the total economic activity in a region. Various theoretical approaches are used in the UK in the estimation of GDP, including estimates from the production, income, and expenditure approaches.

In addition to the complexity and heterogeneity of health impacts, there may also be practical factors that explain the dearth of efforts to investigate the impact of the recent recession on population health. Official statistics on population health and health care utilisation take time to assemble and validate. Those emanating from the Office for National Statistics go through a complex process of validation, resulting in relatively few releases that enable continuous monitoring (for example, quarter by quarter) to take place. Large-scale surveys, such as the Health Survey for England, provide only a temporal cross-section of the population's health and take several years of fieldwork and analytical investment. The findings of the Integrated Household Survey (IHS), the largest government general purpose survey, are released some 6 months after the closure of the data year and are currently classed as 'experimental statistics' (awaiting assessment by the UK Statistics Authority). Yet there are some sources whose release is more frequent and which offer potential data to systematically assess the effects of the recession on the health of the population. This report is exploratory in attempting to assess the feasibility of developing such candidate indicators.

METHODS

Choosing a strategy

Endeavours to develop an indicator set to systematically assess the effects of the recession on the health of the population face a number of difficulties. Firstly, a key challenge is to be able to identify indicators of public health that can causally be attributed to the recession. This requires two types of information: one or more indicators of macroeconomic changes (that track recessionary change), which may be unemployment, interest rates, food prices, or other economic changes not directly linked to unemployment. These different factors may mediate the impact of the recession on public health in different ways and may vary in their proportionate effects. There is, too, the possibility that some of these measures may be interdependent, perhaps suggesting that composite indicators may be a useful way forward. The evidence base on how different macroeconomic indicators affect population health is poorly developed and the exploration of this could usefully form part of the development of an indicator set. The other type of information needed is a set of measures of population health for which the evidence base indicates a strong causal relationship with *specific* macroeconomic measures or particular bundles of them. Clearly, this approach is demanding and would involve a significant input of time in systematically reviewing the literature to identify where the main causal

linkages are located and where, in consequence, effort in indicator development should be focussed.

A second, less satisfactory approach is to identify indicators which can readily be derived from existing official sources of data – relating to both macroeconomic changes and changes in the health of the population – that may offer scope for tracking the consequences of the recession for public health as close in time as the data sources permit, based on broad, evidence-based findings. Indicators of macroeconomic change receive high priority in government policy agendas and those relating to the labour market (notably, employment, unemployment, and economic inactivity), interest rates, home repossessions, and the like are released in a timely way. Data on public health, by contrast, do not allow changes to be followed in real time. Frequently, the key sources depend on the collection of data through large-scale general purpose and health surveys (such as the Integrated Household Survey and Health Survey for England) or the processing of administrative data (such as Hospital Episode Statistics). The complex processes of managing and quality assuring such data frequently mean delays of up to six months or a year before its release.

In addition to lack of timeliness in the public health data, the use of coarse measures of both macroeconomic and public health change may result in indicators that prove to be impervious to the impacts. The recessionary health impacts may be embedded in the data but obscured or masked by other factors affecting the health indicator. Moreover, such factors may act differentially across the country or across different population subgroups, as in the case of prescribing practice. Such an approach can, at best, offer only *indicative* evidence, except where the change in the macroeconomic indicator is very large, occurs over a short space of time, or brings about a marked change at a local level for contextual reasons. In spite of these drawbacks, there may still be a small handful of indicators that are specific enough to be of value. A clear constraint is that there must be a way of operationalising the indicator (that is, populating the numerator and denominator) in terms of data that is already routinely collected and that is of quality and reasonably timely. The constraint of data availability can only be removed by initiating new data collections or by the innovative use of existing data through secondary data analysis.

A third approach is to focus on certain groups who have been most severely affected by the recession, for example, those who have become unemployed, those who have entered long-term unemployment, or the young unemployed. This would fall short of a population-based approach as it would focus only on selected segments of the population where the health impacts might be expected to be greatest. It would not, for example, take account of recessionary impacts on the health of those who

remained employed. The advantage of this approach is that it is amenable to the use of a cohort study design, the cohort being a group of people with an exposure (unemployment) and perhaps defined population characteristics (for example, young people) in common. The cohort study would then involve tracking this study population prospectively over a period of time. Unlike cross-sectional data (such as that from the Integrated Household Survey), health outcome or health change data can be obtained on the same individuals at more than one point in time. The idea or concept underlying the cohort study is the ability to study the 'natural history' of risk factors. Thus, one could investigate, for example, changes over a period of time in health-related behaviours and health status – such as smoking, drinking, substance misuse, healthy eating, exercise, self-reported general health, limiting long-term illness, and self-assessed mental health, etc. - amongst a cohort of young people who became unemployed during or as a consequence of the recession. A further group of young people could be followed up who remained in employment during the same period, so that changes in the health and health behaviour of both groups could be ascertained. Given the future-orientated nature of cohort studies, this approach would lack utility for current indicator construction.

However, there may be some scope to utilise this approach through the use of ongoing cohort or longitudinal studies (of which there are now many in the UK, some with a regional or local focus[2]). It may also be possible to use routine health information systems, but these frequently lack socio-economic information (such as employment status), may be difficult to access for reasons of confidentiality, and may have insufficient person-level identifiers to be able to follow individuals over a period of time. Record linkage offers additional opportunities. The cohort study is an ideal design with which to explore or generate hypotheses and, given the weak evidence base on the relationship between macroeconomic changes and the health of the population, may provide important information. All these methods, however, provide scope for research and feasibility studies rather than indicator development from routinely collected administrative and survey data.

The current scoping study

This report represents the findings of a rapid (20 hours) scoping study to investigate the feasibility of developing indicators to systematically assess the effects of the recession on the health of the population, the specification for which did not encompass a literature review. Consequently, it has not been possible to investigate the potential availability of indicators of public health that can *causally* be attributed

---

[2] See National Statistics. *Longitudinal Studies* (October 2007). Accessed at:
http://www.statistics.gov.uk/articles/nojournal/LongitudinalStudiesDocument_final.pdf. This source provides information on the topics covered in each of the 23 longitudinal studies reported on.

to macroeconomic changes during and following recessions. A systematic review is needed to investigate this extensive body of literature. Instead, the focus has been on the 'coarse' indicators that could be rapidly derived from routinely collected and reported public health data, many of which however may prove to be insensitive to the effects of macroeconomic change.

A number of approaches can be taken with respect to the derivation of this 'coarse' set of indicators, though acknowledging that the main effort should focus on those indicators of public health which can causally be attributed to the recession. Firstly, indicators can be utilised of impacts on the labour market using quarterly statistics produced by ONS and departments of Government (such indicators comprising social determinants of health, such as unemployment, labour market inactivity rates, etc.).

