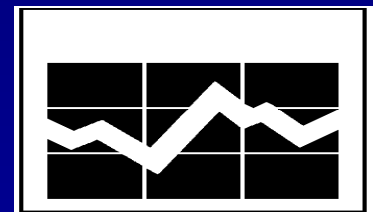


# SOCIO-SPATIAL INEQUALITIES IN HEALTH: A NORTH AMERICAN PICTURE

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## Outline

- Broad Canada-US comparison: infant mortality, life expectancy
- Results from a "natural experiment": Canada-US inequality-mortality comparison
- Temporal and spatial trends in health inequalities in Canada

## Canada – US Infant Mortality Comparison

- Infant mortality rate ratios
- Difference largely due to faster declines in Canada over the period

1970	1.06
1975	1.18
1980	1.21
1985	1.34
1990	1.35
1996	1.39

Source: Duchesne D, Nault F, Gilmour H, Wilkins R. Vital Statistics Compendium 1996. Catalogue 84-214-XPE. Ottawa: Statistics Canada, November 1999; Tables 9.3 (IMR) and 9.4 (LE).

## Canada-US Life Expectancy Comparison

- In fewer than 20 years, the life expectancy gap more than doubled

Year	Male	Female	Total
1976	1.2	0.9	1.05
1981	1.5	1.3	1.40
1986	2.1	1.8	1.95
1991	2.6	2.0	2.30
1996	3.0	2.0	2.50

Source: Duchesne D, Nault F, Gilmour H, Wilkins R. Vital Statistics Compendium 1996. Catalogue 84-214-XPE. Ottawa: Statistics Canada, November 1999; Tables 9.3 (IMR) and 9.4 (LE).

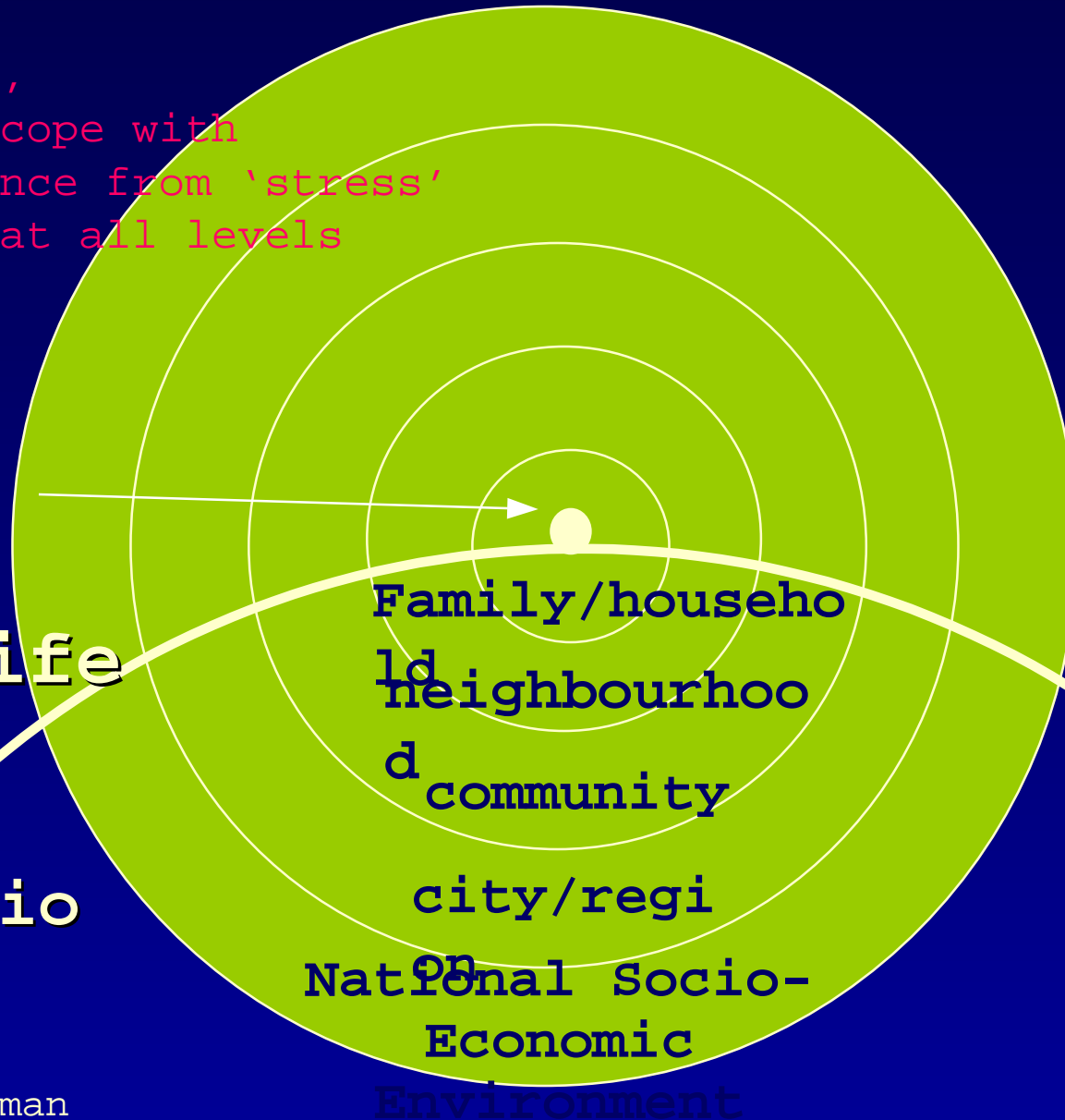
# ...from cell to society..

Exposure to,  
ability to cope with  
and resilience from 'stress'  
implicated at all levels

