

Incidence of conditions considered amenable to health care in Scotland

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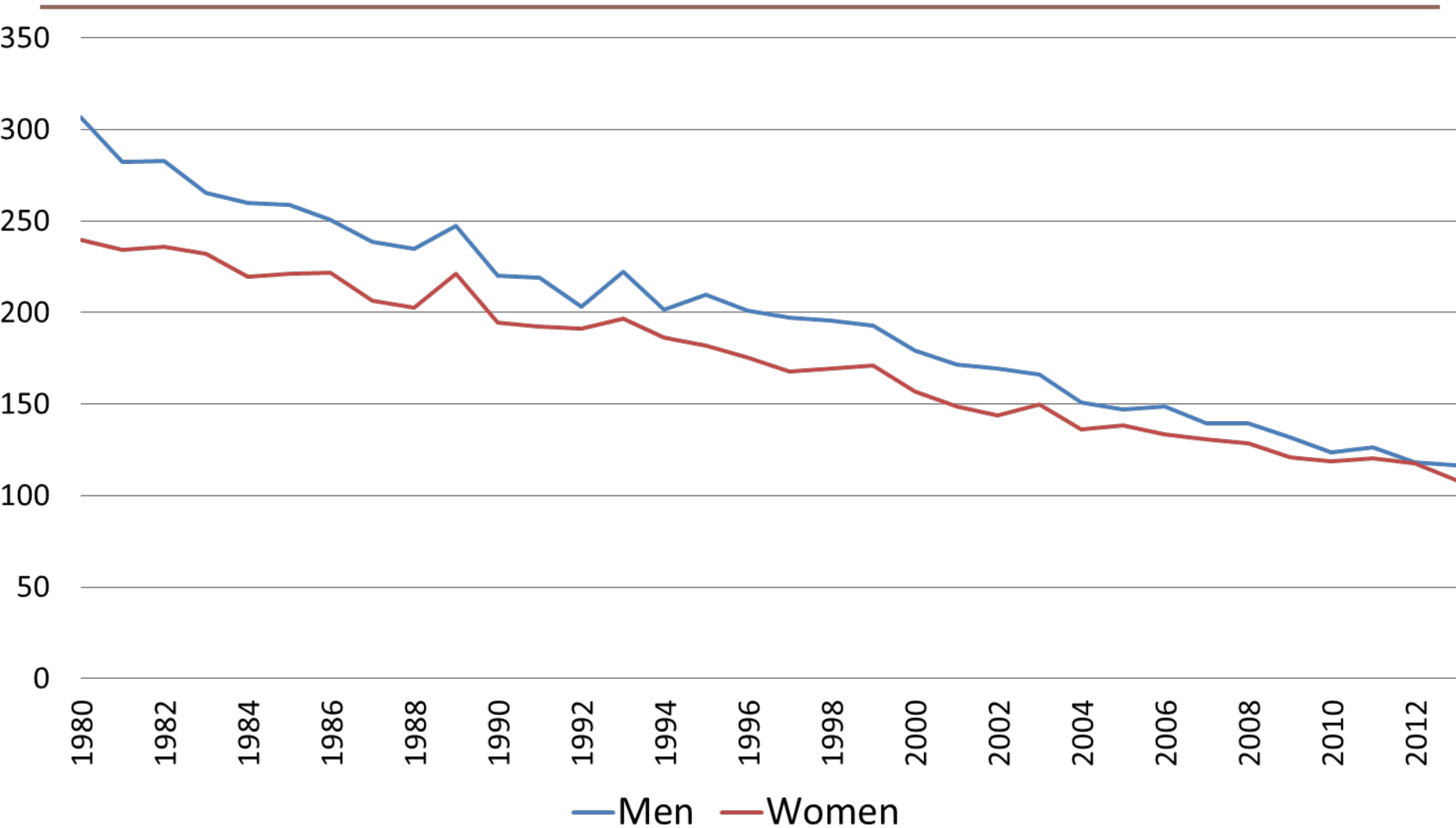
Background

