national
STATiSTiCS

Health Expectancies: the UK experience

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Background: ONS outputs

- First UK report: "Health Expectancy and its Uses", edited by Bone, Bebbington,Jagger (HMSO, 1995)

- Regular articles in *Health Statistics Quarterly* 2000 onwards (ONS publication)
  - Research papers plus reports to update time series
  - http://www.statistics.gov.uk/statbase/Product.asp?vlnk=6725

- Product page on ONS website with latest figures
  - http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=12964&Pos=1&ColRank=2&Rank=240

Two types of health expectancy series calculated annually by ONS

HLE (Healthy Life Expectancy)

- *Over the last 12 months, would you say your health has on the whole been?*
    - **Good**
    - **Fairly good**
    - Not good

DFLE (Disability-free Life Expectancy)

- *Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time or that is likely to affect you over a period of time.*
    - *Yes/No.*
- *If 'Yes'*
    - *a) What is the matter with you?*
    - *b) Does this illness or disability limit your activities in any way?*
        - **Yes**/*No*

Policy interest

- 3 Government Ministries use it
  - DWP: Social Exclusion of elderly (HLE 65) – *Opportunity for all*
  - DoH: Monitoring QoL of older people (HLE 65) – *National Service Framework*
  - DEFRA: UK Indicators of Sustainable Development (HLE 0) – quality of life

- Other applications
  - Forecasting models (predicting future based on past trends in LLTI)
  - Sub-national inequalities, local planning
  - But issues of bias in self-reported measures, resource allocation rejected
  - LE of disabled vs LE non-disabled ('Life Chances of Disabled')

Pensions Commission

- "Challenges and Choices", 2004
  - Increasing state retirement age in line with LE
  - SES variation in HLE

- Interest particularly in work-limiting disability among people aged 50-70.

- Requires robust 'fitness-to-work' measure.

- Conceptually different to the independent living focus of health and social care planners.

UK Parliament: 'healthy ageing'

- Report of Lords Science & Technology Committee, 2005. "Ageing: Scientific aspects"
  - Interest mainly in active life expectancy (based on ADL functioning) as health resource/societal cost focused.
  - Recommendations: longitudinal survey of disability, objective measurement (performance tests), more research.
  - Specific direction to "explore work with international organisations … to help develop harmonised measures of healthy life expectancy".

- Parliamentary Office for Science & Technology (POST) produced summary of concept, key issues for MPs, 2006

postnote

HEALTHY LIFE EXPECTANCY

Will the UK's ageing population be vibrant and
independent, or suffer from greater chronic ill health?
Healthy life expectancy (HLE) is commonly used to try
to assess this: it is an estimate of how many years are
lived in good health over the lifespan. Such data are
invaluable for predicting future needs, evaluating health
programmes and identifying trends and inequalities.
They can inform planning of health and social services,
long term care and pensions. This POSTnote reviews
the current debate on HLE, outlines possible future
scenarios, and looks at the pros and cons of different
HLE measures.

Background
What should be measured?
There are several approaches to assessing a population's
health: historically, one of the most important has been
life expectancy (LE; see Box 1). LE at birth has risen by
five years for men and almost three for women in the last
twenty years, and most people now live to ages in which
they are more likely to experience chronic disease and
disability (Table 1).

**Table 1. Trends in life expectancy and healthy life
expectancy at birth, 1981 to 2001**

	Women		Men	
Year	1981	2001	1981	2001
Life expectancy	76.8	80.4	70.9	75.7
General HLE	66.7	68.8	64.4	67.0
% life in 'good' or 'fairly good' health	86.9%	85.6%	90.0%	88.5%

Source: www.statistics.gov.uk

In recent years, self-reported overall general health status
has been increasingly used to calculate HLE, which is a
measure of the balance between length and quality of
life. Health expectancies can be measured in several
ways, including life expectancy in good health, free from
disability, or free from a specific disease. They all
combine data on illness and death to provide a single
summary measure (Box 1).

Box 1. Different ways of measuring health
Life expectancy (LE) at birth
Life expectancy has long been used as an indicator of
population health. It is increasingly seen as too crude to
measure a population's health as it does not take into
account chronic disease and disability.

Healthy Expectancies
Self reported healthy life expectancy
Two types of HLE are routinely calculated from the following
(abridged) national General Household Survey questions:
- General HLE: "Over the last 12 months would you say
  your health has been … good, fairly good, or not good?"
- LE free from limiting long-term illness: "Do you have
  any long-standing illness, disability or infirmity?"

