

THE EFFECT OF SOCIAL POLICIES ON HEALTH (AND BIOLOGY)

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World Health
Organization



Commission on
Social Determinants of Health

Closing the gap in a generation

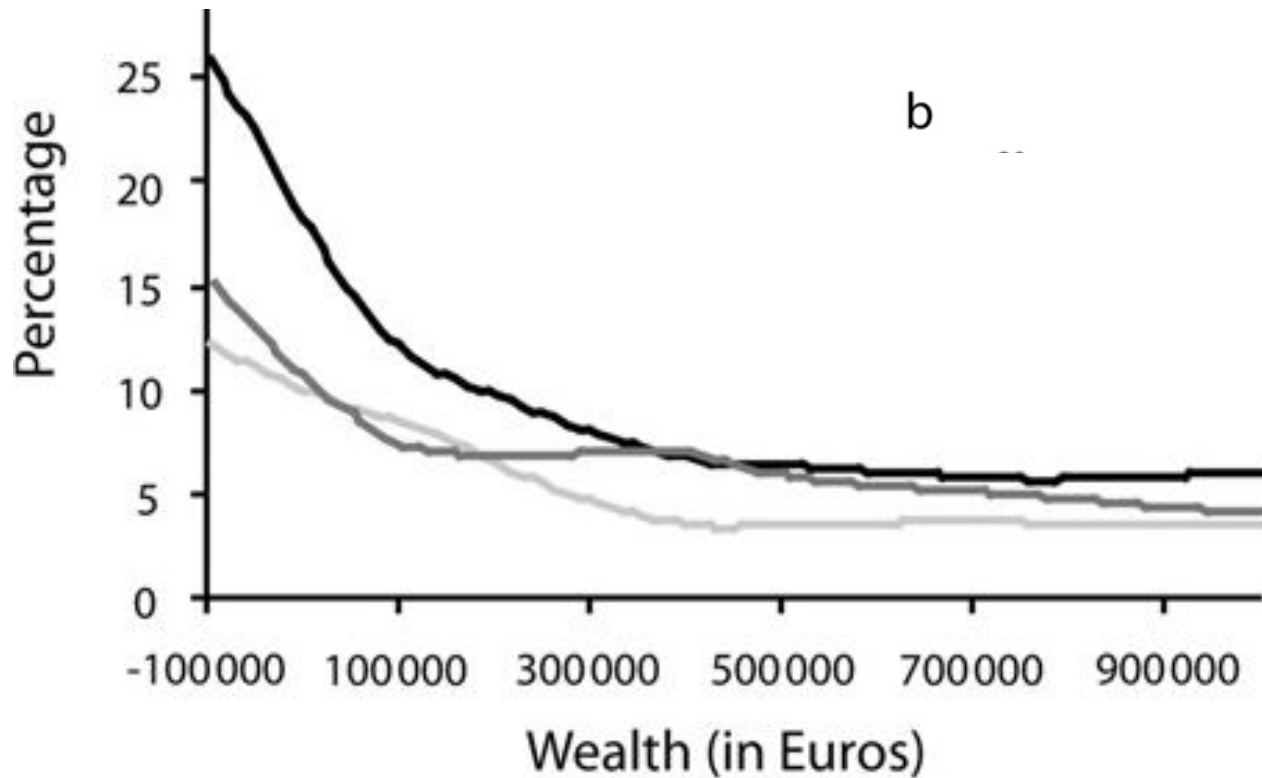
Health equity through action on
the social determinants of health

‘Child poverty and transmission of poverty from generation to generation are major obstacles to improving population health and reducing health inequity’

What must be done?

*‘Establish and strengthen universal comprehensive social protection policies that support a level of **income sufficient** for healthy living for all.’*

Diabetes prevalence by total wealth



60

WINNING BIG BUT FEELING NO BETTER? THE EFFECT OF LOTTERY PRIZES ON PHYSICAL AND MENTAL HEALTH

BENEDICTE APOUEY* and ANDREW E. CLARK

Paris School of Economics – CNRS, Paris, France



1. Arms, , hands
2. Skin
3. Lung
4. Skin conditions/allergy
5. Chest/breathing
6. Heart/blood pressure
7. Stomach or digestion
8. Diabetes

NO EFFECTS!