Premature deaths which should not occur in the presence of timely and effective health care

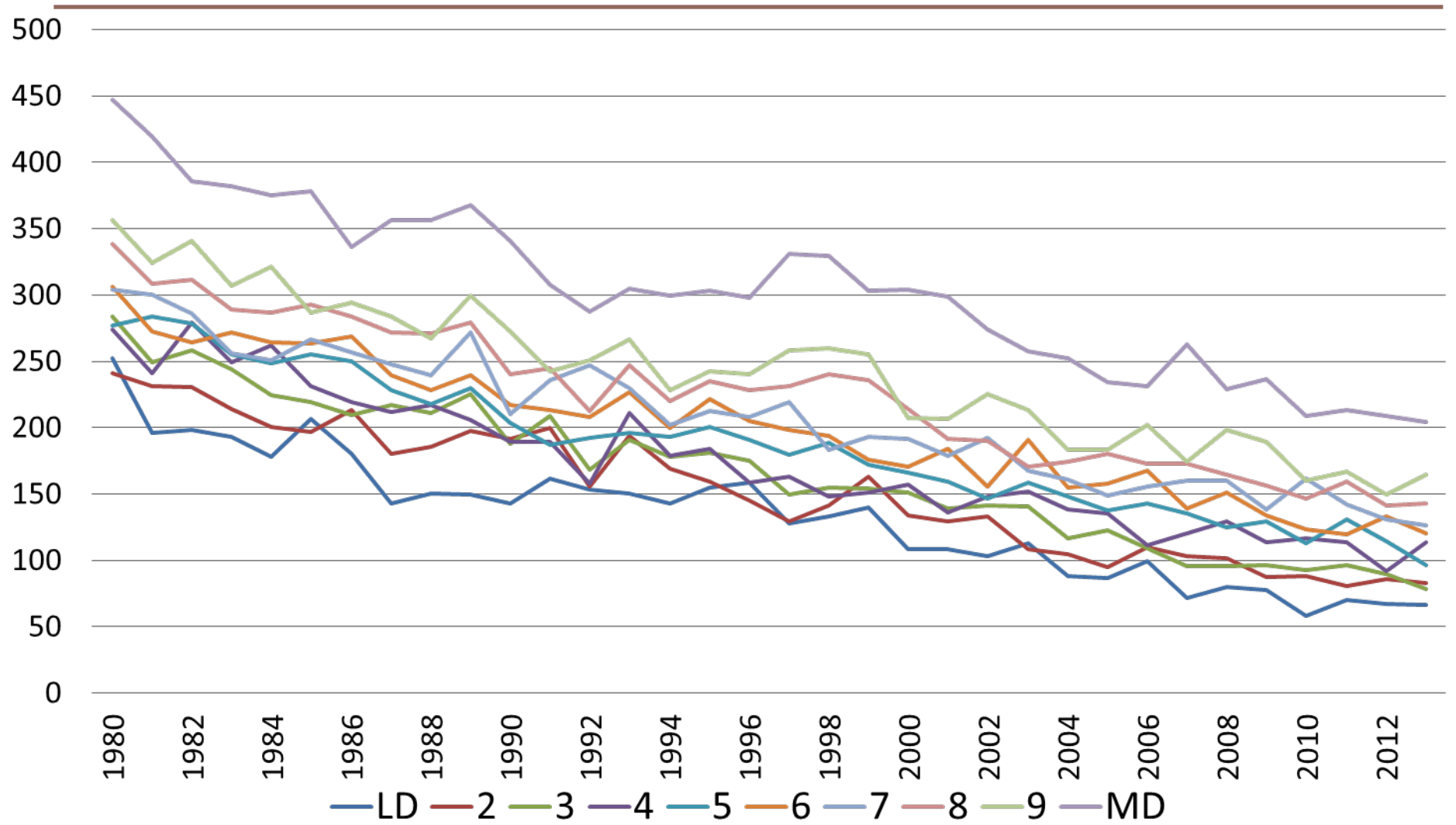
(Nolte and McKee, 2004)