Clearly, there are problems in using measures of unemployment as an indirect indicator of the health impacts of the recession. Firstly, unemployment is a macroeconomic measure frequently used as an indicator of business cycles, that is, it has utility in tracking changes consequent upon the reduction in economic activity that underpins recessions. However, unemployment in itself cannot be used as a proxy of the health impact of recession. It is only one measure of macroeconomic change and there may be other indicators of economic change (such as food prices, interest rates, business failures, and home repossessions) that may mediate recession impacts upon public health. Establishing what the relationships are between different macroeconomic indicators and public health – that is, how the two sets of indicators are mutually implicated in each other, if at all - is an area that is amenable to systematic review and such a knowledge base should ideally inform the process of indicator development.

Secondly, while there is a literature that indicates that changes in the levels and rate of unemployment may affect health, the relationship between unemployment and ill health remains widely contested[3]. For unemployment to be accepted as a valid

---

[3] See: Ruhm CJ. Are recessions good for your health? *Quarterly Journal of Economics* 2000; 115: 617-50; Ruhn CJ, Black WE. Does drinking really increase in bad times? *Journal of Health Economics* 2002; 21: 659-678; Ruhm CJ. Good times make you sick. *Journal of Health Economics* 2003; 22: 637-58; Ruhm CJ. Macroeconomic conditions, health and mortality. In: Jones AM (ed), *Elgar Companion to Health Economics*. Cheltenham, UK: Edward Elgar Publishing, 2006, pp. 5-16; Ruhm CJ. A healthy economy can break your heart. *Demography* 2008; 44: 829-48; Ruhm CJ. Macroeconomic conditions, health and government policy. In: Schoeni RF, House JS, Kaplan GA, Pollack H. (eds), *Making Americans healthier: Social and economic policy as health policy.* New York: Russell Sage, 2008; Stuckler D, Meissner C, King L. Can a bank crisis break your heart? *Globalization and Health* 2008; 4: 1-12; Stuckler D, Basu S, Suhrcke M, McKee M. The health implications of financial crisis: A review of the evidence. *Ulster Med J* 2009; 78: 1-3; Stuckler D, Basu S, Suhrcke M, Coutts A, McKee M. The public health impact of economic crises and alternative policy responses in Europe. *Lancet* 2009; 374: 315-23; Gerdtham UG, Johannesson M. Business cycles and mortality: Results from Swedish microdata. *Social Science & Medicine* 2005; 60: 205-18; Gerdtham UG, Ruhm CJ. Deaths rise in good economic times: evidence from the OECD. *Economics and Human Biology* 2006; 4: 298-316; Tapia-Granados JA. Increasing mortality during the expansions of the US economy, 1900-1996.

indicator of the impact of the recession on public health, a *causal* and *stable* effect would need to be demonstrated. Again, application of systematic review methods would be needed before any weight could be placed on unemployment as a proxy for health impacts, according particular attention to the issue of health selection into unemployment. Further, such evidence synthesis would need to consider the applicability of the wider literature to the UK context and the present recessionary circumstances.

Thirdly, *population* indicators are needed, unemployment providing only a partial picture. It would tell us nothing about the segment of the population that remains in employment. There may also be potential negative effects for this segment, such as a shift from full-time to part-time working, job change, and downgrading, and also the possibility of positive effects. Unemployment as an indicator would reveal nothing about the overall *net* effects of the recession on public health, for example, whether strong negative effects among the unemployed minority might be offset by weak positive effects among the employed majority.

However, one of the benefits of using an unemployment indicator is that it is available close to real time and available at a sub-national level (e.g. Government Office Region (GOR) or lower level). What we propose here is that this indicator is used to identify the population groups where this labour market measure has the largest impact and where, in consequence, we might look for large health effects (taking into account all the drawbacks of the measure). For example, it is feasible using government labour market sources to monitor the impact of the recession on some of the groups that comprise the statutory equality strands (age, gender, ethnicity/race, religion, disability, and sexual orientation) and Department for Work and Pensions mandate (age, gender, ethnicity/race, and disability) and other prioritised groups (lone parents, lowest qualified, and living in deprived areas). This latter focus is justified as the recessions of the 1970s, 1980s, and 1990s in Britain are known to have exacerbated inequalities in socio-economic position. Thus, we would use unemployment as a proximate indicator of population subgroup impacts (and possibly also of subnational impacts, at the level of GOR or local/unitary authority level).

Identifying *direct* measures of the impact of the recession on population health – ahead of a full evidence synthesis - is fraught with difficulties and must remain speculative. Such measures need to be constructed to reflect precise and probably nuanced effects of macroeconomic changes in the light of evidence-based findings. Such findings may then be able to shed light on whether such impacts are short-,

International Journal of Epidemiology 2005; 34: 1194-1202; Tapia-Granados JA. Recessions and mortality in Spain, 1980-1997. *European Journal of Population* 2005; 21: 393-422; Tapia-Granados JA. Macroeconomic fluctuations and mortality in postwar Japan. *Demography* 2008; 45: 323-43.

medium- or long-term. There is much conflicting evidence in the literature about the utility of some of the indicators which have been suggested (especially those relating to health-related behaviour). For a recession that has only recently ended, only limited use can be made of current health monitoring data.

One strategy would be to explore the literature on health impacts of previous recessions, although each recession has its own particular characteristics in terms of its length, depth, and groups affected and government policies to ameliorate those effects are also subject to change. Prior to the 2008-09 recession, there have been three recessions since the 1970s (Stafford & Duffy 2009):

- **early 1970s** – broadly a W-shaped recession with GDP falling between the end of 1973 and early 1974, rising GDP during mid-1974 and negative growth, again, during mid-1975;
- **early 1980s –** a V-shaped recession with negative growth rates for 1980 and the first quarter of 1981;
- **early 1990s** – an L-shaped recession with a fall in GDP towards the end of 1990 before a modest growth rate from the end of 1991.

Some comparisons can be made with previous recessions (ONS 2009). In the first three quarters of the most recent recession the change in unemployment rate was similar to the first three calendar quarters in the 1980s recession. The unemployment rate increased by 1.3 percentage points, from 5.8% in the first quarter of negative GDP growth to 7.1% in the third quarter of the recession (this change also occurred in the 1980s recession). In the first quarter of the 1990s recession it was 7.1% and increased to 8% in the third quarter (a 0.9% increase). As the population has grown since the 1980s, the same unemployment rate affects a larger number of people. Thus, the 1.3% point increase in the unemployment rate in the first three calendar quarters of the most recent recession represented a larger increase in numbers of unemployed people (530,000) than the first three calendar quarters of the 1990s (304,000) or 1980s (434,000) recessions.

