History of Whitehall Study

Prof Sir Michael Marmot
Pre-history: the first Whitehall study

Donald Reid

Geoffrey Rose
A great influence on Whitehall...

Jerry Morris
Changing social-class distribution of heart disease

M G MARMOT, A M ADELSTEIN, NICOLA ROBINSON, G A ROSE

BRITISH MEDICAL JOURNAL 21 OCTOBER 1978

FIG 1—Mortality from non-valvular heart disease in men during 1931-71 according to social class and age.

- - - - - - = Social classes I and II. x - - - x = Social classes IV and V.
MORTALITY OVER 25 YEARS ACCORDING TO LEVEL IN THE OCCUPATIONAL HIERARCHY: WHITEHALL

(Marmot & Shipley, 1996)
### Phases of the Whitehall II study

<table>
<thead>
<tr>
<th>Phase</th>
<th>Dates</th>
<th>Type</th>
<th>Participants</th>
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<tbody>
<tr>
<td>1</td>
<td>1985-1988</td>
<td>Screening / questionnaire</td>
<td>10,308</td>
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<td>2</td>
<td>1989-1990</td>
<td>Questionnaire</td>
<td>8,132</td>
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<td>1991-1993</td>
<td>Screening / questionnaire</td>
<td>8,815</td>
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<td>1995-1996</td>
<td>Questionnaire</td>
<td>8,628</td>
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<td>1997-1999</td>
<td>Screening / questionnaire</td>
<td>7,870</td>
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<td>6</td>
<td>2001</td>
<td>Questionnaire</td>
<td>7,355</td>
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<td>7</td>
<td>2003-2004</td>
<td>Screening / questionnaire</td>
<td>6,967</td>
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<tr>
<td>8</td>
<td>2006</td>
<td>Questionnaire</td>
<td>7,180</td>
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<td>9</td>
<td>2008-2009</td>
<td>Screening / questionnaire</td>
<td>6,755</td>
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</table>
## QUESTIONNAIRE

- **Demographic data**
- socio-economic data (income + work change) retirement
- work psychosocial factors
- non-work psychosocial factors (financial insecurity, control at home, family relationships)
- social engagement

## CLINICAL EXAMINATION

### Functioning
- walking speed, chair stands, hand grip strength
- balance test, spirometry (peak expiratory vol)
- weight, height, waist hip ratio, BP

### Neuroendocrine
- heart rate variability
- hypothalamic-pituitary-adrenal axis measurements (salivary cortisols)

### Subclinical CVD
- ECG: Minnesota codes, left ventricular mass
- Ultrasound carotid IMT (artery wall thickness)
- Endothelial function & flow mediated dilation (subset)

### Lipids
- total + HDL cholesterol
- triglycerides

### Carbohydrate metabolism
- HbA1c, fasting and post load glucose and insulin

### Genes
- further genotyping
- serology, CRP, IL-6
- growth hormone
- fibrinogen

### Cognitive function
- AH4, Mill Hill, memory, verbal fluency, MMSE

### General Health

- Longstanding illness
- Hospital admissions
- Medications
- SF-36

### Mental health

- GHQ (anxiety, depression)
- CESD depression scale
- SF-36, Activities of daily living (ADL), Instrumental ADL
Look familiar? Times change…

1990
Whitehall II goes on...
controlling for (a) age, and (b) age, smoking systolic blood pressure, plasma cholesterol concentration, height and blood sugar
SELF-REPORTED JOB CONTROL AND CHD INCIDENCE WHITEHALL MEN AND WOMEN

- Adjusted age, sex, length of follow up
- + effort/reward imbalance
- + grade, coronary risk factors, negative affect

Rate ratio

- High job control
- Intermediate job control
- Low job control

Bosma et al, 1998
EFFORT-REWARD IMBALANCE AND CHD INCIDENCE WHITEHALL MEN AND WOMEN

Bosma et al, 1998
ODDS RATIO* OF METABOLIC SYNDROME BY EXPOSURE TO ISO-STRAIN: WHITEHALL II PHASES 1 TO 5

Chandola, Brunner & Marmot, BMJ, 2006

*Adj. for age, employment, grade and health behaviours
I could go on...
But Whitehall II findings too important to be of ‘just’ academic interest...
SOCIAL DETERMINANTS OF HEALTH