Mental Health

	Winning between $t - 2$ and t	
	(1)	(2)
Panel A. Likert General Health Questionnaire, full sample		
<i>AnyWin</i>	0.0582 (0.0538)	0.0288 (0.0548)
<i>BigWin</i>		0.408*** (0.142)

Smoking

<i>AnyWin</i>	-0.136 (0.136)	-0.208 (0.138)
<i>BigWin</i>		0.936*** (0.341)

More social drinking..

Why social policy and health

- Government rules and regulations affect nearly every social determinant, e.g., education; income & poverty; wealth; housing.
- Policies provide a key avenue for examining how a **change in SES** (causally) influences **health**
- Most **epidemiological evidence is observational**
- How can we **move from observational evidence to causal evidence** on how SES influences health (and biology)?

Two examples

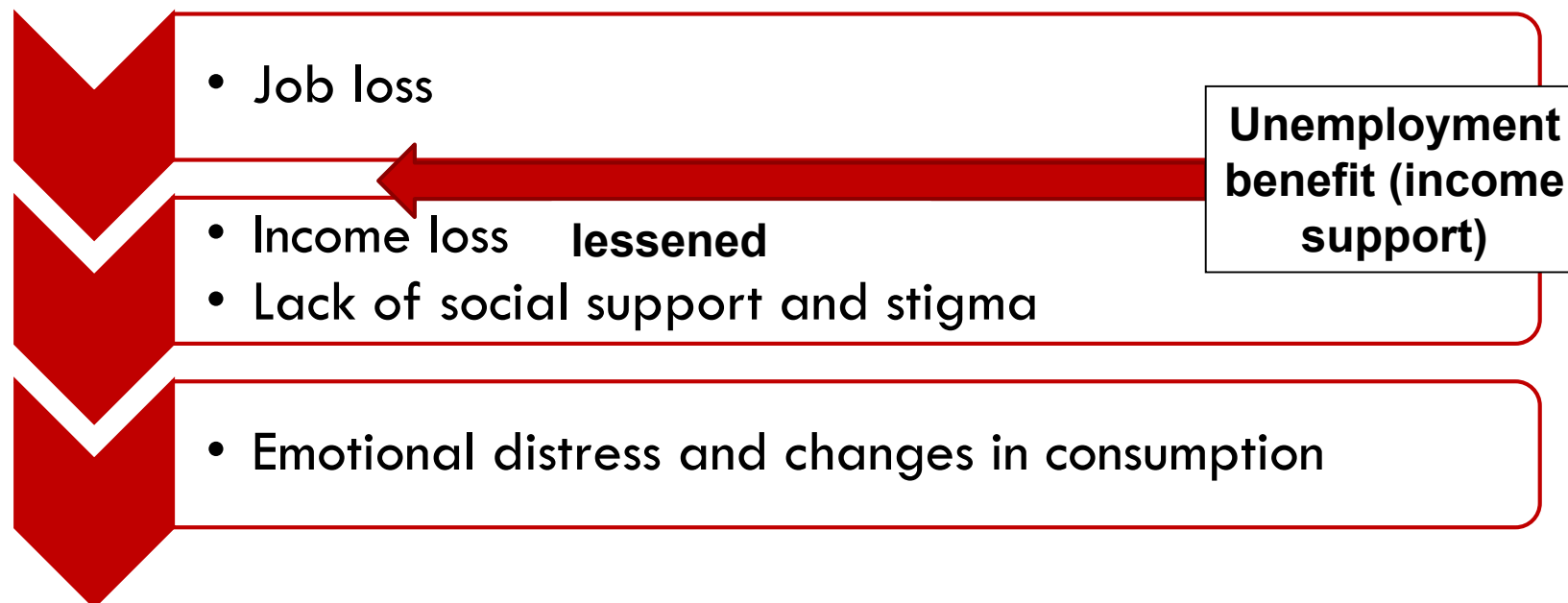
1. Do **unemployment benefits** prevent suicide?
2. Do **paid maternity leave benefits** influence mental health?