Levels of reported ill health are combined with mortality data
to estimate the number of years of healthy life an individual
will live. Self-reported poor health is strongly linked with
mortality and health service use. However, levels of self-
reported health vary systematically over time and social
group, making comparisons difficult. This might reflect real
differences in health between groups, or could be due to
changing health expectations. For instance, a recent US
study found that younger people and people on higher
incomes did not report disability until a higher level of tested
limitation than those in older groups and those with lower
incomes[1]. Changes in disability allowances and
unemployment benefit might also influence people's
inclination to report themselves as ill.

Disability free life expectancy (DFLE)
Disability-free life expectancy measures disability by looking
at reported limitations in day to day activities such as work,
school and leisure activities. The General Household Survey
has included such questions in certain years for 65+ year
olds. More severe disability and dependence can be
measured by people's ability to carry out activities of daily
living such as bathing, dressing, and shopping (which can
be used to calculate dependency-free life expectancy). Such
measures of functional ability are considered to be more
independent of social factors than self-reported health.

However, the self-reported health questions in Box 1 do
not distinguish between types of health problem. For
instance, they do not distinguish between long-term
conditions such as diabetes, which can be managed and

Current ONS statistics

- Monitoring population health
  - Over time (annual survey data – UK + 4 countries)
  - Geography (Census: lowest sub-national 1,000+ pop)

- Measuring health inequalities
  - By area deprivation (survey + Census)
  - Between social groups (LS – class)

- European comparisons
  - European Health Expectancy Monitoring Unit
  - EU-SILC (harmonisation of instruments)

LE and DFLE for men at age 65 in Great Britain, 1981-2002 (*HSQ 19, HSQ 29*)
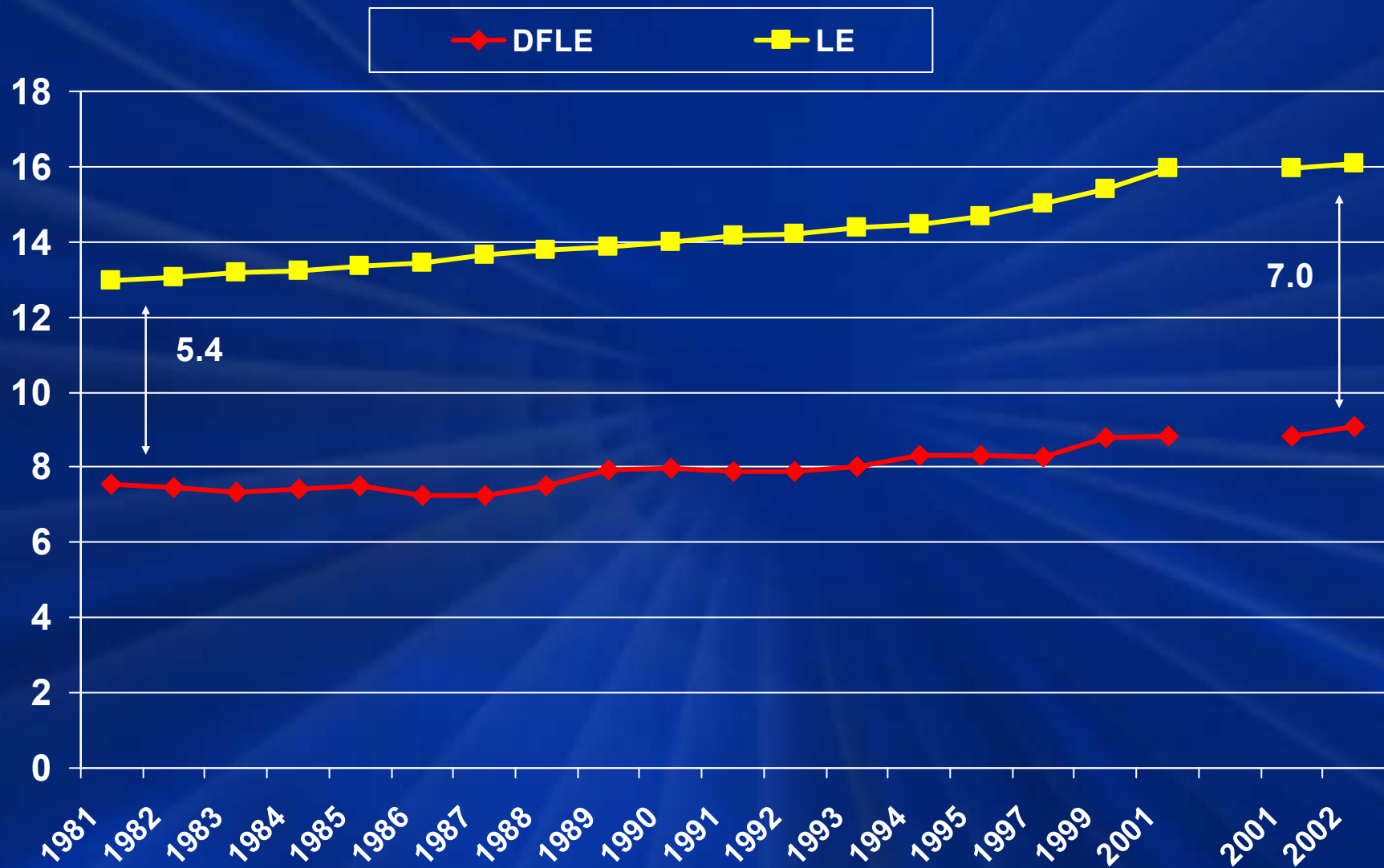
Trends in mild, moderate and severe disability-free life expectancy, GB