THE SOLID FACTS

SECOND EDITION
THE SOLID FACTS:
10 MESSAGES

- THE SOCIAL GRADIENT
- STRESS
- EARLY LIFE
- SOCIAL EXCLUSION
- WORK
- UNEMPLOYMENT
- SOCIAL SUPPORT
- ADDICTION
- FOOD
- TRANSPORT
CSDH: Knowledge for action

“The goal is not an academic exercise, but to marshal scientific evidence as a lever for policy change — aiming toward practical uptake among policymakers and stakeholders in countries”.

WHO DG LEE Jong-Wook, World Health Assembly, May 2004

Launch of CSDH, Chile 2005
Inequalities in health that are avoidable are inequitable.

Tackling health inequities is a matter of social justice.
The people who matter most...

Kibera, Kenya
• "This ends the debate decisively. Health care is an important determinant of health. Lifestyles are important determinants of health. But it is factors in the social environment that determine access to health services and influence lifestyle choices in the first place."

Dr Margaret Chan, the DG of the WHO, at the launch of the CSDH Final Report in Geneva 28th August 2008
“I am pleased to announce that Sir Michael Marmot has agreed to undertake a new review of health inequalities in England…”

“…And we will learn from other countries along the way…”

Gordon Brown, Prime Minister, UK
at Closing the Gap Conference, 6th Nov 2008
A Fair Society

Conditions in which individuals and communities have control over their lives
Life expectancy and disability-free life expectancy at birth by neighbourhood income deprivation, 1999-2003
6 Policy Objectives

A. Give every child the best start in life
B. Enable all children, young people and adults to maximise their capabilities and have control over their lives
C. Create fair employment and good work for all
D. Ensure healthy standard of living for all
E. Create and develop healthy and sustainable places and communities
F. Strengthen the role and impact of ill health prevention
Health and wellbeing Boards one year on – what priorities have been agreed?

Source: The King’s Fund, 2013
### Evidence reviews

Provide information for local authorities and their partners to tackle health inequalities locally.

Commissioned by PHE, written by Institute of Health Equity

Available on the PHE and IHE websites – www.instituteofhealthequity.org

<table>
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<tr>
<th>Early intervention</th>
<th>Health Equity Evidence Reviews</th>
<th>Health Equity Briefings</th>
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<tbody>
<tr>
<td>1. Good quality parenting programmes and the home to school transition</td>
<td>1a. Good quality parenting programmes</td>
<td>1b. Improving the home to school transition.</td>
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<tr>
<th>Education</th>
<th>2. Building children and young people’s resilience in schools</th>
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<td>3. Reducing the number of young people not in employment, education or training (NEET)</td>
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<td>4. Adult learning services</td>
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<tr>
<th>Employment</th>
<th>5. Increasing employment opportunities and improving workplace health</th>
<th>5a. Workplace interventions to improve health and wellbeing</th>
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<td></td>
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<td>5b. Working with local employers to promote good quality work</td>
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<td>5c. Increasing employment opportunities and retention for people with a long-term health condition or disability</td>
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<td>5d. Increasing employment opportunities and retention for older people</td>
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<tr>
<td>Ensuring a healthy living standard for all</td>
<td>6. Health inequalities and the living wage</td>
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<th>Healthy environment</th>
<th>7. Fuel poverty and cold home-related health problems</th>
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<td>8. Improving access to green spaces</td>
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Review of social determinants and the health divide in the WHO European Region: final report
Provide universal good quality
Early years child care
Education Work
Adequate social protection
Social Inclusion
Equity at older ages
Quality Housing
Safe Communities
Universal Health Care
Safeguard future generations
Do something
Do more
Do better