- 52 causes:
 - E.g. measles, TB, breast cancer, hypertension, maternal deaths and surgical misadventure
- Age limit <75 years
- Groups of causes:
 - Primary prevention e.g. measles, rubella
 - Early detection and intervention e.g. selected cancers
 - Improved treatment and medical care e.g. diabetes, pneumonia

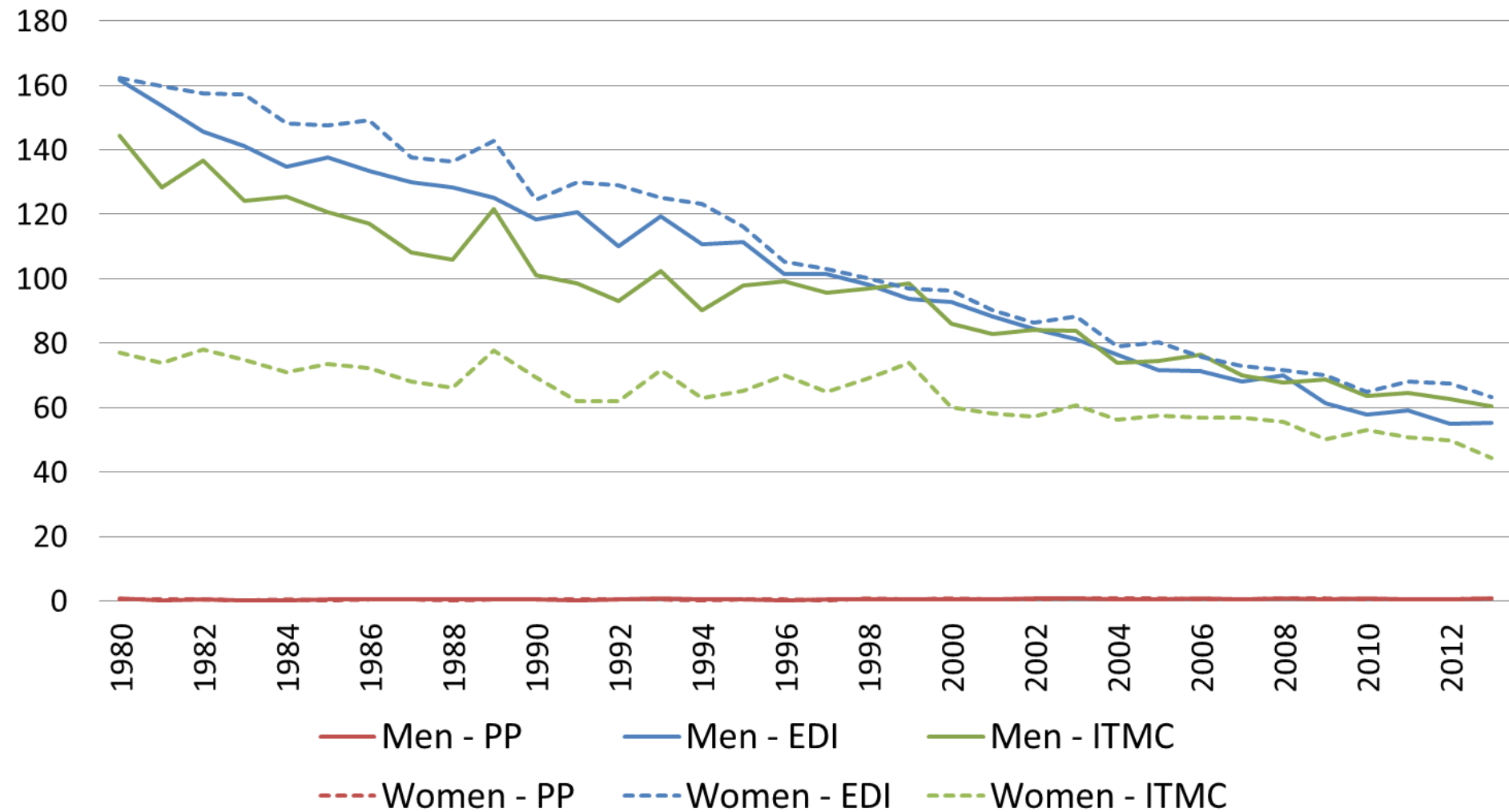
Age standardised mortality rates (1980 - 2013)