ONS has prepared an analysis of the most recent and previous two recessions in terms of trends in Gross Domestic Product and unemployment (figs. 1 & 2)[4]. Although statistical comparisons can be drawn with respect to the depth of the depression as measured by GDP Index and unemployment rate, many other factors may mediate the effects of the recession on population health (such as interest rates, house prices, incomes and taxes, and benefits and other protections), such that the health

---

[4] See: *GDP and Unemployment: current and previous recessions compared*. Accessed at: http://www.statistics.gov.uk/cci/nugget.asp?id=2294

consequences of previous recessions may not be good predictors of the health consequences of the 2008-09 recession.

Fig. 1. Gross Domestic Product
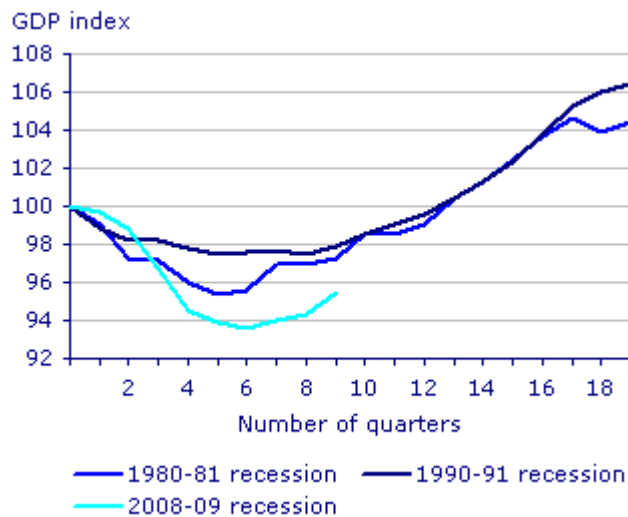
Fig. 2. Unemployment
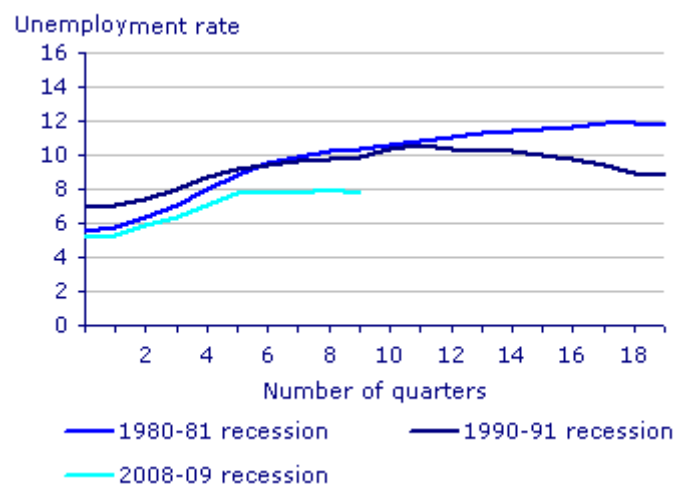
Although in the downturn phase of the recession, rises in unemployment are closely synchronised with entry into negative growth in GDP, unemployment rates are slow to adjust to an upward turn in the economy. While a lagging indicator of the economy, unemployment probably remains the main indicator of health[5]. After the 1980s

---

[5] Stuckler D, Meissner C, King L. Can a bank crisis break your heart? *Globalization and Health* 2008; 4: 1-12; Stuckler D, Basu S, Suhrcke M, McKee M. The health implications of financial crisis: A review

recession, unemployment levels and rates did not return to their pre-recession position at any time before the beginning of the next recession in the early 1990s. After the 1990s recession, the economy recorded positive economic growth in quarter 4 1991 but it was not until 1997 that unemployment levels and rates returned to their pre-recession positions. Thus, while it is known that the effects of unemployment on health have both short- and long-term effects, the period of raised unemployment associated with a recession may be very substantially longer than the period of negative economic growth.

MEASURES OF RECESSION IMPACTS (RISK FACTORS) ON POPULATION SUBGROUPS

There is likely to be benefit in using a number of measures of the economic impact of the recession on population sub-groups. An indicator based on unemployment would, for example, tell us which segments of the population are most severely affected. Such information might be useful, then, in investigating direct indicators of the impact of the recession on the population's health (in their capacity as wider determinants of health). Such measures as unemployment are available from routinely collected data and also offer the possibility of deriving measures at Government Office Region (GOR) or lower level.

The Office for National Statistics routinely monitors the impact of the recession for various departments including the Department for Work and Pensions and Government Equalities Office. It derives certain standard indicators (listed below), only some of which need be included as candidate indicators, given their statistical relationships (inactivity and unemployment are the most useful).

- *Employment*: The Labour Force Survey (LFS) measures the number of people with jobs, including people aged 16 or over who did paid work (as an employee or self-employed), those who had a job that they were temporarily away from, those on government-supported training and employment programmes, and those doing unpaid family work.

of the evidence. *Ulster Med J* 2009; 78: 1-3; Stuckler D, Basu S, Suhrcke M, Coutts A, McKee M. The public health impact of economic crises and alternative policy responses in Europe. *Lancet* 2009; 374: 315-23; Tapia-Granados JA. Increasing mortality during the expansions of the US economy, 1900-1996. *International Journal of Epidemiology* 2005; 34: 1194-1202; Tapia-Granados JA. Recessions and mortality in Spain, 1980-1997. *European Journal of Population* 2005; 21: 393-422; Tapia-Granados JA. Macroeconomic fluctuations and mortality in postwar Japan. *Demography* 2008; 45: 323-43.

- *ILO Unemployment*: The LFS also measures the number of unemployed people in the UK, following the internationally agreed definition recommended by the International Labour Organisation (ILO), that is, (i) people who are without a job, want a job, have actively sought work in the last four weeks and are available to start work in the next two weeks or (ii) out of work, have found a job and are waiting to start it in the next two weeks. Levels are for those aged 16 and over.

- *Unemployment rate*: ILO unemployed as a proportion of the economically active. The rate is for those aged 16 and over.

- *Economic activity rate*: The proportion of working age people who are in the labour force: this includes those that are in employment and those that are ILO unemployed. The *rate* is for those of working age (16-59/64). Note that economically inactive levels are for those aged 16 and over.

- *Economically inactivity rate*: The proportion of working age people who are neither in *employment* nor *unemployed*. This includes those who want a job but have not been seeking work in the last four weeks, those who want a job and are seeking work but not available to start work, and those who do not want a job. Levels and rates are for those of working age.

UK main labour market indicators include a number of additionally measures: Claimant count (the number of claimants of Jobseeker's Allowance resident in an area as a percentage of the sum of claimants and workforce jobs in the area); workforce jobs (a measure of the number of jobs: the sum of employee jobs, as measured by surveys of employers, self-employment jobs from the LFS, those in HM Forces, and government-supported trainees, but excluding vacant jobs); vacancies (levels are averages for latest three months and rates are ratios of vacancies per 100 employee jobs); and levels of full-time and part-time employment (numbers in full- and part-time employment based on respondents' self-classification).