Those with any activity limitation partitioned into 3 non-overlapping sets to calculate 3 measures:

- **Severe DFLE** based on inability to perform Activities of Daily Living (ADLs e.g. bathing, feeding and getting in and out of bed) without human assistance.

- **Moderate DFLE** based on inability to perform Instrumental Activities of Daily Living (IADLs e.g. shopping, preparing meals and cleaning windows) without human assistance

- **Mild DFLE** (the 'rest') based on those with limitation but not ADL or IADL limited

Trends (1a) _Males @65: Number of expected years in each health state. 1980-2001, GB

Year	No disability	Mild disability	Moderate disability	Severe disability
1980	7.5	2.5	1.6	1.3
1985	7.8	2.3	1.8	1.5
1994	8.3	3.1	1.8	1.3
1998	8.7	3.4	1.8	1.3
2001	9.2	3.3	2.1	1.3
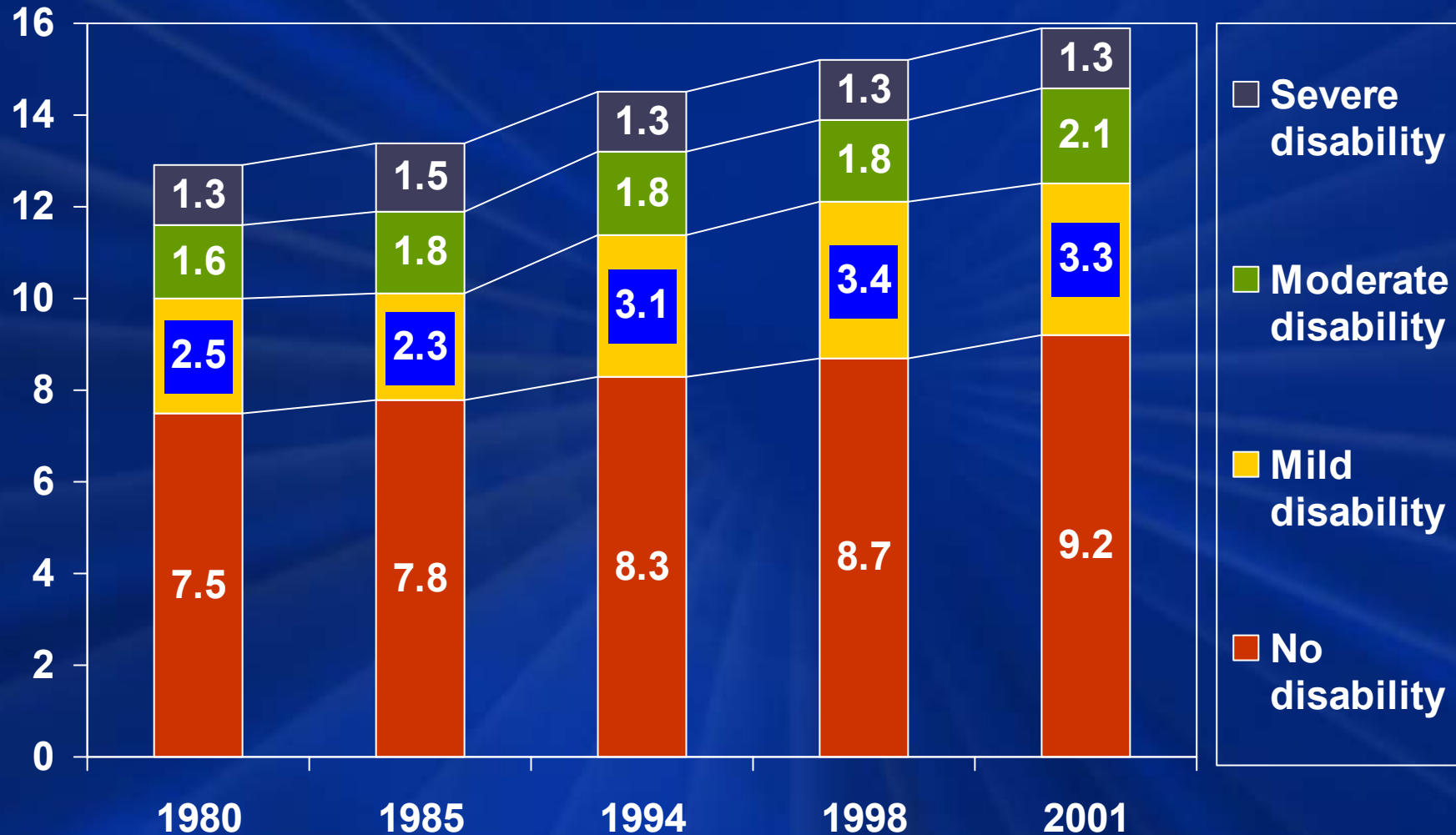
Trends (1b) _ Males @65: Proportion of expected life in each health state. 1980-2001, GB