Age-standardised mortality rates by deprivation decile - men



Age-standardised mortality rates by diagnosis group



Conceptual problems

- Interpreting trends over time
 - Increased effectiveness of health care
 - Improvements in screening, immunisations and treatments, as well as earlier intervention
 - Changes in disease incidence
 - Bauer and Charlton (1986)
 - England & Wales – 10% sample of hospital discharge & disease registry data
 - Treurniet et al. (1999)
 - Netherlands – hospital discharge data only

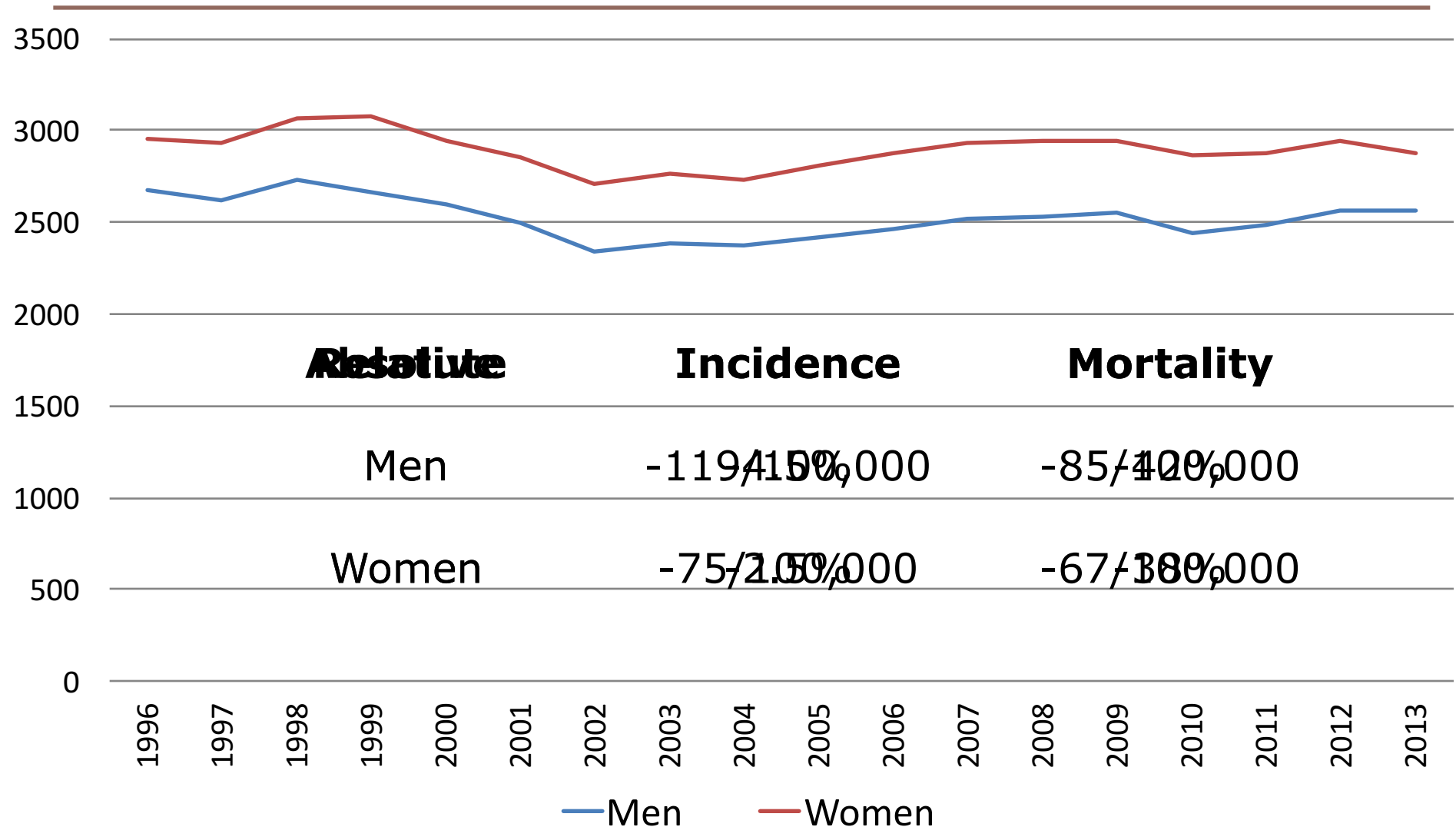
Methods 1: Data

- Linked
 - SMR01 (General/Acute Inpatient and Day Case)
 - SMR06 (Cancer registry)
 - SMR11 (Neonatal Inpatients) / Scottish Birth Records
 - Scottish Death Records
- 1981 – 2013
 - ICD 10 changes 1996 – 2013.
- 6,915,511 records had an amenable condition as the primary diagnosis
- First discharge: 5 year incidence limit (Treurniet et al., 1999)
 - = 3,848,231 incident cases (55.6%).
 - → 2,272,360 in 1996 - 2013