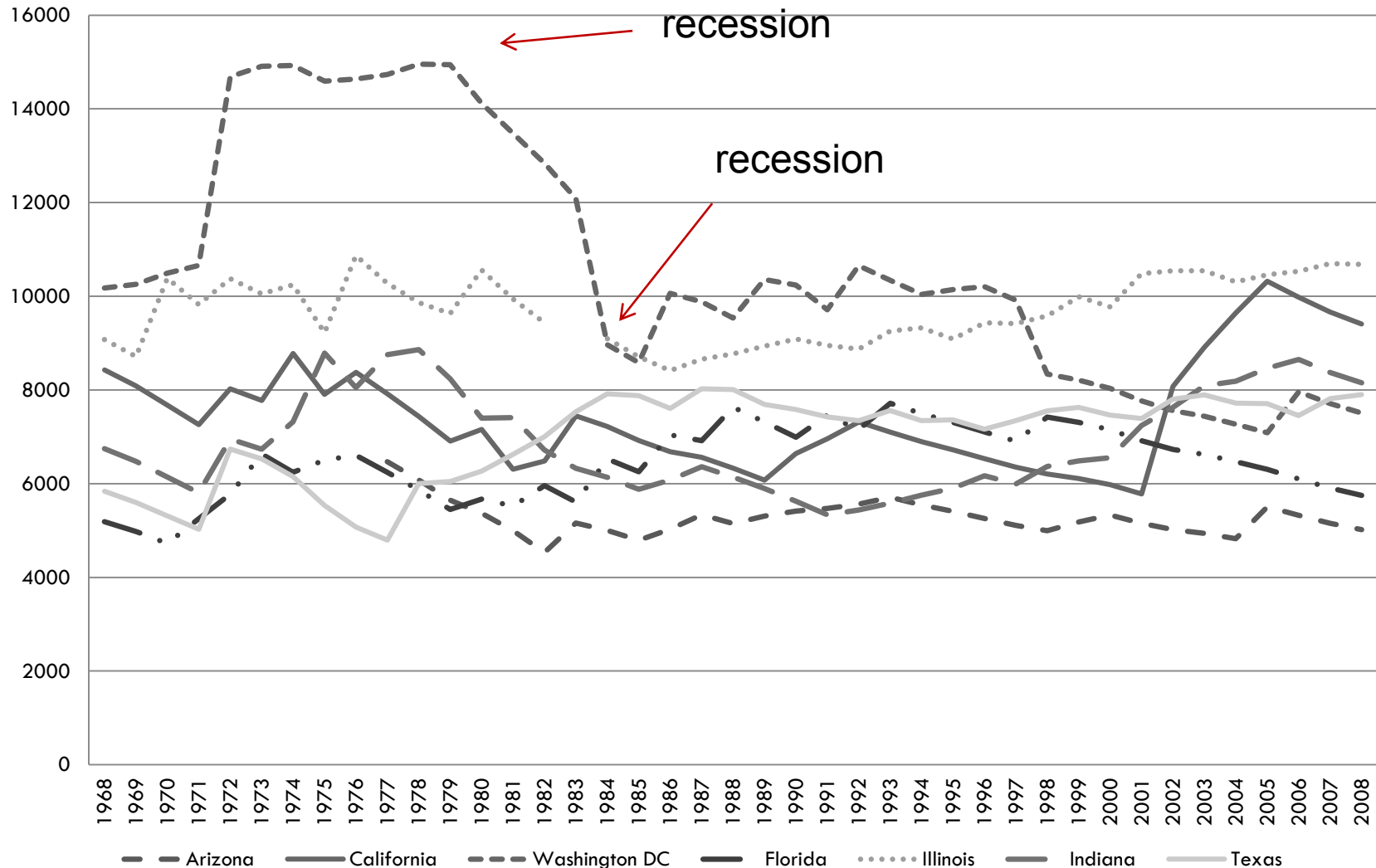
Original Contribution

Do Generous Unemployment Benefit Programs Reduce Suicide Rates? A State Fixed-Effect Analysis Covering 1968–2008