Year	No disability	Mild disability	Moderate disability	Blue band	Severe disability
1980	58.1		12.4	19.4	10.1
1985	58.2		13.4	17.2	11.2
1994	57.2		12.4	21.4	9.0
1998	57.2		11.8	22.4	8.6
2001	57.9		13.2	20.8	8.2

Legend:
- Severe disability
- Moderate disability
- Mild disability
- No disability

Trends (2b) _ Females @65: Proportion of expected life in each health state. 1980-2001, GB

	1980	1985	1994	1998	2001
Severe disability	14.8	12.8	15.4	14.6	14.1
Moderate disability	17.2	20.9	19.8	20.5	18.8
(Mild disability)	18.3	13.4	10.4	13.0	11.5
No disability	49.7	52.9	54.4	51.9	55.5

Legend: Severe disability, Moderate disability, Mild disability, No disability
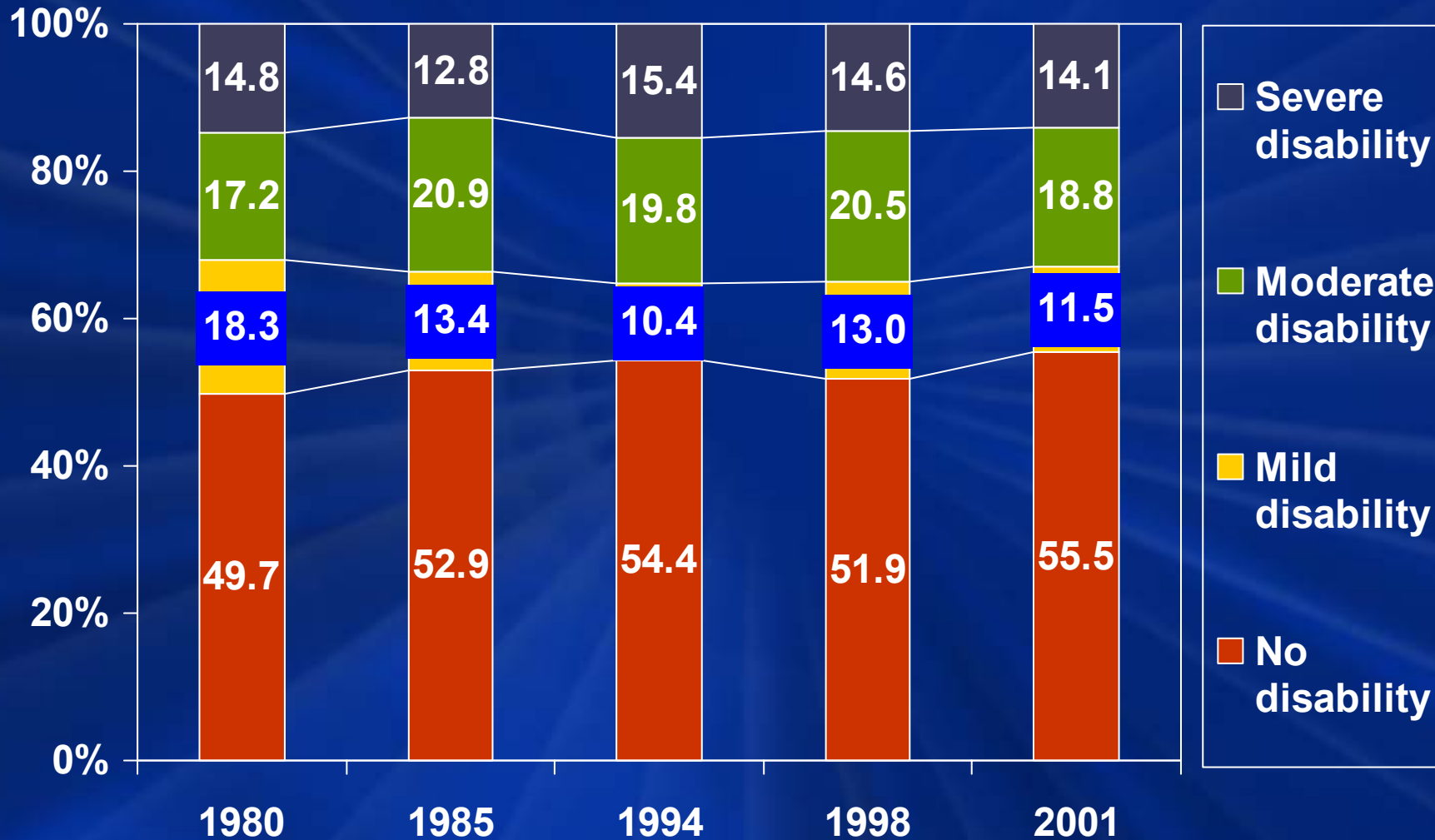
Preliminary conclusions: at age 65

- Trends: are not the same for men and women.

    – For men, the magnitude of the change less marked: proportion of life with mild disability has increased and severe disability decreased, supporting the theory of dynamic equilibrium.

    – The amount of time spent without disability for women has increased since 1980, supporting the theory of compression of morbidity

Expected years of life with and without disability at birth by deprivation twentieth (vingtiles)
Males, England and Wales, 2001.

Chart: Years of life (y-axis, 0–80) by Deprivation Twentieths (x-axis, 1–20). Least <-----------Deprivation Twentieths-----------> Most