Individual  
Human Life  
Cycle

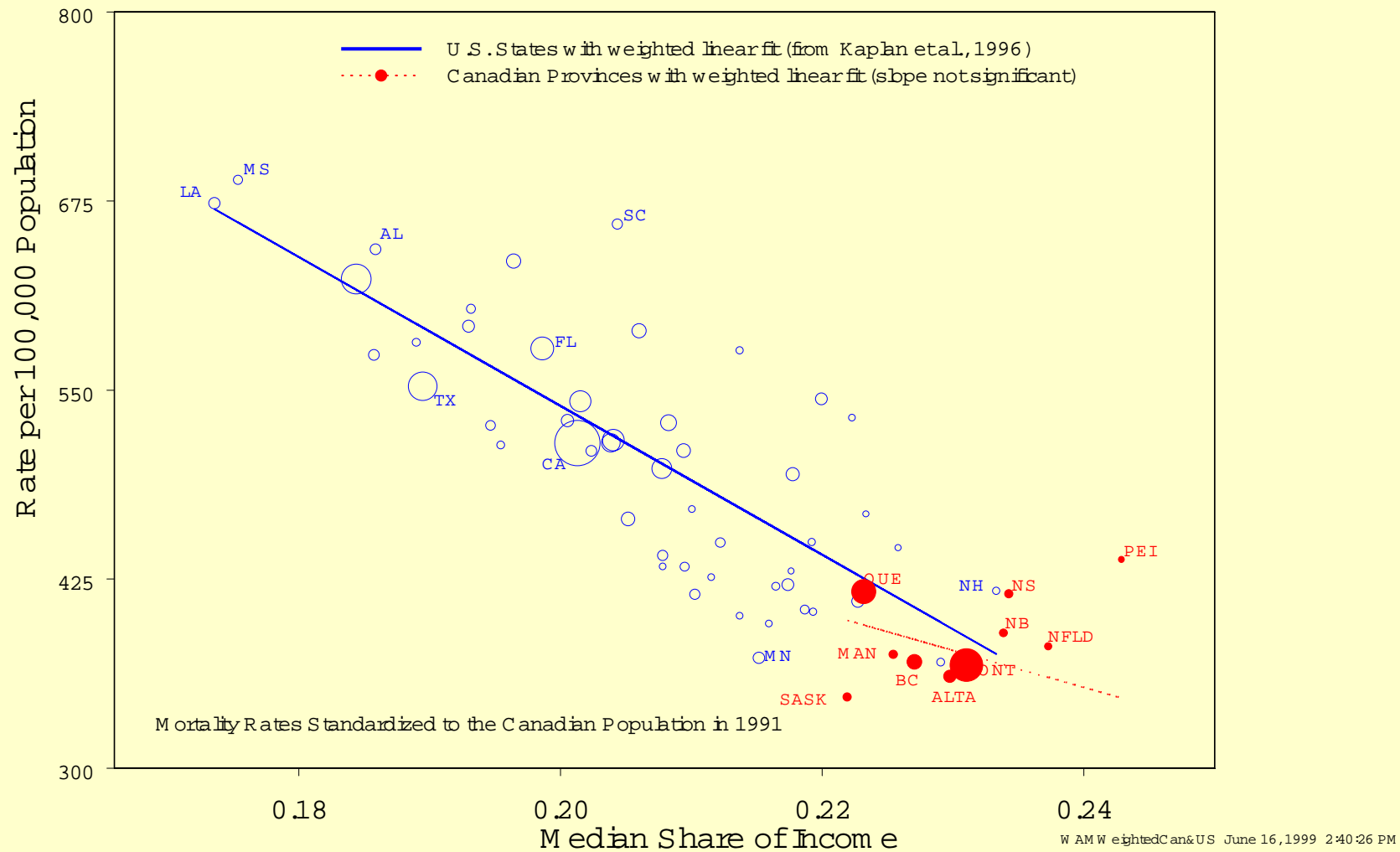
Conception

Death

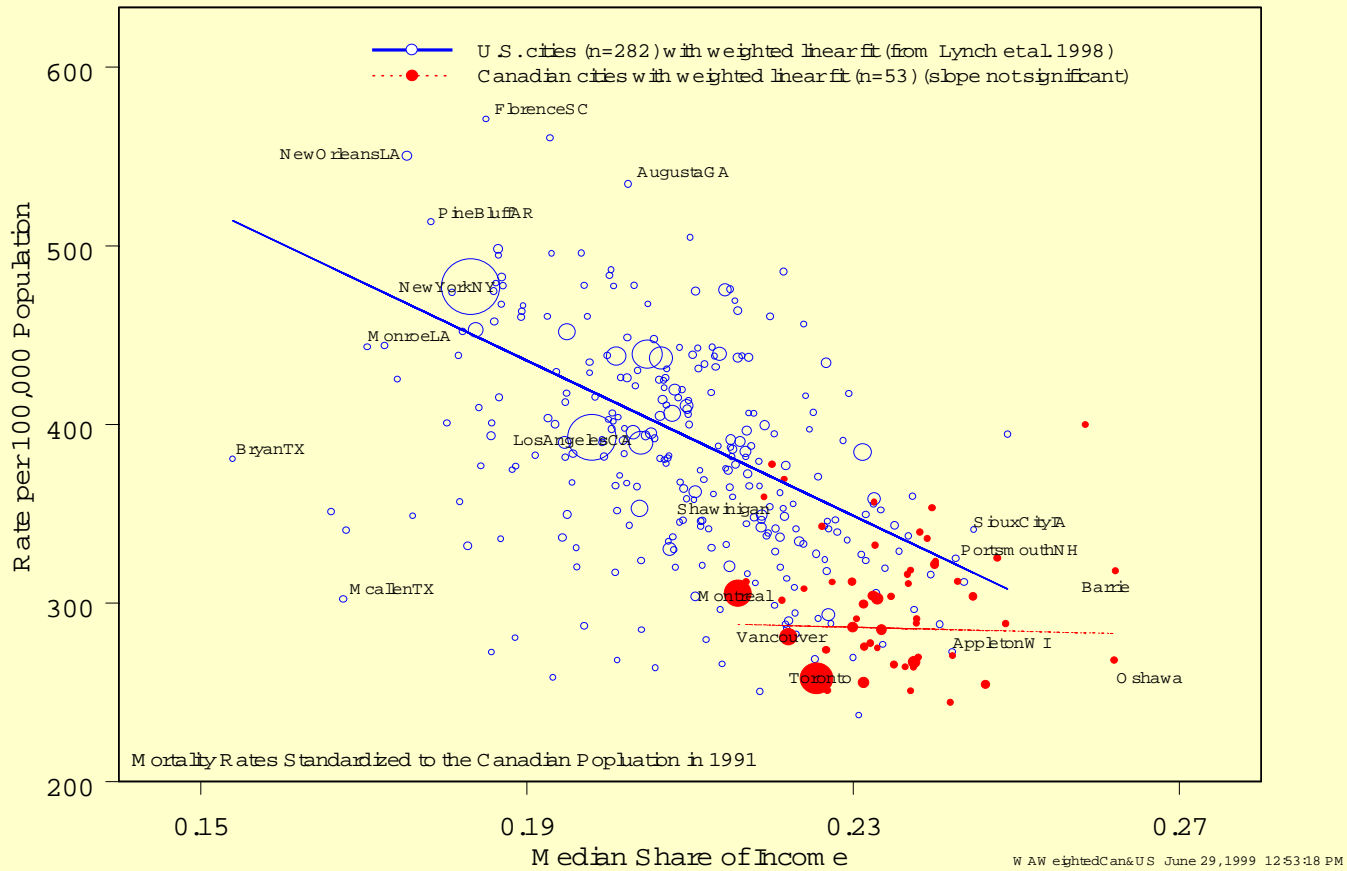


Source: Hertzman

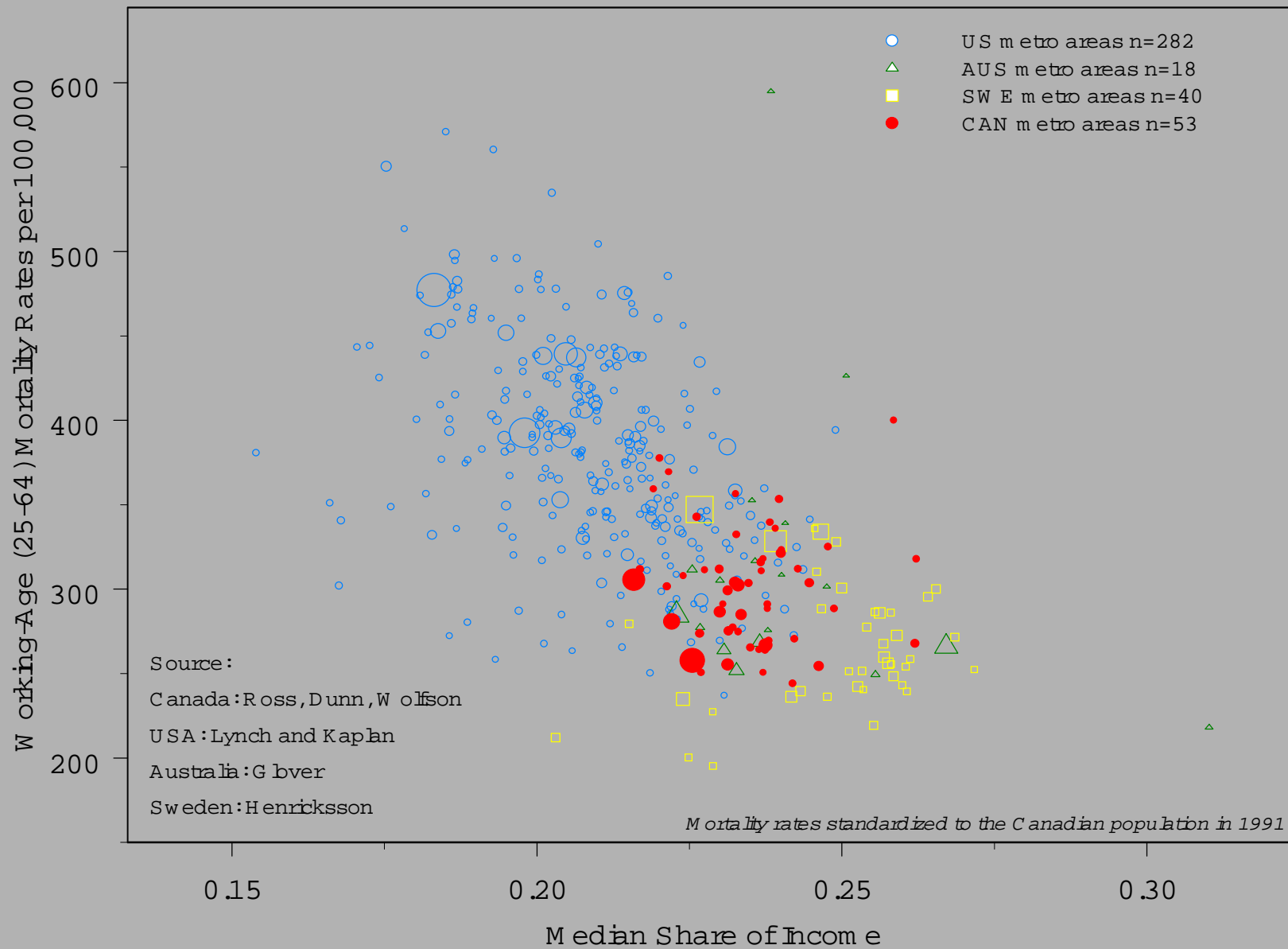
## Working-Aged Male (25-64) Mortality by Median Share U.S. States and Canadian Provinces