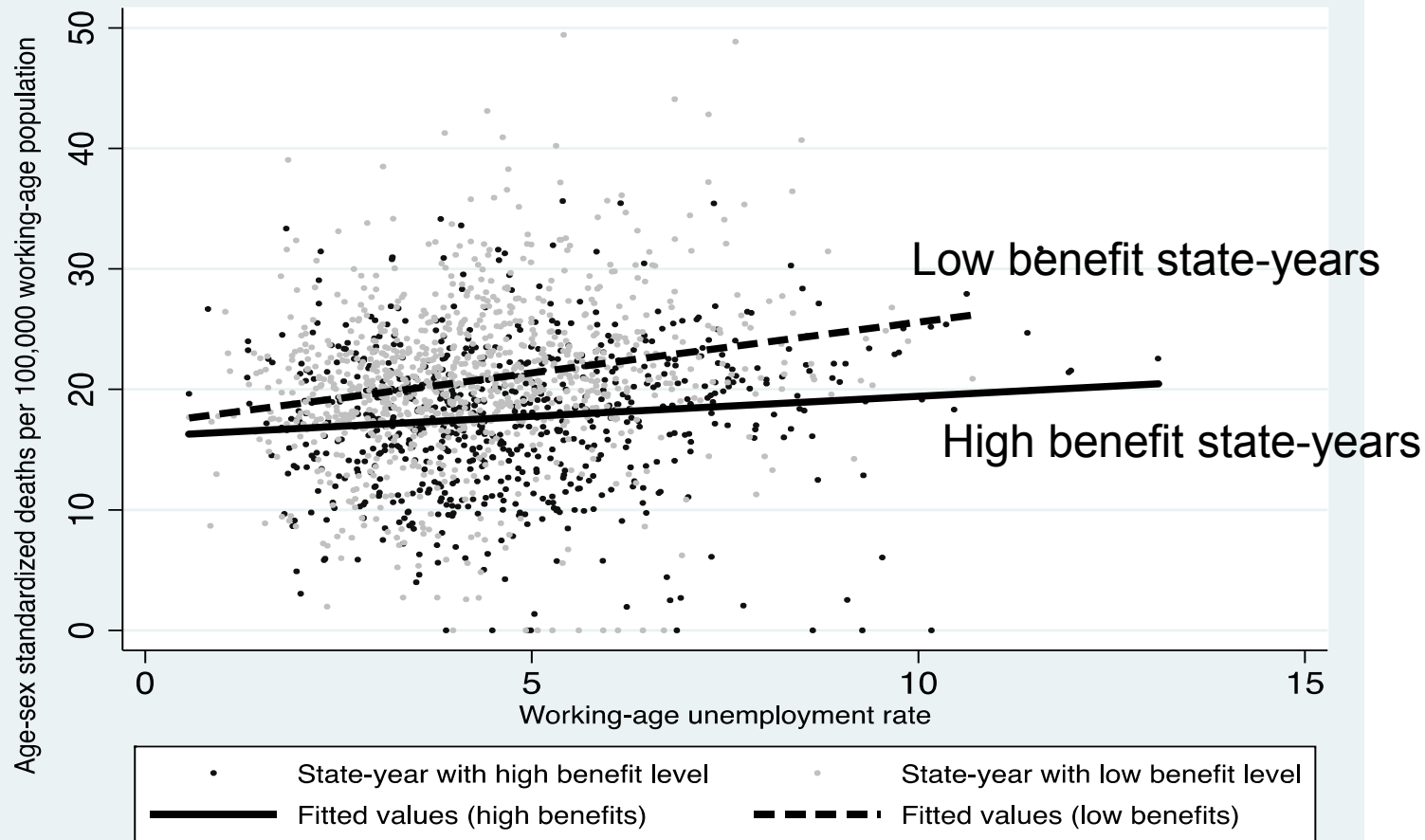
Jonathan Cylus*, M. Maria Glymour, and Mauricio Avendano



Maximum allowable unemployment benefits by state in US dollars by law (United States)



State Suicide rates vs. unemployment rates, United States, 1968-2008



Fixed effects models: The impact of state unemployment rates and benefits on suicide

	Model 1	Model 2	Model 3	
Unemployment rate	0.163***	0.164***	0.183***	
Maximum unemployment benefit		-0.0745	0.217	
(logged, 1999 prices)				
Maximum unemployment benefit *			-0.551***	
Unemployment rate				

Unemployment
increases suicide,
but less so in states
with higher
benefits...