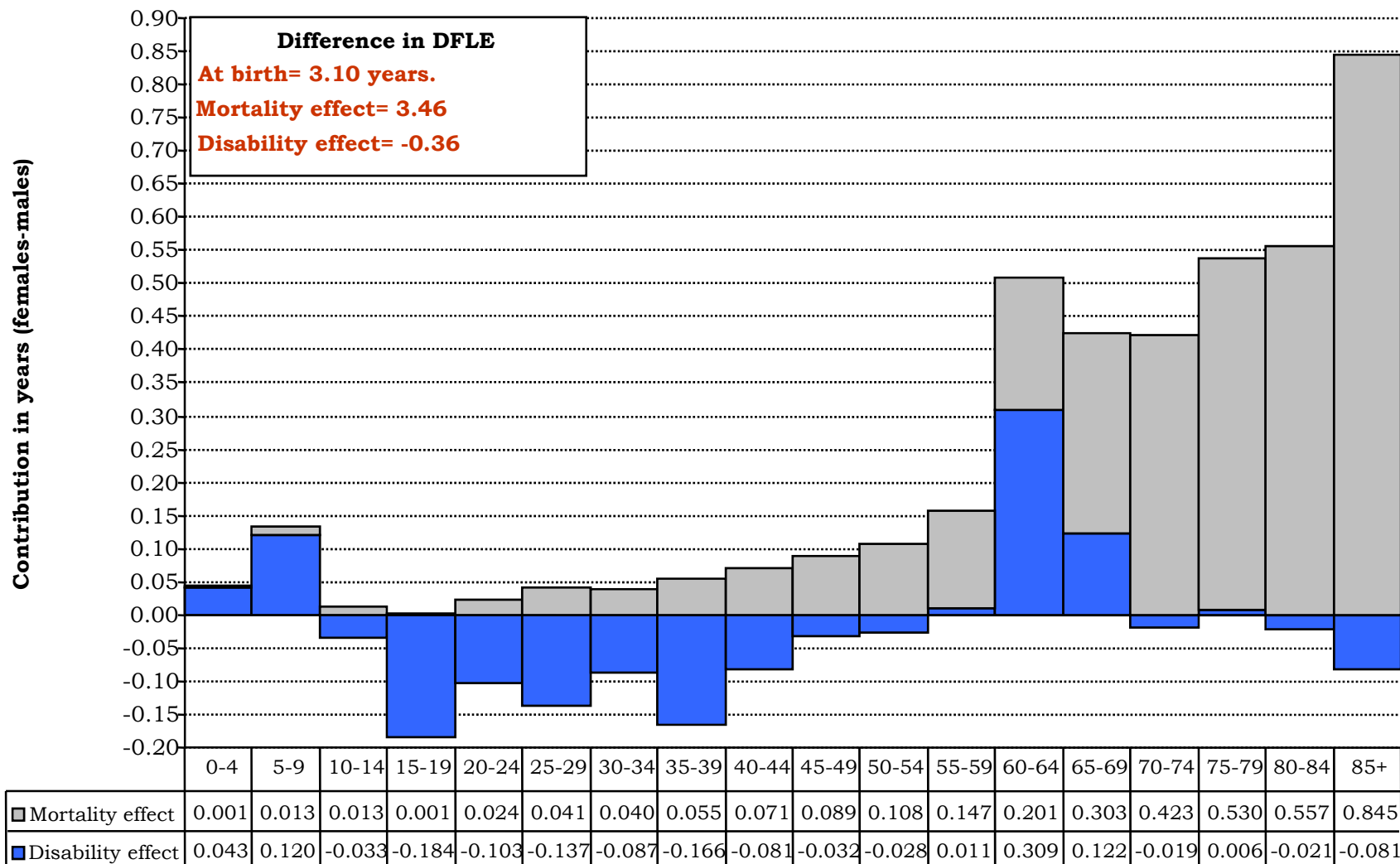| Twentieth	With disability	Disability-free
1	11	68
2	12	67
3	12	66
4	13	65
5	13	65
6	13	65
7	13	64
8	14	63
9	14	63
10	14	62
11	15	61
12	15	61
13	15	60
14	16	59
15	16	58
16	16	57
17	17	57
18	17	56
19	17	55
20	18	54