## Working Age (25-64) Mortality by Median Share U.S. and Canadian Metropolitan Areas



# Income Inequality and Working Age Mortality for USA, Canadian, Swedish and Australian Metropolitan Areas 1990/91

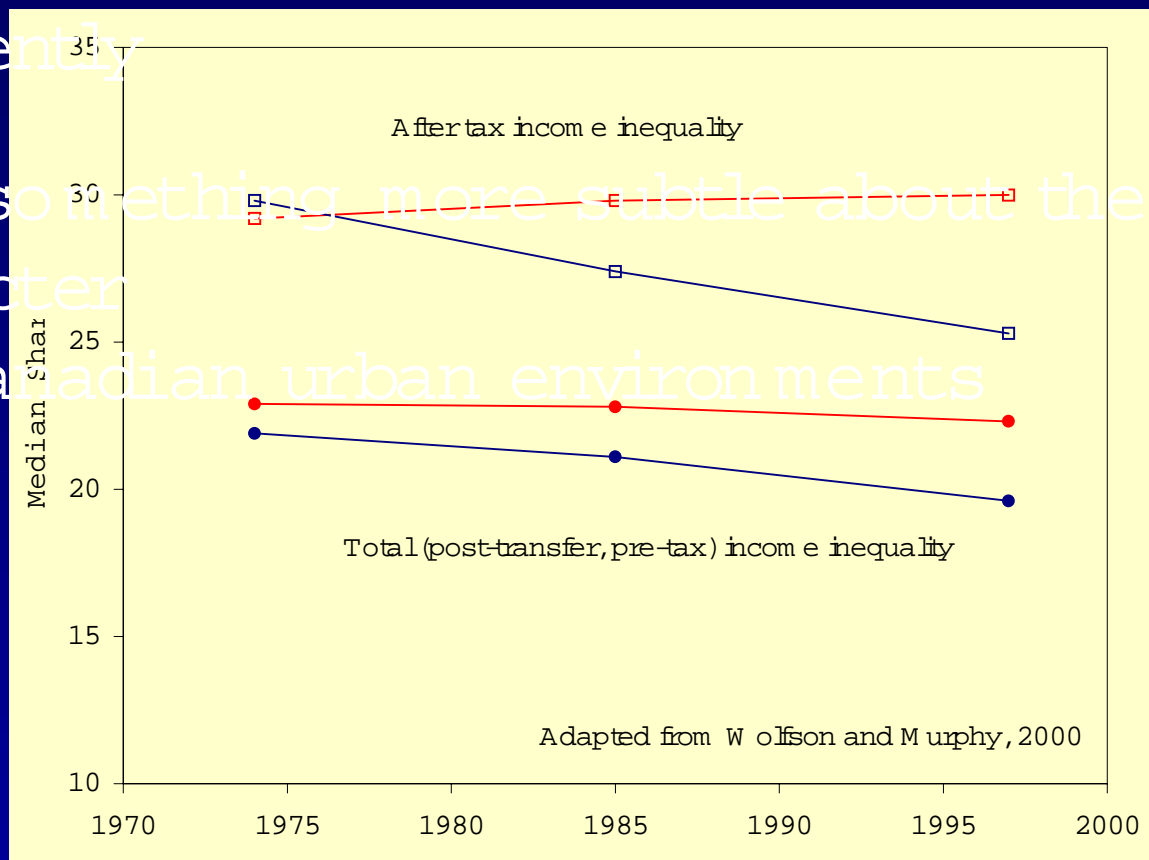




## Thinking About the Difference

- It's Canada's universal health insurance
- It's that inequality has been trending differently

It's something more subtle about the character of Canadian urban environments



## How is the Urban Environment Implicated?

- Neighbourhood segregation and concentrated poverty restrict life and “health chances”
- Urban public goods (e.g., schools) improve life and health chances
- Urban governance structures can exacerbate inequalities (e.g., restrictive zoning, crisis in the production of local public goods)

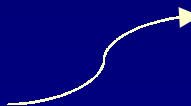
# Increase Across All Dimensions of Segregation In Canadian Cities 1991-1996

Exposure



98 percent of cities showed decline in exposure

Unevenness



68 percent of cities showed more unevenness

Concentration



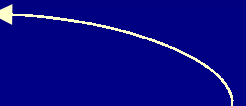
73 percent of cities showed increased concentrations of poor

72 percent showed increased clustering



Clustering

Centralization



Poor became more centralized in 90 percent of cities

## How Can Inequality be Related to Mortality?

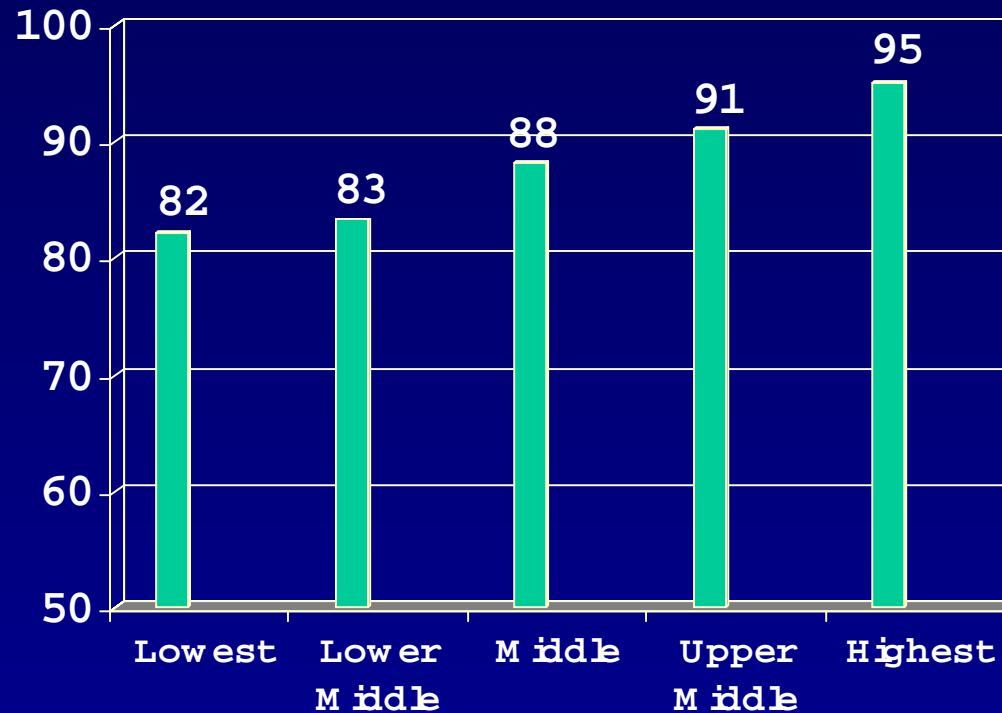
- It's about our appraisal of place in the social order – the psychosocial hypothesis.
- social position affords an increased 'host defence' (Whitehall)
- hassles and frustrations of daily living more likely to become pathological when assessed against others' more enviable situations
- poverty feels worse in areas where others around you have more