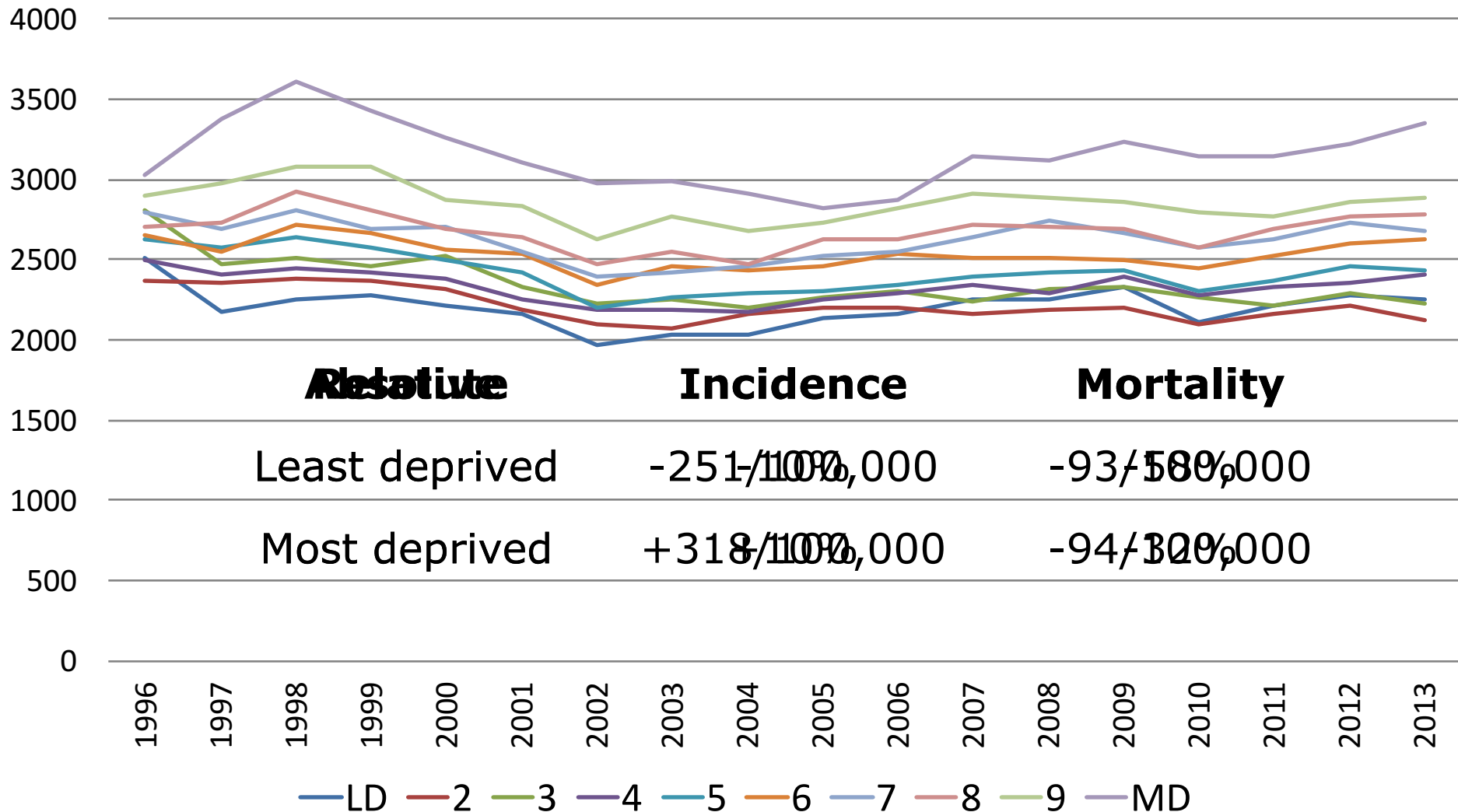
Methods 2: Analyses

- Age standardised incidence rates
 - Sex, deprivation decile
 - Single cause of death and diagnosis group
- Indices of Inequality