Legend: Disability-free ■ With disability
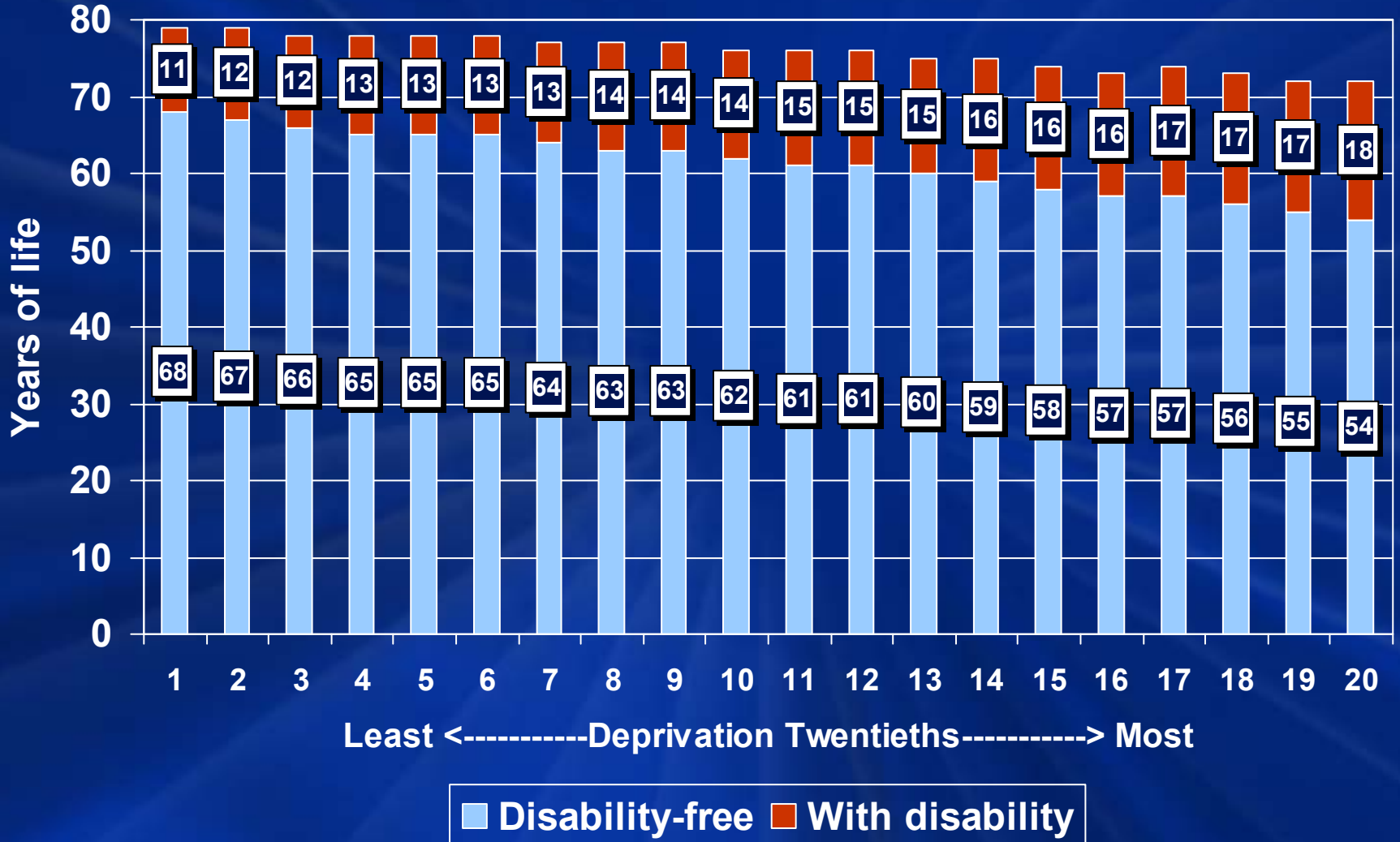
Survival curves for the least and most deprived