## How Can Inequality be Related to Mortality?

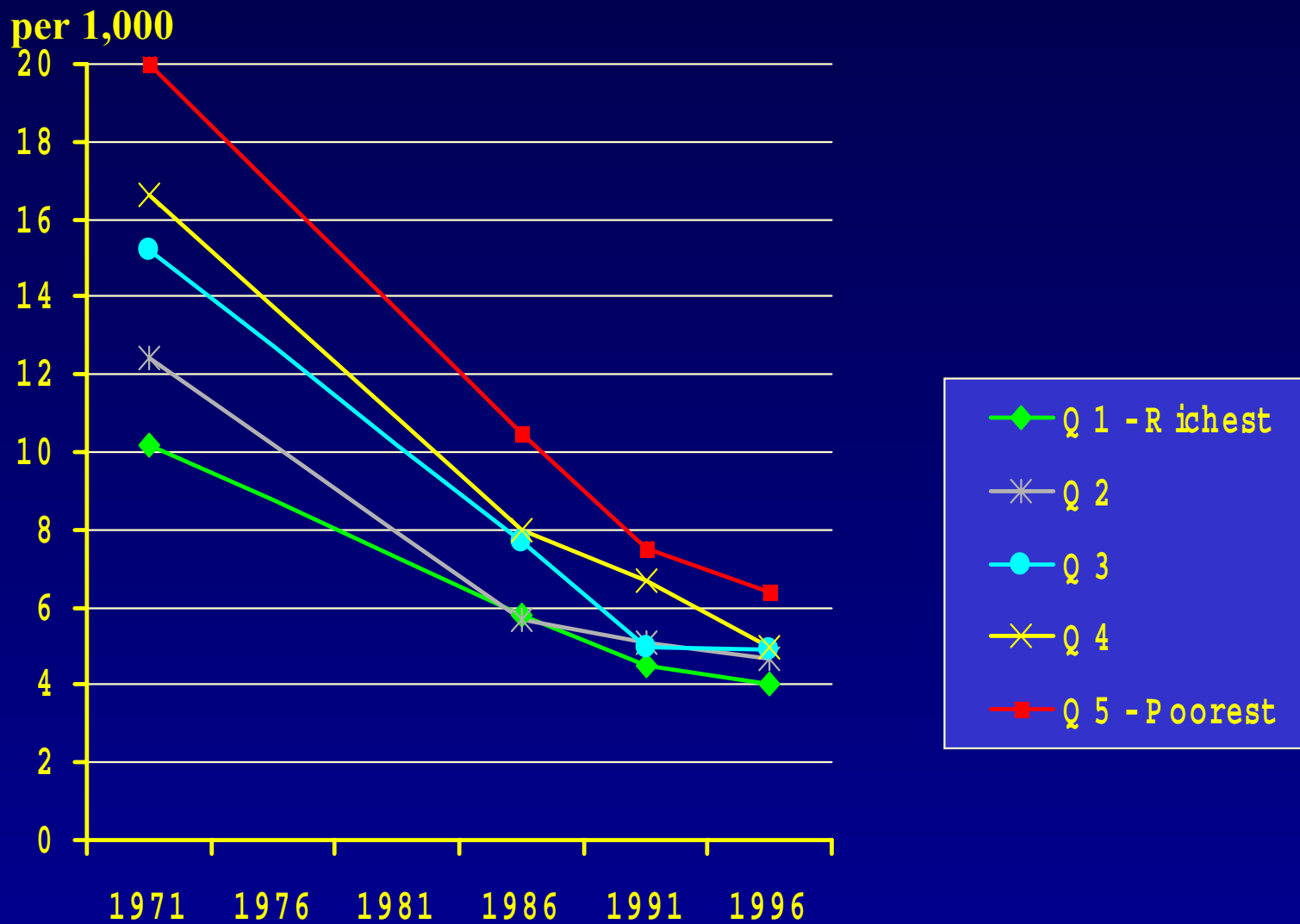
- It's about exposure to the material conditions within jurisdictions: the neo-material hypothesis.
- Systematic underinvestment in human capital  $\Rightarrow$  low spending on public goods/infrastructure
- Poor social relationships (weak social capital) in areas of high inequality (Kawachi et al., 1997)