 - SII (absolute)
 - RII (relative)
- Age specific incidence rates
- Fractional polynomials
- Multilevel modelling

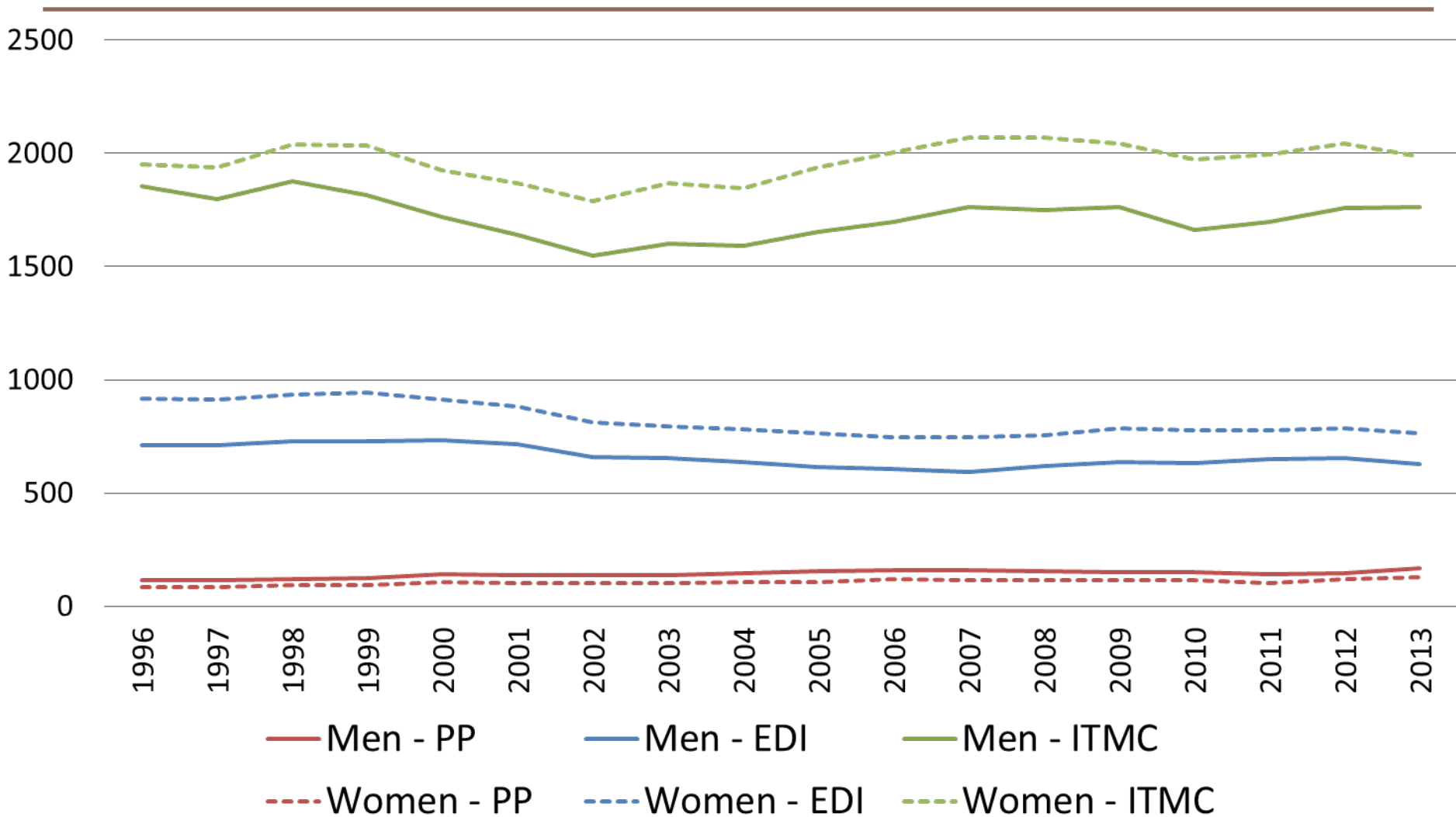
Age standardised incidence rates (1996 - 2013)