twentieth. Males, E&W, 2001.
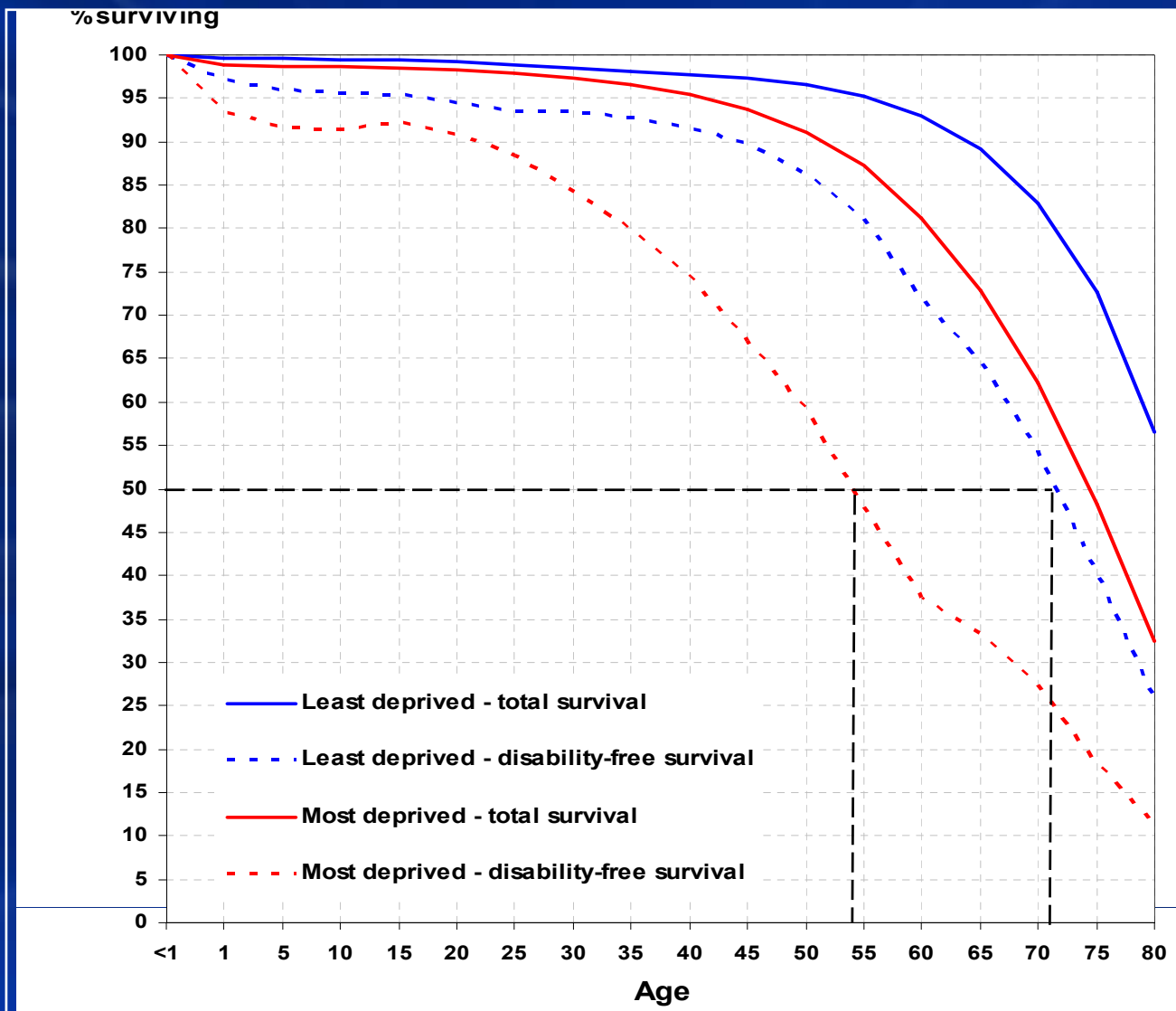
Decomposition of gender differences in DFLE, 2001 (GB).