# Children < 12 Reported to Have Excellent or Very Good Health, by Household Income Group

National Population Health Survey, 1996/7

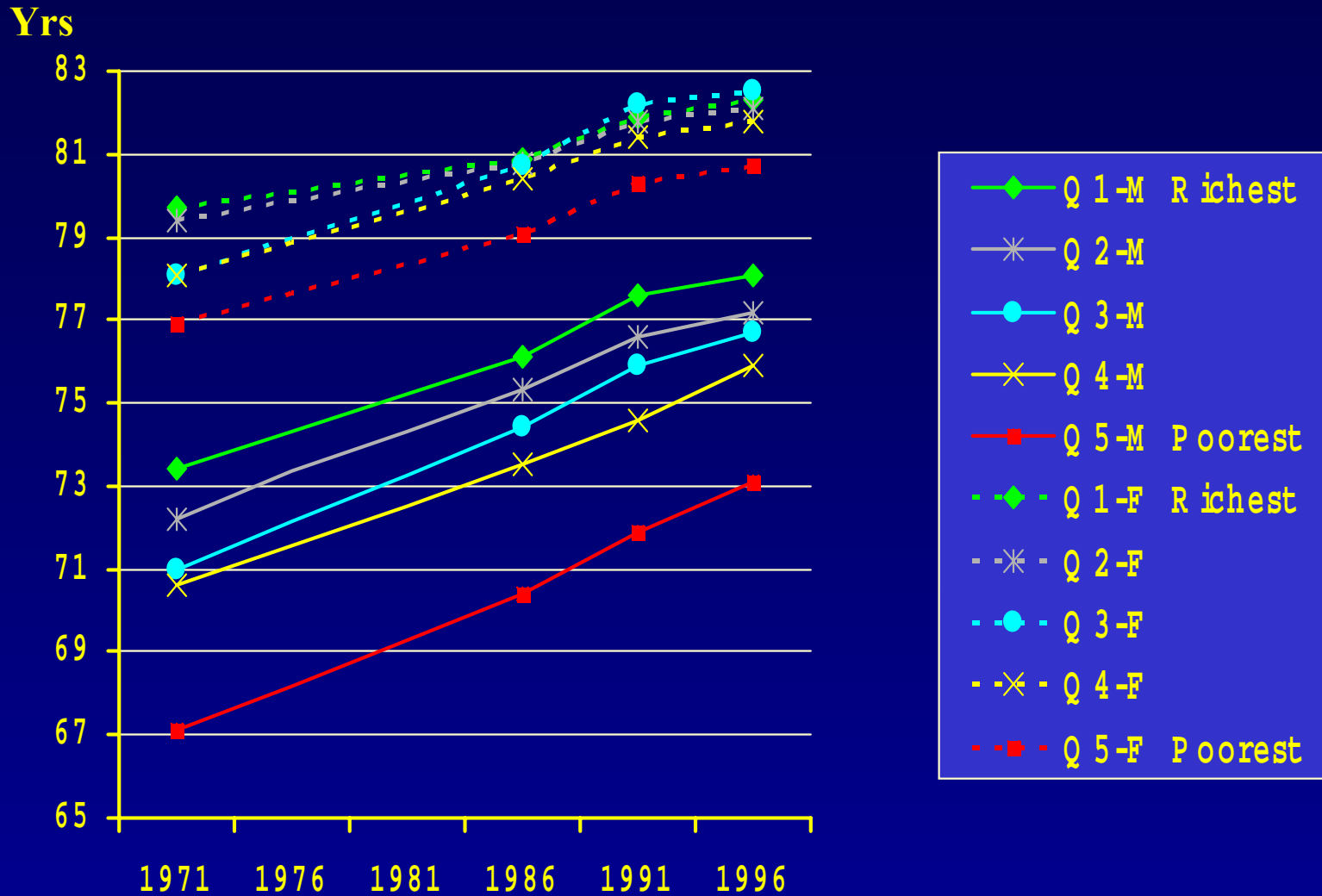


# Infant Mortality



Source: Wilkins et al., 2001

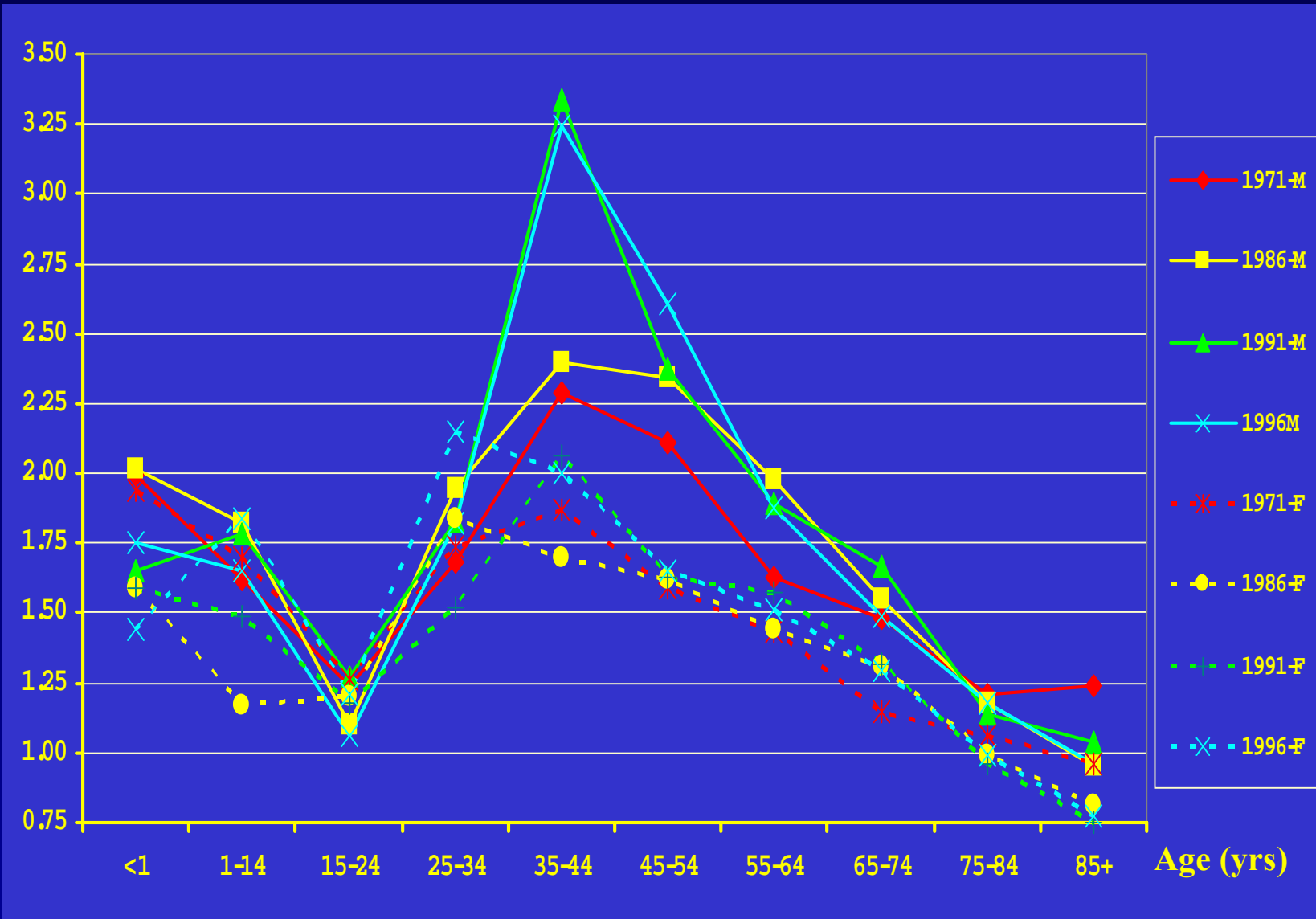
# Life Expectancy at Birth



Source: Wilkins et al., 2001

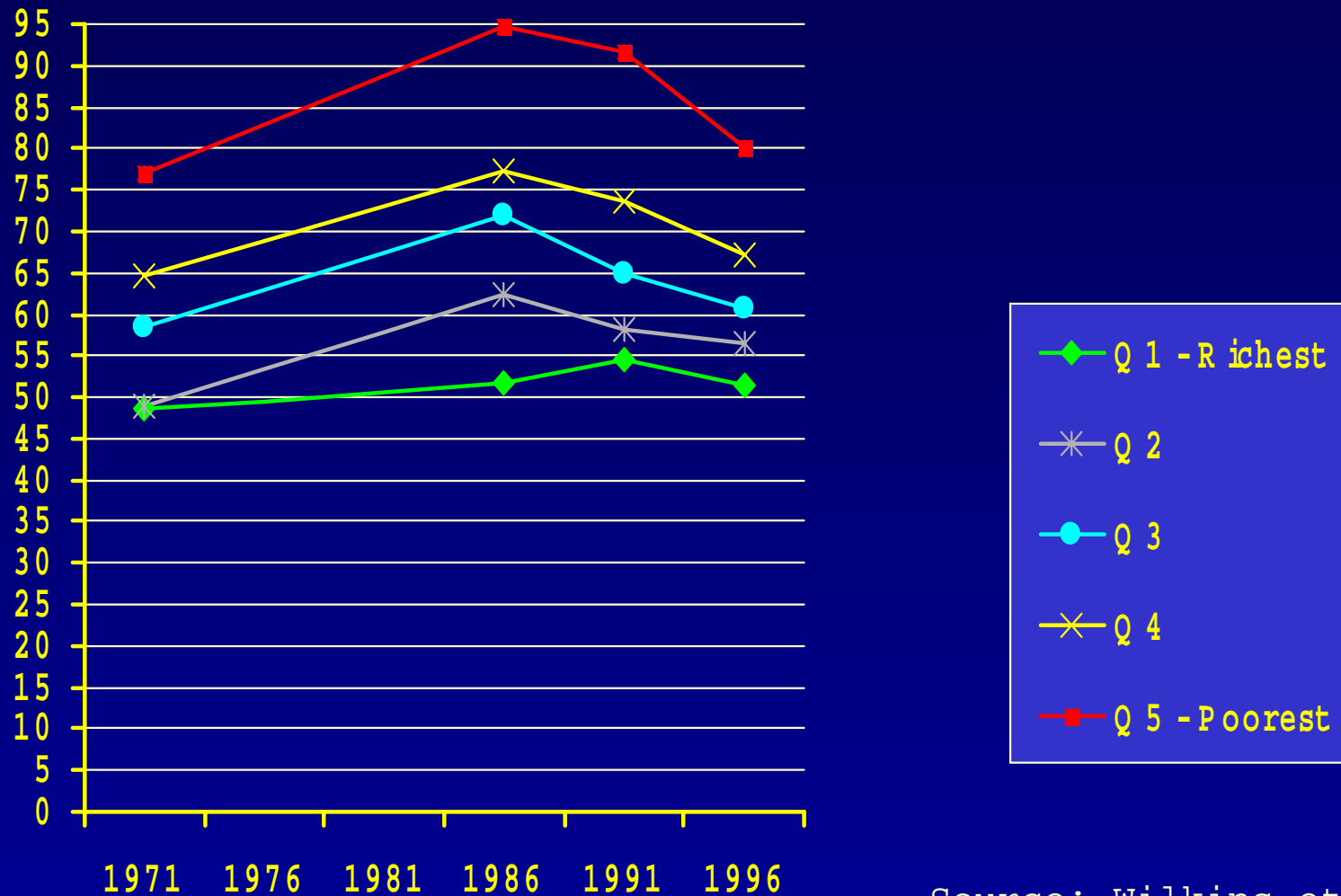


# Q5 / Q1 Mortality Ratios



# Lung Cancer, Males

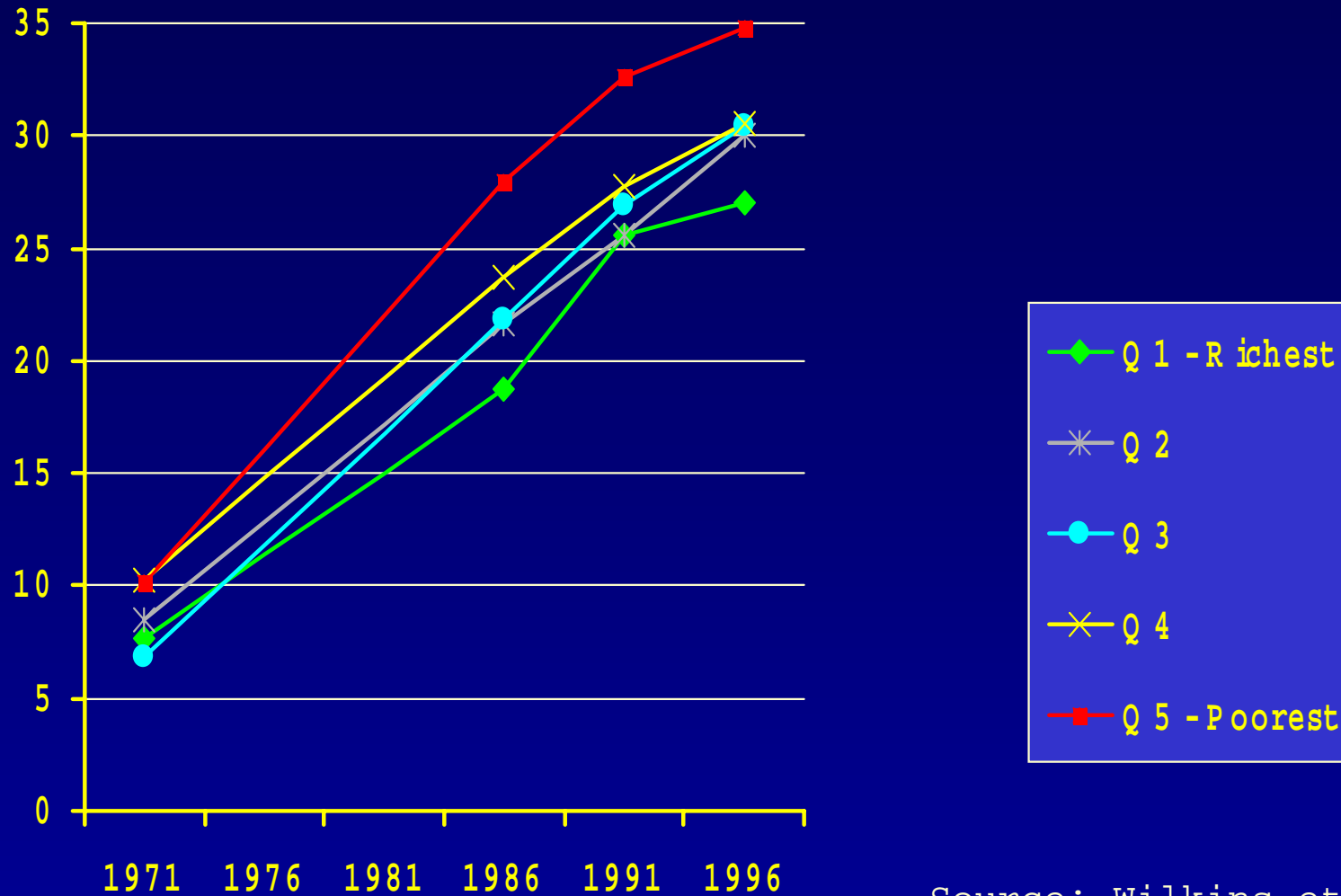
ASMR x 100,000