Core indicators used by the Department of Work and Pensions to monitor the impact of the recession on its mandate and other priority groups are:

- Employment rate
- ILO Unemployment rate
- Inactivity rate

Given the (albeit contested) relationship between unemployment and a range of health indicators (especially those measuring psychological distress), there is benefit from including the unemployment rate in any suite of indicators measuring the effect of recession on population subgroups and health inequalities.

1. Indicator: Unemployment rate

Indicator definition: ILO unemployed as a proportion of the economically active. The rate is for those aged 16 and over.

Comment: The seasonally adjusted unemployment rate provides a reliable labour market indicator of the impact of the recession at a GOR level. The percentage change in the unemployment rate for January-March 2009 (as compared with January-March 2008) was 1.8% increase in Great Britain. However, there was substantial regional variation, from 1.3% in London to 2.9% in Yorkshire and Humber and 3% in West Midlands. The claimant rate (the number of claimants resident in an area as a percentage of claimants and workforce jobs in the area) shows similar differentials when % change in 2009 compared to 2008 is calculated: The regions with the highest % point change are North East (2.8%) (but not in unemployment rate data), West Midlands (2.6%) and Yorkshire and Humber (2.5%). Again, London is the lowest (1.5%).

Strength of indicator: high including utility at GOR level.

The recessions of the 1970s, 1980s and 1990s all had detrimental effects on inequalities in socio-economic position and health. Given the strong policy emphasis by Department of Health, Government Equalities Office, and Equality and Human Rights Commission in closing these gaps, indicators of the impact of the recession need to encompass measures of impacts on disadvantaged groups, even if those measures are only labour market impacts.

Work by Stafford and Duffy (2009) and Department of Work and Pensions (2009) has focussed on a number of disadvantaged groups. These include some of the seven statutory equality strands (age, gender, ethnicity/race, religion, disability, sexual orientation, and transgender) and the Department of Work and Pensions mandate groups (age, gender, ethnicity/race, and disability) and priority groups (lone parents, lowest qualified, and deprived areas). These groups are not mutually exclusive and they vary substantially in size (e.g. 20.5 million in the prime age group 25 to 49 years of age and 1.8 million lone parents): such variation may have implications for the

utility of indicators at Government Office Region level. Given some association between changes in the unemployment rate and short-term changes in health, there is utility in using the measure of unemployment rate (for those of working age [16-59/64] as a proportion of the economically active) as a way of monitoring the impact of the recession on these priority groups. There appears to be little gain by adding employment rate and inactivity rate as the differentials are similar in most of these priority groups.

2. Indicator: Unemployment rate by gender

Indicator definition: ILO Unemployment rate by gender: change on year

Comment: The ILO unemployment rate increased by 1.4% between Q1 2008 and Q1 2009 amongst women but by 2.4% amongst men. These early findings suggest a greater impact upon men. The ILO unemployment rate for men in quarter 1 was 8.1% and for women 6.4%. In the 1990s recession male employment rates were more adversely affected than those for women, men being concentrated in industries that were more seriously affected.

Strength of indicator: high (likely to be robust at GOR level).

3. Indicator: Unemployment rate by age

Indicator definition: ILO unemployment rate by age (18-24 years, 25-49 years, 50-69 years): change on year

Comment: The ILO unemployment rate between Q1 2008 and Q1 2009 increased by 4.2% amongst persons aged 18-24 years, substantially higher than in those aged 25-49 years (1.6%), and 50-69 years (1.3%). These early findings suggest a substantially greater impact amongst young people (more than double the deterioration for the population as a whole). The ILO unemployment by late spring 2009 stood at 16.2%, compared with 5.7% for prime-age and 4.3% for older people. Historically young people have had higher rates of unemployment.

Strength of indicator: high (likely to be robust at GOR level).

4. Indicator: Unemployment rate by ethnicity

Indicator definition: ILO unemployment rate by ethnicity (white vs. any ethnic background other than white)

Comment: DWP has reported that the ILO unemployment rate between Q1 2008 and Q1 2009 increased by 1.9% in the general population but 0.5% in minority ethnic groups. Although there has been only a small rise in the unemployment rate, the ILO unemployment rate stands at 11.6% for ethnic minorities, much higher than the 7.3% for the general population.

Strength of indicator: high (likely to be robust for most GORs)

5. Indicator: Unemployment rate by whether disabled or not

Indicator definition: ILO unemployment rate by whether disabled or not

Comment: Between Q1 2008 and Q1 2009 the ILO unemployment rate increased by 1.0% amongst disabled people but by 1.9% in the general population. Although the employment rate increased by a smaller percentage than the overall population, it stands at 9.5% (compared with 7.3% in the overall population).

Strength of indicator: high (but robustness unknown at GOR level)

6. Indicator: Unemployment rate by whether lowest qualified or not

Indicator definition: ILO unemployment rate by whether lowest qualified or not

Comment: Between Q1 2008 & Q1 2009 the ILO unemployment rate increased by 4.2% amongst the lowest qualified compared with 1.9% in the general population. Following this marked rise, the ILO unemployment rate for the lowest qualified stands at 16.2%.

Strength of indicator: high (but robustness unknown at GOR level)

7. Indicator: Unemployment by deprived area or not

Indicator definition: ILO unemployment rate by whether resident in deprived area or not

Comment: Between Q1 2008 & Q1 2009 the ILO unemployment rate increased by 2.6 in deprived areas compared with 1.9% in the general population. This takes the unemployment rate in deprived areas to 11.3%, up from 8.7% 12 months earlier. This indicator may be important not just as an inequality measure. There is some evidence of a contextual effect, that is, the effect of unemployment depends on the baseline level of a community's unemployment. In a low unemployment area the effects of unemployment tend to be worse.

Strength of indicator: high (likely to be robust at GOR level)

Other inequalities groups – such as lone parents and offenders – are problematic to monitor using route data sources such as the Labour Force Survey.

Issues of **intersectional disadvantage** may be difficult to take into account. These are situations where the presence of more than one protected characteristic – such as gender and race/ethnicity - leads to a qualitative transformation in the nature of the disadvantage experienced (in this case, unemployment). Intersectional disadvantage is different from **multiple disadvantage** where an individual falls within more than one protected group, that is, the presence of more than one characteristic 'adds' to the nature of the disadvantage. For example, if there are two protected characteristics, the quantity is doubled, if three, it is trebled.