Age-standardised incidence rates by deprivation decile - men



Incidence rates by diagnosis group



Proportions of conditions

Mortality

- Bladder cancer
- Breast cancer
- Colorectal Cancer
- Cerebrovascular disease
- COPD
- Diabetes
- Hypertensive disease
- Peptic ulcers
- Perinatal conditions
- Pneumonia
- Septicaemia

Incidence

- Abdominal hernias
- All respiratory diseases
- Benign tumours
- Cholelithiasis & cholecystitis
- Cerebrovascular disease
- Maternal conditions
- Obstructive uropathy & prostatic hyperplasia
- Perinatal conditions
- Pneumonia
- Skin cancer

Inequalities

RII

SII

1996

2013

1996

2013

Mortality

Men

2.1

3.1

141

119

Women

1.7

2.1

88

76

Incidence

Men

1.2

1.6

550

1120

Women

1.2

1.5

570

1230

Limitations

- Limited incident conditions to main diagnosis
- Underestimation of conditions which do not routinely require hospitalisation e.g. diabetes and asthma
 - Prescribing Information System
 - Linked from 2009 onwards
 - Most severe cases
- No measure of case severity
 - Delays to seeking medical care in the more deprived areas
 - Variations in admission policies

To sum up:

- Mortality rates have been falling consistently over time
 - for both men and women
 - across the socioeconomic gradient
 - within diagnosis groups
- Incidence rates have
 - Decreased for men and women overall
 - Increased in most deprived areas
 - Mixed results by diagnosis group

References:

- NOLTE, E. & MCKEE, M. 2004. *Does Healthcare Save Lives? Amenable Mortality Revisited*, London, Nuffield Trust.
- BAUER, R. L. & CHARLTON, J. R. 1986. Area variation in mortality from diseases amenable to medical intervention: the contribution of differences in morbidity. *International Journal of Epidemiology*, 15, 408-412.
- TREURNIET, H. F., LOOMAN, C. W. N., VAN DER MAAS, P. J. & MACKENBACH, J. P. 1999. Variations in 'avoidable' mortality: A reflection of variations in incidence? *International Journal of Epidemiology*, 28, 225-232.