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
▢ Mortality effect	0.001	0.013	0.013	0.001	0.024	0.041	0.040	0.055	0.071	0.089	0.108	0.147	0.201	0.303	0.423	0.530	0.557	0.845
▪ Disability effect	0.043	0.120	-0.033	-0.184	-0.103	-0.137	-0.087	-0.166	-0.081	-0.032	-0.028	0.011	0.309	0.122	-0.019	0.006	-0.021	-0.081

Difference in DFLE
At birth= 3.10 years.
Mortality effect= 3.46
Disability effect= -0.36

EU-SILC – implications for HE series in the UK

- Long-running series – ends 2004 (1981-2004)
- 2005 GHS(L) for EU-SILC
  - General health question – 5 point and 3 point scale
    - Parallel series for 3 years to assess direction of trends, calibration of discontinuity

  - Harmonised disability question (GALI) – not filtered on chronic morbidity, defined duration, 2 severity categories
    - Impact of change from old LLSI q to be tested in 2007/8

  - 4-year rotating panel: implications for 3-year average as only 25% of the sample will be fresh cross-sectional each year.

Future work plan 2007-2009

- Understanding change in LE / DFLE
  - Decomposition methods (eg. Arriga, Nusselder)
    - Over time - by age, deprivation, cause
    - Between groups/areas - by age, deprivation, cause

- Methodological challenges
  - Critical review of self-assessed health status measures
  - Cultural differences in reporting behaviour
  - Health-adjusted LE using EQ5D

- More research collaboration:
  - Academics (2 ESRC projects)
  - Industry (actuarial profession)
  - Policy research institutes

Key information gaps

- Operational instruments – 'fitness-to-work' and 'frailty'
- Inter-relationship between global SRH and
  - 'Objective' disability prevalence by type, severity
  - Cause-specific morbidity
- Cross-national comparisons

- Data gaps specific to UK:
  - Period life tables for population subgroups – ethnicity, social position
  - Longitudinal data
    - **Disability survey in 2009/2010 (life chances, onset and dynamics)**
    - **All ages, sub-groups (ethnic, institutional, oldest-old)**

Different estimates of disability, by age group