DIRECT MEASURES OF HEALTH IMPACTS: Short term effects (up to 3 years)

While there are many indicators of the impact of the recession on the labour market, unemployment is one of the most important and widely accessible. Moreover, the evidence base indicates that changes in unemployment are more closely related with short-term changes in health than other economic indicators (Stuckler *et al.*, 2009; Tapia-Granados 2005).

Further, there is evidence that the short-term adverse consequences of unemployment are particularly evident in measures of psychological distress. Most of the candidate health indicators identified access this dimension of the health impact of the recession, although some generic health indicators are also evaluated.

Generic health indicators

1. Indicator: Percentage who are economically inactive due to long-term sickness (short term)

Indicator definition: Number of persons who are long-term sick in the economically inactive population (seasonally adjusted) as percentage of all people who are economically inactive (seasonally adjusted).

Comment: Stafford and Duffy (2009) investigated the seasonally adjusted percentage of the economically inactive population who are long-term sick as an indicator of the impact of recessions on disability. ONS quarterly data for the period 1993-2008 (ONS 2008) does show a slight upward trend following the early-1990s recession. This continued until January 1997 whereupon it stabilised before declining. However, in terms of its value as a general indicator, these investigators are not able to say whether this initial rise is associated with the recession. Further, others (Bajekal *et al*., 2004) have indicated that the long-term sick is not a robust measure of disability. The prevalence of long-term sickness is higher amongst older people (Beatty and Fothergill, 2003: 81-82).

At present there is not an adequate time series to assess the utility of this indicator. However, the latest labour market data for the quarter to April 2010 shows that, while most categories of economic inactivity fell, including the number of students not in the labour market, the number of people in the 'long-term sick' category increased by 58,000 to reach 2.07 million. The 'long-term sick' comprise around a quarter of the economically inactive and numbers had been stable from July 2009 through November-January 2010. The percentage change on the year shows an increase of 82,000 or 4.1%. These data need to be considered in the context of the availability of social protection measures (see 2 below).

Strength of indicator: low/unknown

2. Indicator: Claims for Incapacity Benefit and Employment Support Allowance (short term).

Indicator definition: Number of persons commencing a claim in each quarter for Incapacity Benefit/Employment Support Allowance.

Comment: Recent attention has been accorded to Incapacity Benefit or sickness benefit claims (now known as Employment and Support Allowance), with much dispute about the reported trend. The number of persons claiming the benefit for the three months to May 2009 was reported to be a 13.7% rise on the previous quarter and the highest increase in new claimants since 2000[6]. Recently released data shows that in May 2008 there were 2,595,800 claimants registered (incapacity benefit and employment & support allowance). In August 2009 the number of claimants stood at 2,632,700, much higher than either the February or May 2008 figures. By February 2010, the number had fallen to 2,614,800. Changes in the way the benefit is administered, including eligibility tests (and the badging of it as 'provisional' in the transition period), and the protracted stay on the benefit for many (persons claiming the benefit for a year stay on it for an average of 8 years and those who claim for 5 or more years are likely to remain on it for the rest of their lives) may reduce its utility as an indicator. Provisional data recently released by the DWP's Information Directorate from the Work & Pensions Longitudinal Study *for individuals aged under 25 years of age* commencing a claim for incapacity benefit, severe disablement allowance, or employment and support allowance over the 12 quarters (to May 2009) show only modest increases (from 25,180 in the quarter ending May 2008 to 30,560 in the quarter ending May 2009, with figures exceeding 29,000 in the quarters ending August 2007, August 2008, and November 2008)[7].

Strength of indicator: low/unknown

3. Indicator: Limiting long-term illness/general health (short term; long-term)

Indicator definition: Age-standardised rate/ratio of limiting long-term illness or very bad/bad health.

Comment: A potential source of this data is the Integrated Household Survey (IHS) which asked questions about limiting long-term illness and general health in its first reporting year (April 2009-March 2010). This source has a sample size that would yield data at a small area (local authority) level. However, there has only been limited research on the impact of economic crises on self-reported limiting long-term illness or general health and little of this has focussed on the short-term. Findings of research undertaken in Japan showed that self-reported health improved overall during a recession (Kondo *et al*, 2008). Trend data (percentages only) is available from the Health Survey for England for the period 1993-2007. Data for very bad/bad

---

[6] http://www.policyexchange.org.uk/news/news.cgi?id=902
[7] House of Commons *Hansard*, 8 December 2009:
http://www.publications.parliament.uk/pa/cm200910/cmhansrd/cm091208/text/91208w0016.htm

health and at least one longstanding illness show a slight increase to around 2002 amongst men and women but it is unknown whether this is a consequence of the early 1990s recession (it may be an artefact of the data: for example, data up to 2002 are unweighted; from 2003 on data have been weighted for non-response).

There may be scope to assess the utility of the indicator as a measure of the long-term effects of recession using the ONS Longitudinal Study (LS) as questions on limiting long-term illness and economic activity were asked in the 1991 and 2001 Censuses (although information would not be available, for example, on when respondents became unemployed or permanently sick/disabled).

Strength of indicator: low/unknown (short- and long-term).

4. Indicator: All cause mortality (short-term: <3 years)

Indicator definition: Age standardised all-cause mortality ratio

Comment: Stuckler *et al*. (2009) found no consistent evidence across the EU that all-cause mortality rates increased when unemployment rose (effect size: 0.05%, 95% CI −0.19 to 0.29, p=0.68). Moreover, this indicator is already routinely reported and monitored by the public health observatories. Given the lack of consistent evidence, it would add little to an indicator set.

Strength of indicator: low (not recommended)

5. Indicator: Consultation rate with general practitioners (short term)

Indicator definition: Number of consultations with general practitioners/population-based rate

Comment: One might expect that the psychological distress associated with the short-term impact of the recession would have an impact on the GP consultation rate. A significant proportion of routine general practice consultations – estimated at one-quarter (Goldberg & Bridges, 1987) – are for mental health problems. Moreover, GP consultation rates are known to be higher by a third in the unemployed than employed. Data from Qresearch show an upward trend in the crude consultation rate/person-year from 1995/6 to 2008/9 (from 3.91 to 5.53) and the change in 2008/09 over previous years is in line with this trend rather than atypical.

Strength of indicator: low but difficult to assess on currently available data and may be impervious to macroeconomic change.

6. Indicator: GP referrals, elective and non-elective admissions to acute and general hospitals (short term)

Indicator definition: No. of GP referrals to all specialties; totals of elective and non-elective admissions to acute & general hospitals

Comment: As with the trend in the GP consultation rate, Eastern Region PHO investigators report a gradual increase in these indicators in the East of England but no significant changes since the UK entered recession. Further investigation is needed at a national level using HES data.

Strength of indicator: low (but further investigation needed); may be impervious to macroeconomic change.

