Why we need area statistics to improve the nation's health

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Outline of the argument

- Why we need health statistics for small areas
- How small are the health areas?
- Trade offs in health allocations: just population by age and sex versus SMR<75 versus DFLE
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- What happens if you invest more in deprived areas and less in affluent areas?
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Why we need health statistics for health areas

- To **monitor health inequalities** because health inequality reduces everybody's health and because we believe in social justice (Wilkinson and Picket 2009 The Spirit Level)
- To generate **suitable measures for the NHS allocation formulae** to provide funds to NHS local agencies or Local Authorities designed to reduce the inequalities
- Because NHS planning is organised in **three year periods**, we need them more frequently than decennial censuses
- The NHS patient data bases measure **revealed demand** through treatment and diagnosis not **unmet need** hidden by late presentation and premature mortality
- The Department of Health through its Advisory Committee on Resource Allocation (ACRA) has **commissioned lots of work** on health inequalities/unmet need by the brightest and best academic health social scientists but none of it has so far convinced ACRA
- ACRA recommended use of SMR<75 to NHS England for use in its **latest interim allocations** to Clinical Commissioning Groups (CCGs) for 2013-2014 as the inequality compensation indicator. SMRs are produced by ONS.
- Previously, for Primary Care Trust allocations, the Department of Health had used **Disability Free Life Expectancy** which combines census based information on disability (limiting long-term illness) with deaths and population data but 2011 DFLEs were not available for late 2012 and so not used.

How small are the Health Areas?

- "Health warning for GIS wonks": **NHS Health Areas change** with each successive government and sometimes when Secretaries of State for Health change. Note that neither CCGs nor GP practices are "crisp regions".
- Currently, NHS England allocates **secondary care funds** to **CCGs** based on a complex formula and **primary care funds** to **GP practices** based on a simpler formula reflecting work load (number and age of patients)
- There are ~150 CCGs and ~325 LAs to which funds are distributed. So, the Admin + Survey option should deliver frequent **DFLE estimates with reasonable uncertainty intervals**. "With **one** year's survey data, reliable statistics could be produced on the number of People with a limiting long term illness in each LA" (ONS Consultation Workshop slides) [Indirect methods would be needed]
- There are ~8000 GP practices in England with ~56.3 million patients, an average of ~7000 patients per practice, so they are roughly comparable in population size to MSOAs. "With three years' survey data, reliable statistics could be produced on the number of: People with a limiting long term illness in each MSOA" (ONS Consultation Workshop slides) [Indirect methods would be needed]
- So CCGs could plan more sophisticated allocations to **GP practices** with their groups