Source: Wilkins et al., 2001

# Lung Cancer, Females

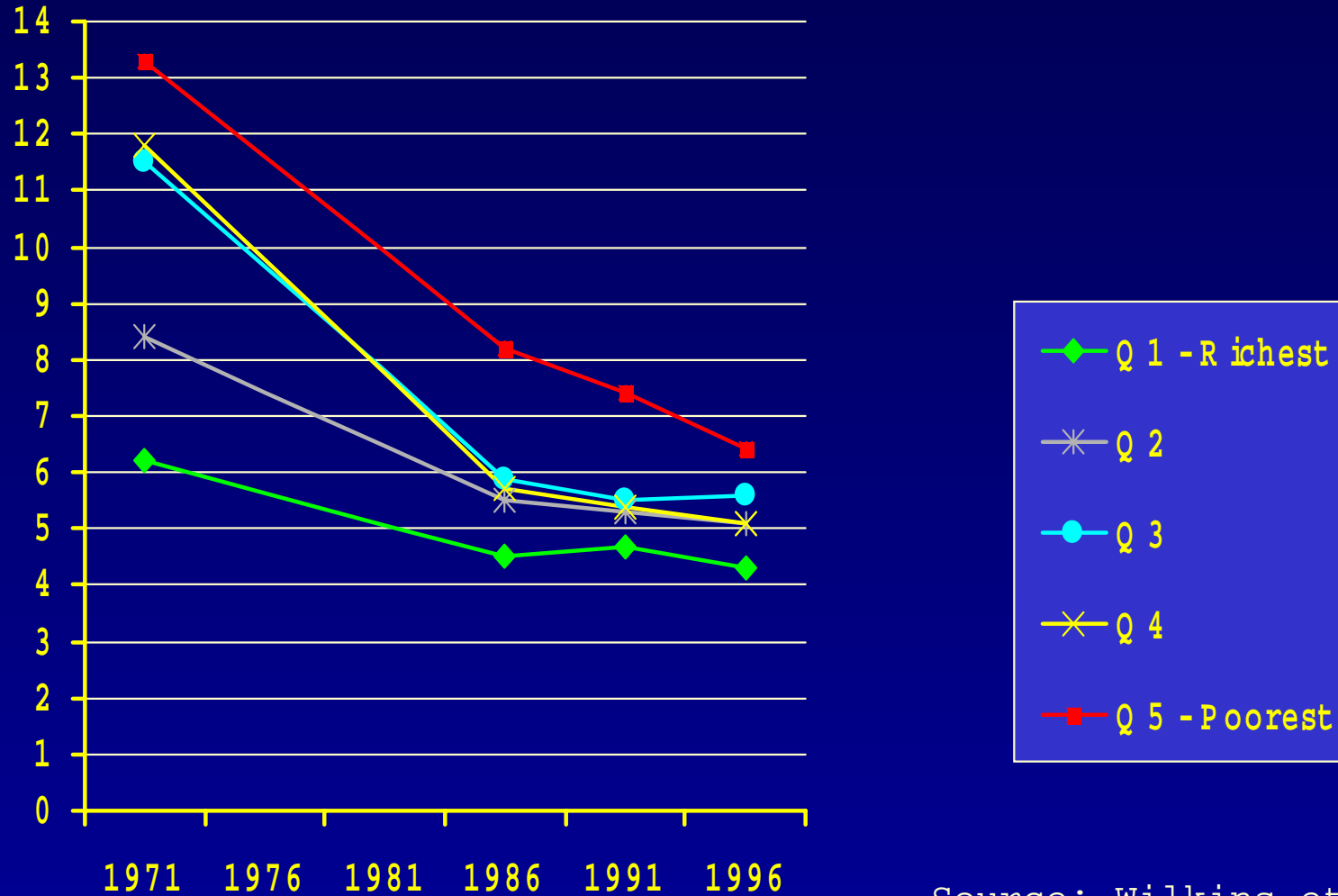
ASMR x 100,000



Source: Wilkins et al., 2001

# Uterine Cancer

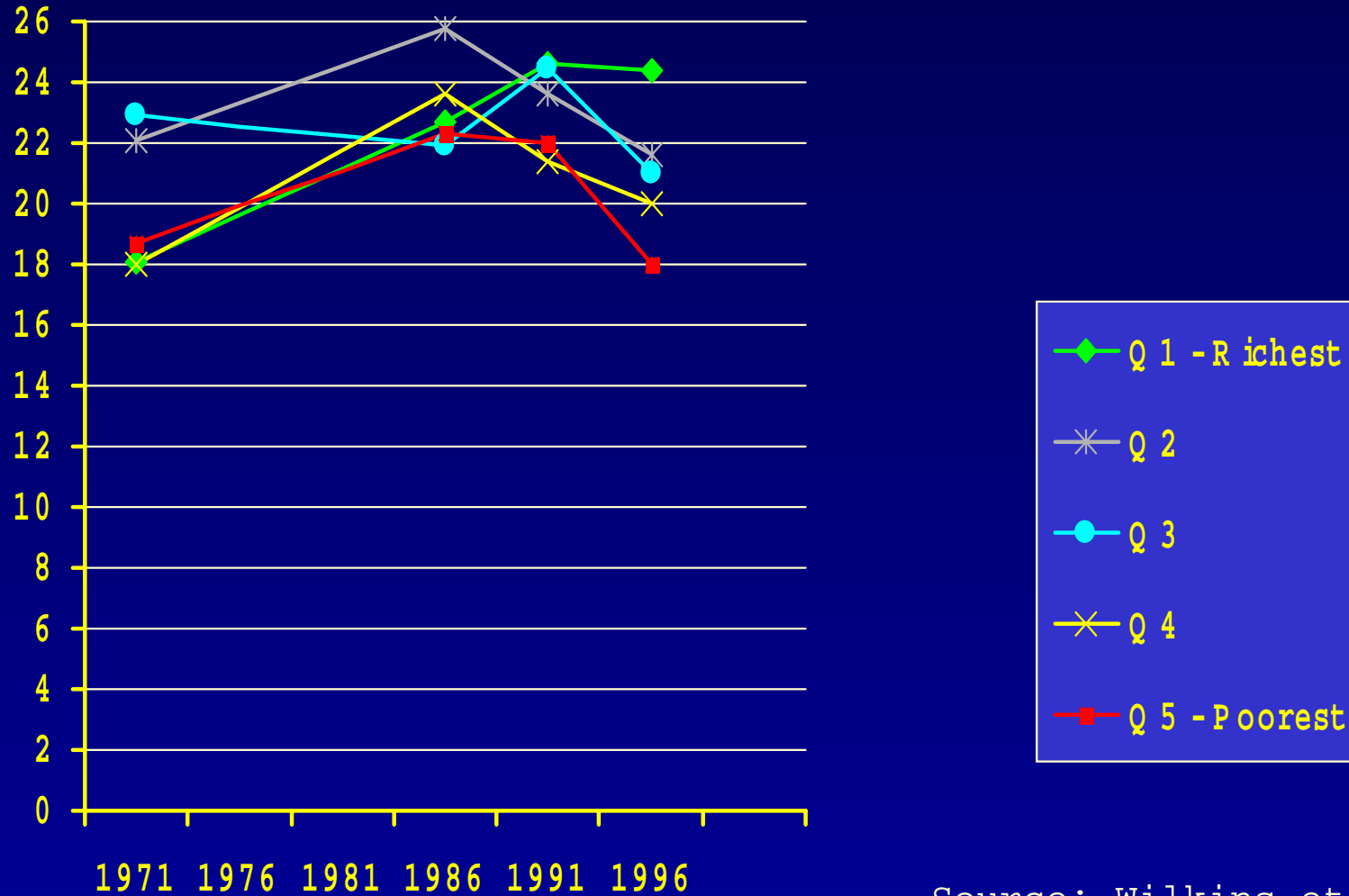
ASMR x 100,000



Source: Wilkins et al., 2001

# Prostate Cancer

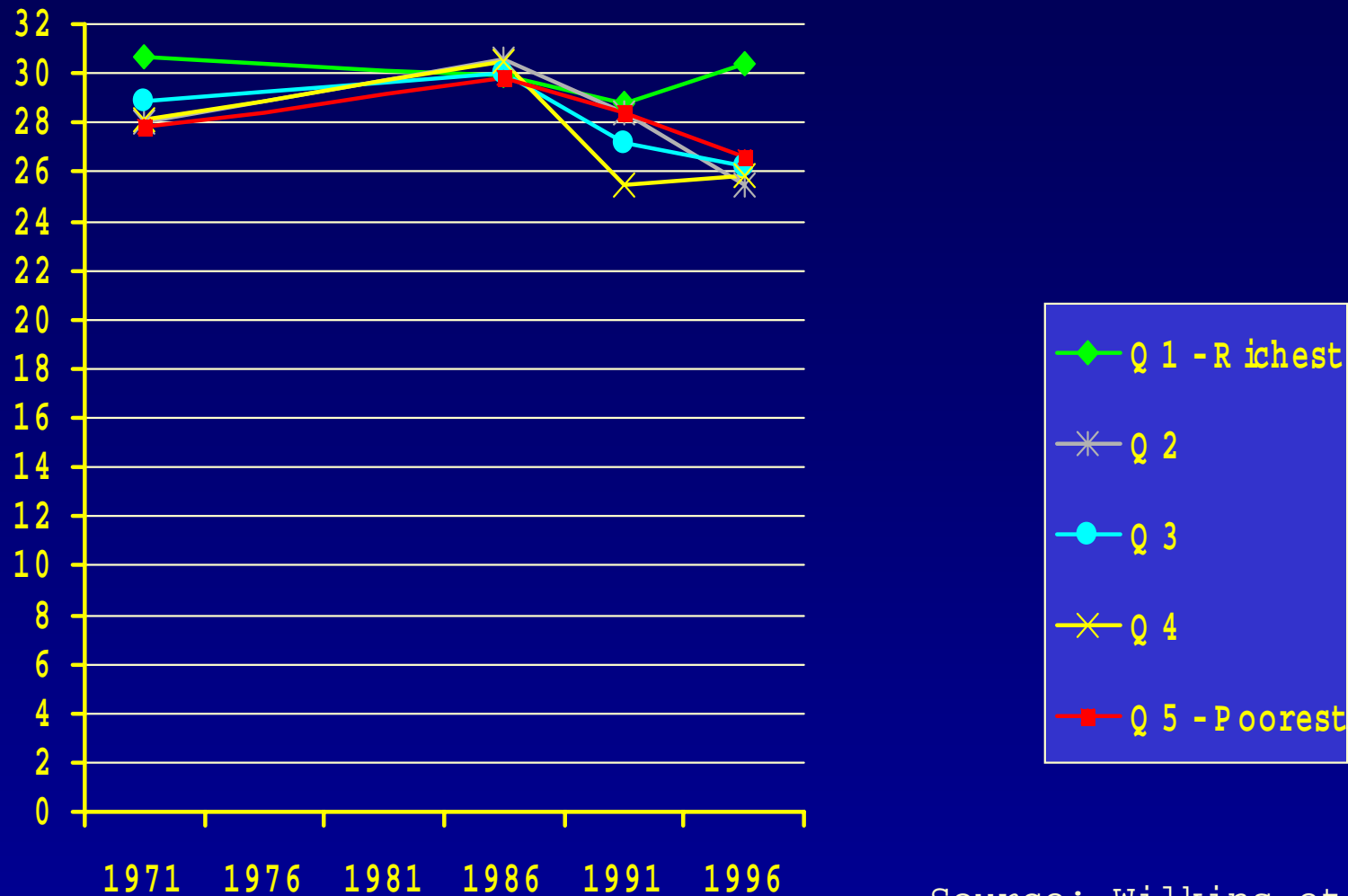
ASMR x 100,000



Source: Wilkins et al., 2001

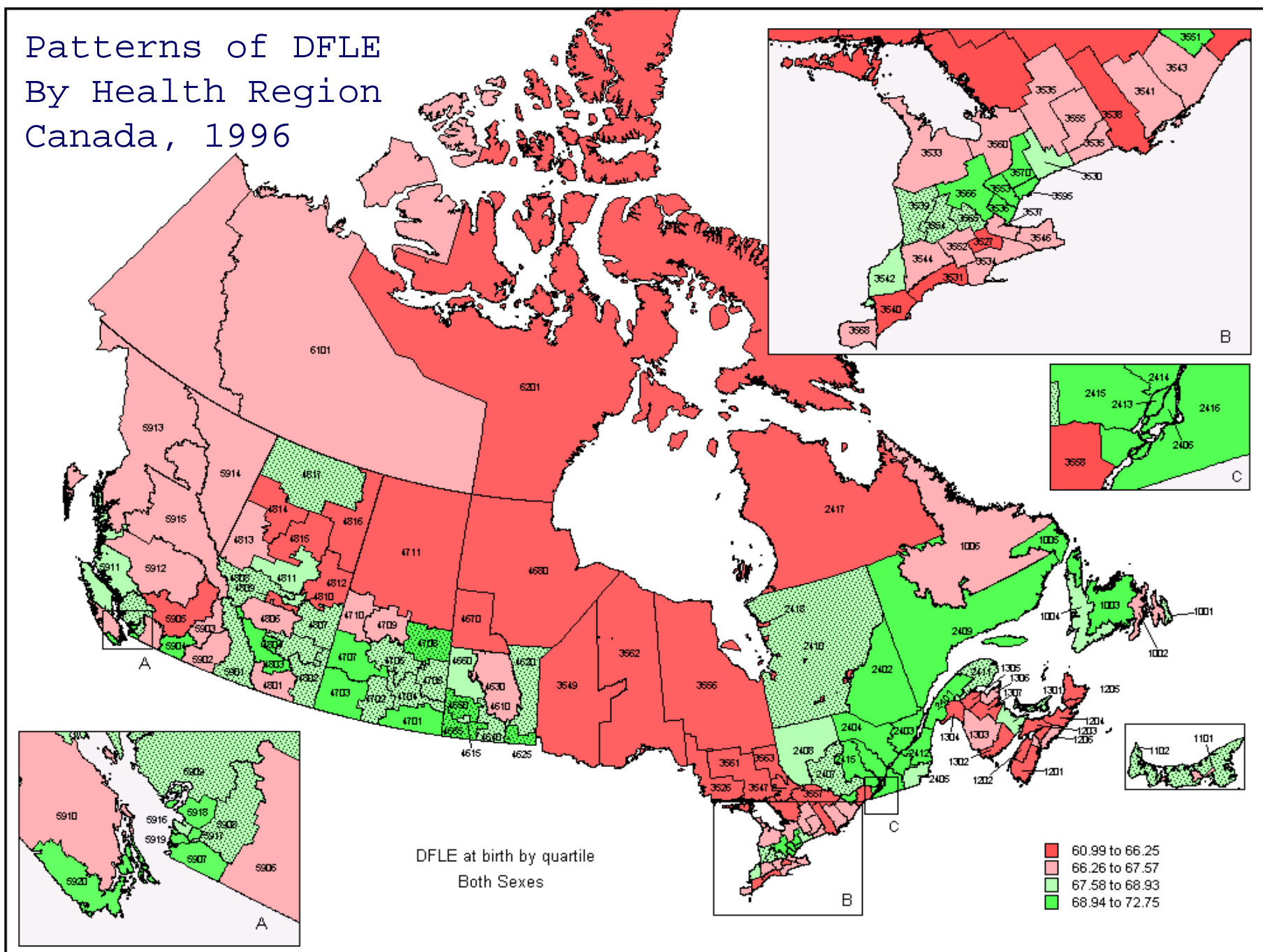
# Breast Cancer, Females

ASMR x 100,000



Source: Wilkins et al., 2001

# Patterns of DFLE By Health Region Canada, 1996



## Disability-free life expectancy, estimated coefficients by health indicator<sup>†</sup>, both sexes, Canada, 1996

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	Estimated coefficient	
Remote	-0.72	(<0.01)
Prosperous	0.33	(0.02)
Cosmopolitan	0.87	(<0.01)
Disadvantaged	-0.84	(<0.01)
Adjusted R <sup>2</sup>	0.46	

Data sources: 1996 census of Population; 1995-1997 Canadian Vital Statistics Database; Demography Division population estimates.