7. Indicator: A & E attendances (short term)

Indicator definition: No. of A & E attendances

Comment: Some US evidence indicates a high level of use of emergency departments during a recession. UK evidence is limited. Eastern Region PHO investigators examined monthly A & E attendance figures in the East of England during 2007/08 and 2008/09. Although depicting a strong seasonal trend, they did not show any significant increases associated with the onset of the recession. Further investigation is needed at a national level.

Strength of indicator: low (but further investigation needed); may be impervious to macroeconomic change.

Indicators of psychological distress

1. Indicator: suicide rates (short term: <3 years)

Indicator definition: Age-standardised and age-specific suicide rates for the population aged <65

Comment: A substantial body of literature has identified an association between unemployment and suicide. Stafford and Duffy (2009) cite a variety of sources, including data that shows that suicide rates for unemployed men between 1971 and 1981 were twice the national average and that suicide rates for wives of the unemployed were higher by 20% (OPCS 1981; Platt 1983; Balloch *et al*., 1985: 44-45). However, trend data for UK suicide rates (age-standardised rates per 100,000 population for men and women) do not show a statistical relationship with indicators of the early 90s recession. The reason may lie in the complex composition of the suicide rate demographically. The male rate shows a fall between 1991 and 1997 but with a rise in 1998. Female rates have also declined: they have been consistently much lower than in males and the decrease has been more steady. However, rates have varied by age group. In the early 1990s the highest suicide rates in the UK were among men aged 75 and over who may have been less affected by the recession than younger age groups. By 2007 men in this age group had rates lower than the 15-44 and 45-74 age groups. Women aged 75 and over show a similar trend to men. A more sensitive indicator might be age-standardised rates per 100,000 population for men and women aged <65.

Stuckler *et al*. (2009)'s research on 26 European Union countries between 1970 and 2007 indicated that every 1% rise in unemployment rates was associated with a 0.79% rise in suicides at ages younger than 65 years (95% CI 0.16-1.42; 60-550 potential excess deaths [mean 310][8] EU-wide). Moreover, their research indicates that especially large rises in unemployment (>3% in a year) had significant effects on the suicide rate. When unemployment rose by 3.6% in the UK in 1981, suicide rates rose by 2.7%. In the European data, these very large rises in unemployment were associated with a 4.45% (95% CI 0.65-8.24) rise in age-standardised suicide rates in 26 EU countries (250-3200 potential excess deaths [mean 1740] EU-wide). These investigators predict an additional 25-290 suicides in Britain attributable to unemployment rises in the current recession which may limit the utility of this indicator to measure GOR-level impacts. However, it is notable that in some GORs the annual change in the unemployment rate (change on year: three months to March 2009) has been around the annual level of >3% a year: 2.9% in Yorkshire & Humber and 3.0% in West Midlands against a UK average of 1.8% and a London proportion of 1.3%.

---

[8] Suicide rates are likely to fall in the UK but less so than in previous years. Stuckler *et al.* (2009)'s study took into account time-trends.

Strength of the indicator: high

2. Indicator: Attempted Suicide Rates (short/long term)

Indicator definition: Age-standardised or age-specific rates of deliberate self-harm with intent of suicide for the population aged <65

Comment: Given the strong evidence of the impact of economic crises on suicide mortality in the short-term, especially those impacts resulting in large annual rises in unemployment, one might expect similar elevated rates in statistics for attempted suicide. One difficulty in using attempted suicides as an indicator is the lack of robust data for this measure. The Office for National Statistics (ONS) does undertake regular surveys of psychiatry morbidity, in some of which questions are asked on the frequency of suicidal thoughts, attempts of suicide, and deliberate self-harm without intent of suicide. The latter distinction is important: however, while deliberate self-harmers without suicide intent are more frequent than suicide attempters, prevalence estimates are difficult to compile because of the way the data are collected. Estimates of non-fatal suicide behaviour have been made (Meltzer *et al*., 2002; De Ponte 2005) but, clearly, a within or post recession cross-section is needed.

Other statistical data are problematic. De Ponte (2005) discusses Ambulance Services NHS Trust data relating to the record made of every ambulance call-out. The coding for 'incident type' or reason for call-out includes 'self-harm' (although intentional and accidental self-harm are not distinguished) and 'psychiatric problem'. An illness type is also recorded, including codes for 'drug-overdoses' and 'drug poisoning', but not all these will be intentional. It may be possible to develop a typology by combining 'incident type' with 'illness type'. However, statistics based on these measures would be experimental. Also, practices may vary across Government Office Regions.

A further source is Hospital Episode Statistics, a source that contains information on all day cases and ordinary admissions. It is possible to extract cases where there is a primary diagnosis of intentional self-harm (coding provides a breakdown for method of intentional self-harm). These data may offer the best opportunity to develop a proxy for attempted suicide: they are reasonably accurate and data collection is comprehensive and substantially complete across England.

Strength of the indicator: unknown for HES data on admissions for intentional self-harm (further investigation needed)

3. Indicator: Psychiatric morbidity as recorded in ambulance calls data (short-term: <3 years)

Indicator definition: Ambulance calls for psychiatric/abnormal behaviour or suicide attempts.

Comment: Given the difficulty in identifying suicide attempters in ambulance data, an indicator for the number of ambulance calls for psychiatric/abnormal behaviour or suicide attempts would circumvent this definitional problem. The Eastern Region PHO has analysed ambulance calls for psychiatric/abnormal behaviour by month for the East of England for the period April 2007 – March 2009. An upward shift in such calls has been identified since the summer of 2008. The investigators note that this is an early broad analysis of trends which may differ to final cleaned figures. This data needs to be investigated in a national context before it can be accepted as a useful indicator of the impact of the recession on health. Attention needs to be accorded to how calls data is coded across GORs.

Strength of the indicator: unknown but possibly high based on one GOR

4. Indicator: Psychiatric morbidity as recorded in service contacts in the mental health minimum data set

Indicator definition: Number of persons in contact with NHS specialist mental services for adults (or percentage change).

Comment: The annual returns for the Mental Health Minimum Dataset (MHMDS) are available for 2003-09 but were classed as experimental statistics in the October 2008 and March 2009 Mental Health Bulletins. However, the analyses of the MHMDS were published as official statistics in November 2009 with the qualification of 'experimental' dropped for most of the content. The data show a gradual increase in the number of users of NHS mental health services across the three years 2006/7, 2007/8, and 2008/9.

Strength of the indicator: Unknown (though subsequent annual releases of the data will help establish utility); may be impervious to macroeconomic change.

5. Indicator: Prescribing costs for anti-depressant drugs (short-term)

Indicator definition: Total prescribing costs (all antidepressants).