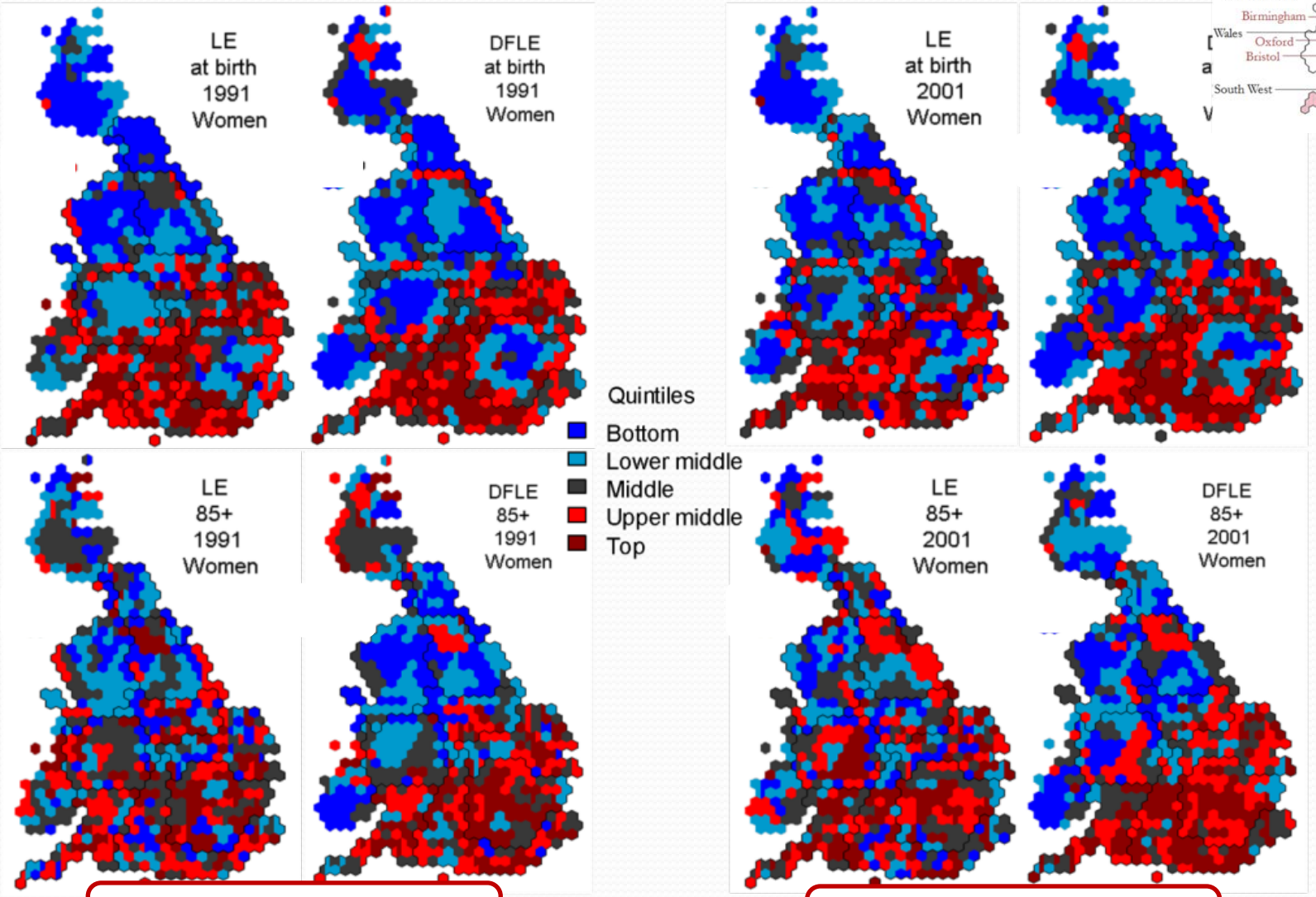
Trade offs in health allocations: just population by age and sex versus SMR versus DFLE

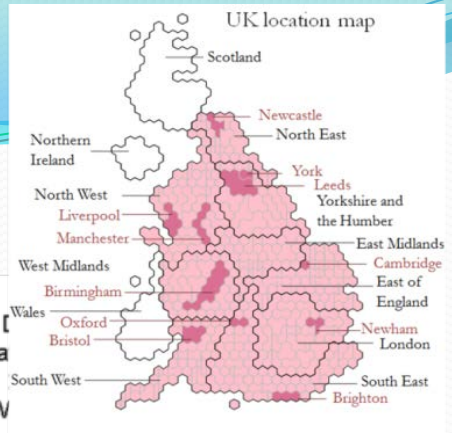
- What are the consequences of using cruder versus more sophisticated information about people?
- Although the major part of demand for health care is a result of the age make-up of a population, we cannot ignore socio-economic factors. When the previous Secretary of State for Health proposed dropping the health inequality adjustment in the CCG formula, this resulted in massive transfers from deprived and slow growing northern and midland areas to affluent older and fast growing southern areas
- Adding back in use of a SMR<75 indicator restores some of the inequalities adjustment. However, the indicator has two problems: it only covers mortality (and not ill-health) and it only covers people aged less than 75 (is this fair?)
- Therefore it is better to use an indicator like DFLE which includes ill-health as well as mortality, is not restricted to "younger people" and reveals a much greater inequality range.