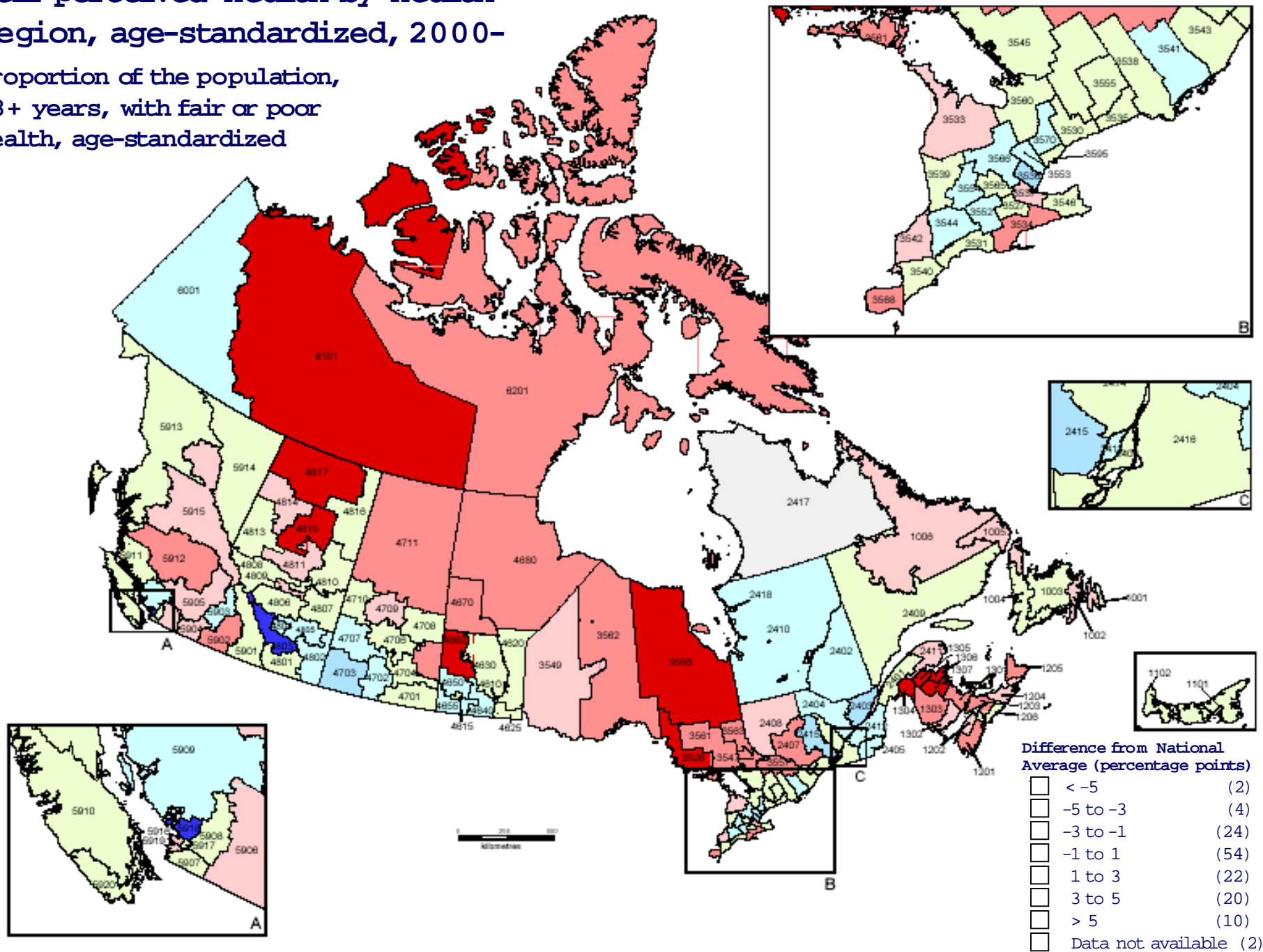
<sup>†</sup>Summarizing 21 demographic and socio-economic variables.

Note: The estimated value of a coefficient indicates the degree of association between the synthetic variable and the relevant health indicator. The sign of the coefficient indicates the direction of the association between those two variables. The numbers in parentheses represent the probability that the true value of the coefficient is significantly different from zero (two-sided test).



# Self-perceived Health by Health Region, age-standardized, 2000-

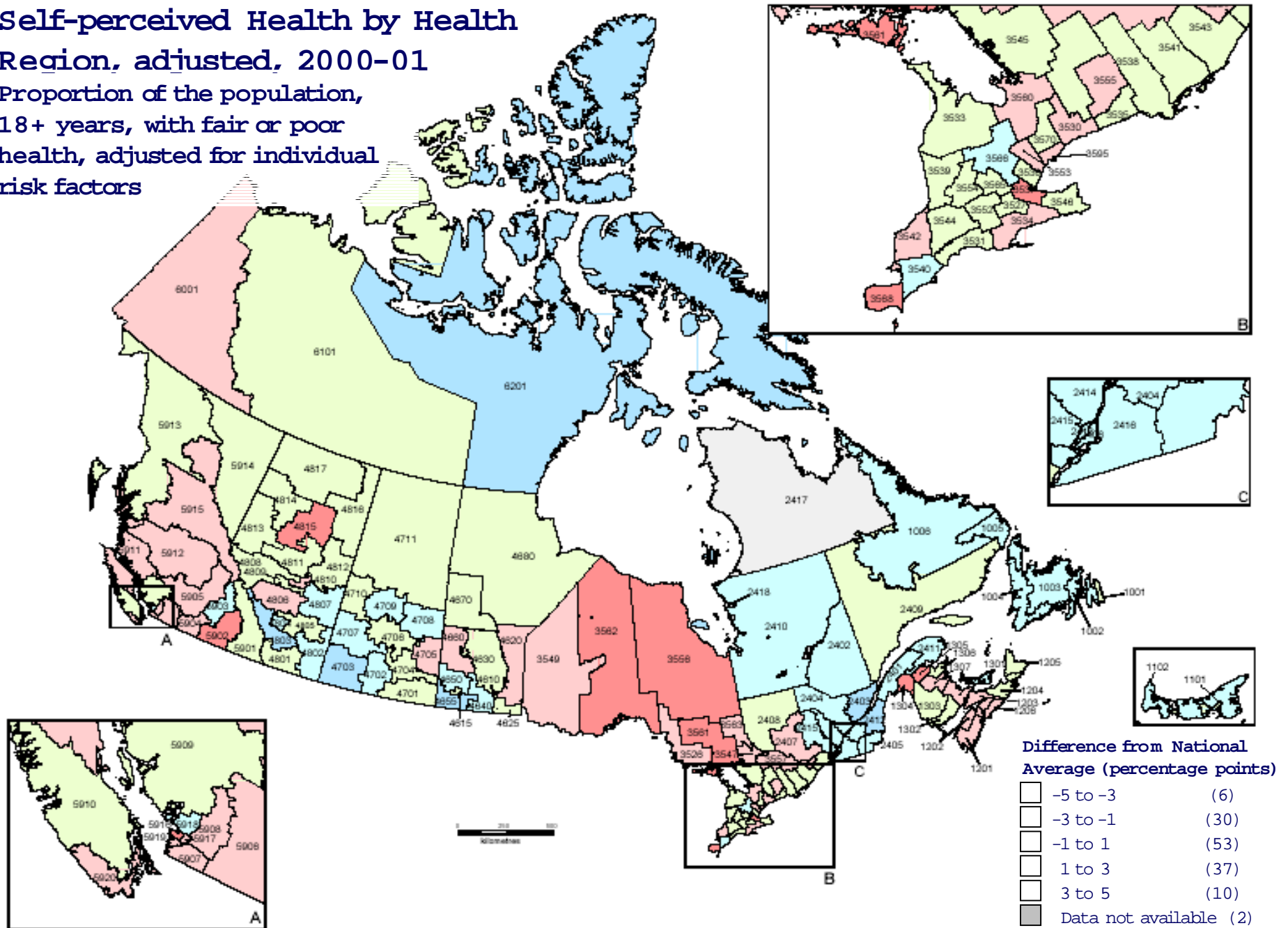
Proportion of the population, 18+ years, with fair or poor health, age-standardized



# Self-perceived Health by Health Region, adjusted, 2000-01

Region, adjusted, 2000-01

Proportion of the population, 18+ years, with fair or poor health, adjusted for individual risk factors



## What To Do

- Inequalities in health are complex, policy responses not obvious

*"It's everything, all of the time."* (Evans, 2002)