Comment: ERPHO has looked at the impact of the recession on total prescribing costs for all anti-depressant drugs for the East of England Region on a quarterly basis from April 2007 to March 2009. These data show no statistical relationship with the claimant account over the same period. The investigators offer one possible explanation, that people with poorer psychological health consulting with their general practitioner are being offered other interventions such as psychological therapies rather than medication. This indicator requires further validation in a national context and for other GORs. Given the evidence for a relationship between economic crises and psychological distress, one might expect that prescribing costs for anti-depressant drugs would reflect key indices of recession.

An important drawback to the use of such an indicator is the evidence for a marked geographical patterning in antidepressant prescribing rates in PCTs (based on analysis undertaken by the Mental Health Foundation). 22 of the 25 highest prescribing PCT areas are in the north of England, while 23 of the lowest 25 prescribers are in the London area. As the foundation admits, the reason for these differences is unknown but may reflect different cultures of prescribing and the availability of alternative therapeutic approaches.

Strength of the indicator: low (no evidence of an effect based on one GOR; further validation needed)

6. Indicator: Deaths from alcohol abuse (short-term: <3 years)

Indicator definition: Age standardised mortality rates for alcohol abuse

Comment: The analysis by Stuckler *et al.* (2009) indicates that the utility of this indicator may depend on the depth of the recession. Age standardised mortality rates from alcohol abuse had only a weak association with a 1% rise in unemployment: an effect size of 0.81 (-5.93 to 7.54), resulting in a mean of 101.8 excess deaths (-745.5 to 947.9). However, especially large rises in unemployment (>3% in a year) had significantly stronger effects on deaths from alcohol abuse: an effect size of 28.00 (12.30 to 43.70; 1550-5490 potential excess deaths [mean 3500] EU-wide). This finding is consistent with the other measures of psychological distress associated with short-term negative effects of unemployment. Again, GORs where unemployment

rates have increased by around 3% in a year may be more likely to experience an excess in these deaths than other regions.

Strength of the indicator: high when rises in unemployment are high (>3% in a year).

7. Indicator: Premature deaths associated with intentional violence (short-term: <3 years)

Indicator definition: Number of homicides (note: this indicator excludes suicide which is also an intentional cause)

Comment: Stuckler *et al*. (2009) report a 0.79% rise in homicides (0.06-1.52; 3-80 potential excess deaths [mean 40] EU-wide). This indicator may have utility at the national level but (because of small numbers) not at GOR level.

Strength of indicator: possibly high but further investigation needed.

Indicators of other negative health impacts

Indicator: Cardiovascular, ischaemic heart, & cerebrovascular disease (mortality and morbidity) (short-term)

Indicator definition: Age-standardised mortality ratios and ambulance calls for these conditions.

Comment: Stuckler *et al*. (2009) found no evidence of an impact of a 1% rise in unemployment on age-standardised mortality rates for a number of causes of death (cardiovascular disease, cardiovascular disease in people aged 0-64 years, ischaemic heart disease, and cerebrovascular disease). For men death rates from ischaemic heart disease at ages 30-44 years were positively related to unemployment (0.85%, 0.06-1.64). For women no significant association with ischaemic heart disease was found. Eastern Region PHO investigators found an upward shift in the number of ambulance calls for chest pain as the East of England region entered recession, based on an analysis of monthly ambulance calls data for the period April 2007 to March 2009. However, they note that this is an early broad analysis and may differ to final cleaned figures. Further analysis of

ambulance data calls for chest pain at a national level and for other GORs is needed before this can be accepted as a valid indicator.

Strength of indicator: low (standardised mortality rates); high for ambulance calls for chest pain but further investigation needed.

Indicator: Avoidable mortality

Avoidable mortality is a concept that was introduced to measure the performance of the healthcare system. It measures mortality from conditions amenable to medical interventions (that is, deaths that should have been averted given a timely application of the current medical knowledge and technology). Avoidable mortality is proposed as a measure in the Department of Health draft NHS outcomes framework, though not as an indicator of recession. Given that the indicator is problematic to measure, further work is needed.

Indicators of positive health impacts

Indicator: Road traffic accidents (short-term)

Indicator definition: There are a number of possibilities (age-standardised mortality ratios for road traffic accidents; age-standardised hospital admission rates for road traffic accidents; and ambulance calls for traffic/road transportation accidents)

Comment: There is a significant body of research that shows that road traffic accidents fall during a recession. Stuckler *et al.* (2009) report that age-standardised mortality rates for road traffic accidents fell by 1.39% (2.14 to 0.64) with a 1% rise in unemployment in their analysis of data for 26 European countries between 1970 and 2007. This translates into 290-980 potential fewer deaths [mean 630] EU-wide. In their analysis of monthly ambulance calls data for the East of England for April 2007 to March 2009, Eastern Region PHO investigators report a downward shift in the number of ambulance calls for traffic/transportation accidents, noting that this decrease became particularly marked at the same time as the number of people claiming job seekers allowance increased significantly in January 2009. They add the caveat that this is an early

broad analysis which may differ to final cleaned figures. Further investigation is needed of ambulance trust raw data on calls for traffic/road transportation accidents before this indicator can be accepted as valid.

It is perhaps interesting to note that while, at a population level, road traffic accidents fall during a recession, such accidents and associated mortality may be higher for the unemployed at the individual level. In a study of the Swedish recession of 1992-96 transport mortality was found to be slightly elevated for unemployed males. Here then, and as Stuckler *et al*. (2009) also suggest, an aggregate unemployment rate appears to mask the mortality effects at the subgroup or individual levels.

Strength of indicator: high (age-standardised mortality rate); high (ambulance calls data for traffic/road transportation accidents but limited to one GOR)

DIRECT MEASURES OF HEALTH IMPACTS: Medium-term (3-9 years) and long-term (10+ years) effects

These effects are much more difficult to measure as they are longer-term. The effect upon health for a cohort who experienced unemployment in a recession cannot be easily identified in aggregate trend data simply because of such factors as changes in the population size, post-recession trends in health and fluctuations in labour market circumstances, and changes in government policies to ameliorate the effects of unemployment. The only way such effects can be properly investigated is in longitudinal datasets such as the ONS Longitudinal Study.

In the case of the recessions of the early 1980s and early 1990s, characterised by mass unemployment, both coincided with the taking of the decennial census so we are able to establish health impacts at 10 years (for the early 1990s recession) and at 10 and 20 years for the 1980s recession among those who were unemployed or in disadvantaged labour market positions on Census day. For the 1991 and 2001 Censuses we have a measure of morbidity in terms of limiting long-term illness and for the 2001 Census the addition of general health. The ONS Longitudinal Study also incorporates vital registration data, including deaths. We will lack that cross-sectional data for the 2008-9 recession as it did not coincide with a census year.