Census Evidence on the North/South Divide”

1991

2001





At birth

85+

LE DFLE

LE DFLE

Pure mortality versus combined mortality and morbidity

♀ women

♂ men

	LE				DFLE			
Percentile	1991		2001		1991		2001	
	Birth	85+	Birth	85+	Birth	85+	Birth	85+
75%	80.05	6.61	**81.85**	**6.79**	65.81	1.59	**66.87**	**1.63**
50%	79.14	6.16	**80.86**	**6.39**	64.3	1.42	**64.81**	1.4
25%	78.14	5.81	**79.79**	**6.00**	62.02	1.25	**62.24**	1.19
IQR	1.91	0.8	**2.06**	0.79	3.79	0.34	**4.63**	**0.44**
75%	74.92	5.29	**77.47**	**5.72**	63.21	1.76	**64.8**	**1.79**
50%	73.86	4.87	**76.46**	**5.35**	61.24	1.56	**62.23**	**1.58**
25%	72.46	4.49	**74.83**	**4.96**	58.77	1.38	**59.45**	**1.41**
IQR	2.46	0.8	**2.64**	0.76	4.44	0.38	**5.35**	0.38

These are data for local authorities in GB using 1991 and 2001 Census data and associated mortality data (three years bracketing the Census)

- **The Inter-quartile range for DFLE at birth is roughly 2 times the IQR for LE**
- **Although the absolute size of IQR for DFLE85 is smaller than that for LE85, the relative differences are much larger**

What happens if you invest more in deprived areas and less in affluent areas?

- There will be a return to health care spend in terms of extra persons years gained through investment [to be researched]
- Those extra years will have a benefit and a cost attached. We might measure the benefit as the average income per capita per year. We might measure the cost as the average health care cost per capita per year.
- The returns to health care spend vary with the current level of health of the population (e.g. current levels of improvement in HLE across countries are much higher in developing countries than in developed: the greatest returns are in developing countries with minimum health services).
- If this relationship applies sub-nationally, we would expect the gain in DFLE in Barnsley, to be greater than the gain in Bournemouth. So there would be a gain in working life earnings to the country.

An imaginary example

- Let us assume we have 500,000 **deaths** in England in a year, 250,000 of which occur in more deprived areas and 250,000 in less deprived areas.
- If we allocated funds using **DFLE**, we might be able to reduce those deaths to 200,000 in more deprived areas while deaths reduced on trend to 225,000 in less deprived areas.
- Using **SMR<75** the more deprived areas might have 225,000 deaths and the less deprived areas 225,000 deaths (no reduction of inequality).
- So under the DFLE scenario, we gain 75,000 person-years of life per year, while under the SMR<75 scenario, we gain only 50,000 person-years. Assuming a life year to be valued at £25,000, then the DFLE scenario would yield a gain of £25k × 25k = **£625million per year** or £6.25 billion over a decade.
- There would be extra costs to the NHS because we would now have more people than before with disability, particularly **dementia**. Let us assume there are 7,500 person years spent in dementia costing £25k per person year for care, i.e. a cost of 7.5k × 25k = £187.5 million per year or £1.875 million per decade.
- So over a decade we save £6.25 billion and spend £1.875 million, which yields a **benefit/cost ratio of 3.33**. Nobody would turn down such an investment opportunity! An online census or alternative would only cost 10-15% of these net health benefits.

My vote

- So, how do I **vote** between one online census per decade and an annual administrative census plus variable period attribute survey?
- My view is that the pace of change in society is such that we need to go for the production of **frequent** information. This is vital for health areas down to CCG where 3 year budgets need refreshing on a three year cycle.
- For **small area allocations** (not so firmly established but still very important) we can live with 5 year averages, I think.
- So my vote is to innovate and go with the **administrative data plus attribute survey**.