The ONS Longitudinal Study has been exploited by a number of scholars to look at the medium and long-term effects of unemployment in economic downturns. Research

undertaken by Dorling *et al*. (Dorling 2009; Dorling and Gunnell 2003; and Mitchell & Dorling 2000) has shown that for young people there is a continuum of health damaging states from being unemployed at one extreme to being placed on what were then known as youth opportunity schemes in the 1980s, to having a paid apprenticeship, to having a secure job, and to being in college. Youth opportunity schemes were found to be almost as detrimental to psychological good health as unemployment. Temporary employment was slightly better but not as beneficial as a properly rewarded and organised apprenticeship. Better than all these was secure employment. However, the best option for men and women aged 16-24 in the 1980s and 1990s was going to college '…because factors associated with going to college were associated with lower suicide risks by the 1990s' (Dorling 2009). Consequently, Dorling has recommended a 10% increase in the proportion of young people going to university.

An investigation of the health data collected in the more than 20 longitudinal studies currently running in the UK may help establish the feasibility of developing longer-term indicators. For example, if higher rates of alcohol use and smoking occur among the unemployed during and post-recession, longer-term health consequences might be seen in the form of higher lung cancer rates and mortality among the unemployed and higher rates of alcohol disease and mortality.

NEXT STEPS

For a candidate indicator of the impact of the recession on population health to be of value to public health practitioners, it must meet the criteria of both validity and utility. Clearly, indicators which are valid measures are of no use if they cannot be populated with routine health data. Moreover, such data needs to be collected on a comprehensive basis for the whole of England to be of utility to the network of public health observatories and public health practitioners in the different Government Office Regions. Ideally, too, such data should be capable of being compiled on a quarterly basis to satisfactorily monitor the ongoing impact of the recession. In practice, these constraints may limit the number of candidate health indicators that can be developed.

On the criterion of validity, such candidate indicators need to be causally related to macroeconomic changes. A systematic review is needed to identify the causal relationships between a number of measures of macroeconomic change and population health (or the health of segments of the population such as the unemployed). Such relationships are likely to be nuanced, involving, for example,

consideration of different magnitudes of change, the length of period over which such changes occur, and pre-recessionary labour market circumstances at the local level. This rapid scooping study has only been able to explore a coarser set of indicators, many of which may prove to be impervious to macroeconomic changes as such changes would be masked by many other factors.

However, some progress could currently be made through synthetic estimation methods. The work of Stuckler *et al.* (2009) points the way. For example, these investigators have estimated that every 1% rise in unemployment rates was associated with a 0.79% rise in suicides at ages younger than 65 years. Such metrics can be applied to age-specific population level data on suicides using appropriate multiples with respect to the increase in the unemployment rate that has occurred in a specific geographical area. While such methods are crude and unable to take into account specific factors that are relevant at a local/regional level, they can be justified on the ground that they may provide the only data currently available of the impact of the recession at a population level on that aspect of health. It is better that health and local authority organisations are able to utilise a defensible method of estimating the impact of the recession on the health of their populations than none at all, even if the method is not ideal, so that provision can be made in budgets for tackling these impacts.

The best next step, then, is to assemble a group of public health professionals/practitioners and academics who have worked in this area or who have knowledge of routine sources of health data and expertise in indicator construction to take a closer look at the feasibility of developing indicators to monitor the impact of the recession on public health. An important part of such feasibility work would be to identify topic areas amenable to systematic review, to enable work to proceed on health indicators that the evidence base show are *causally* related to macroeconomic change.

REFERENCES

Anon. Public health in a recession. Nursingtimes.net. 23 November 2008. http://www.nursingtimes.net/public-health-in-a-recession/1931623.article

Bajekal M *et al*. *Review of disability estimates and definitions. DWP In-house Report No. 128*. London: DWP, 2004.

Balloch S *et al*. *Caring for Unemployed People: A study of the impact on demand for personal social services*. London: Bedford Square Press, 1985.

Beatty C & Fothergill S. *The detached male workforce*. 2003.

Clark J, Latter J, Pereira I, Leary K, Mludzinski T. *The economic downturn – the concerns and experiences of women and families*. London: Government Equalities Office, 2009 (March).

Department for Work and Pensions. *Monitoring the impact of the recession on various demographic groups.* London: DWP and Government Equalities Office, 2009 (June).

Dorling D. Unemployment and health. *BMJ* 2009; 338: b829.

Dorling D, Gunnell D. Suicide: the spatial and social components of despair in Britain 1980-2000. *Trans Inst Br Geographers* 2003; 28: 442-60.

Eastern Region Public Health Observatory. *The impact of the recession on health*. Cambridge: ERPHO, 2009 (September).

Gleave S, Bartley M, & Wiggins RD. *Limiting long-term illness: A question of where you live or who you are? A multilevel analysis of the 1971-1991 ONS Longitudinal Study*. London: Social Statistics Research Unit, 1997.

Goldberg D & Bridges K. Screening for psychiatric illness in general practice: the general practitioner versus the screening questionnaire. *Journal of the Royal College of General Practitioners* 1987; 37: 15-18.

Government Equalities Office. *The economic downturn – the concerns and experiences of women and families. Qualitative and quantitative research. Research findings.* London: Government Equalities Office, 2009 (March).

Gruer L. *The potential impact of the recession on health in Scotland and the implications for NHS Health Scotland. HS Paper 2/09*. Edinburgh: NHS Scotland, 2009 (January).

Kondo N, Subramanian S, Kawachi I, Takeda Y, Yamagata Z. Economic recession and health inequalities in Japan: an analysis with a national sample, 1986-2001. *J Epidemiol Community Health* 2008; 62: 869-75.

Mitchell R, Dorling D, Shaw M. Inequalities in life and death. What if Britain were more equal? 2000. www.jrf.org.uk/sites/files/jrf/jr086-inequalities-life-death.pdf.

ONS. LFS. Economic inactive: Long Term Sick. Percentage, UK, seasonally adjusted. BEDS, BEEQ, BEHI. http://www.statistics.gov.uk/statbase. 2009.

ONS. *The impact of the recession on the labour market*. London: ONS, 2009 (14 May).

OPCS. *OPCS Monitor DH4/81/4*. 6th October 1981.

Platt S. Unemployment and Para-Suicide in Edinburgh, 1962-1982. *Unemployment Unit Bulletin*, No. 10.

Richards T. Governments must act now to prevent slide into poverty and ill health after recession. *BMJ* 2009; 339: b4087.

Stafford B & Duffy D. *Review of evidence on the impact of economic downturn on disadvantaged groups. Working Paper No. 68*. London: Department for Work and Pensions, 2009.

Stuckler D, Basu S, Suhrcke M, Coutts A, & McKee M. The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. *Lancet* 2009; 374: 315-23.

Tapia-Granados J. Increasing mortality during the expansions of the US economy, 1900-1996. *Int J Epidemiol* 2005; 34: 1194-202.