American Journal of

**PUBLIC
HEALTH**

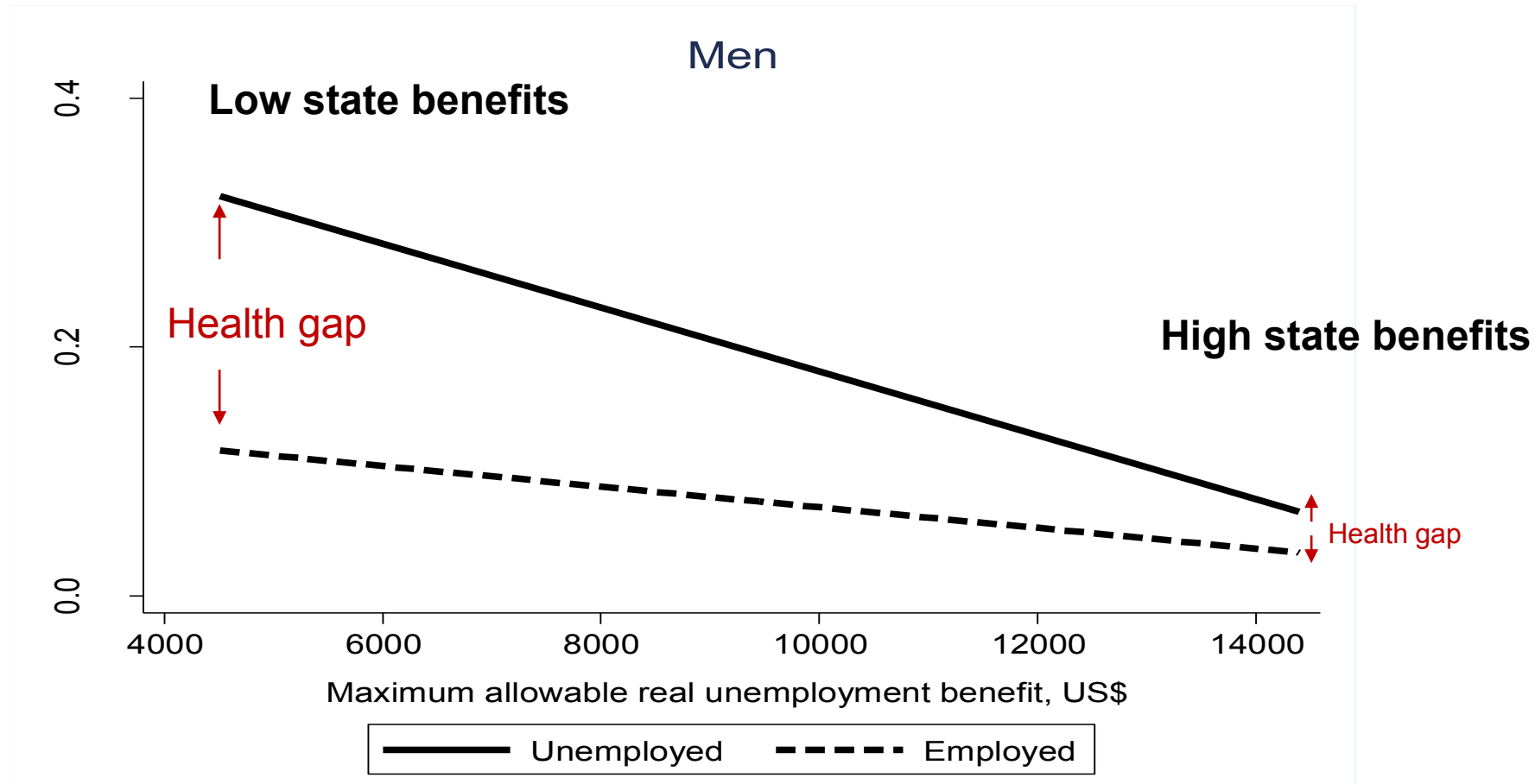
| RESEARCH AND PRACTICE |

Health Effects of Unemployment Benefit Program Generosity

| Jonathan Cylus, MSc, M. Maria Glymour, ScD, MS, and Mauricio Avendano, PhD

February 2015, Vol 105, No. 2 | American Journal of Public Health

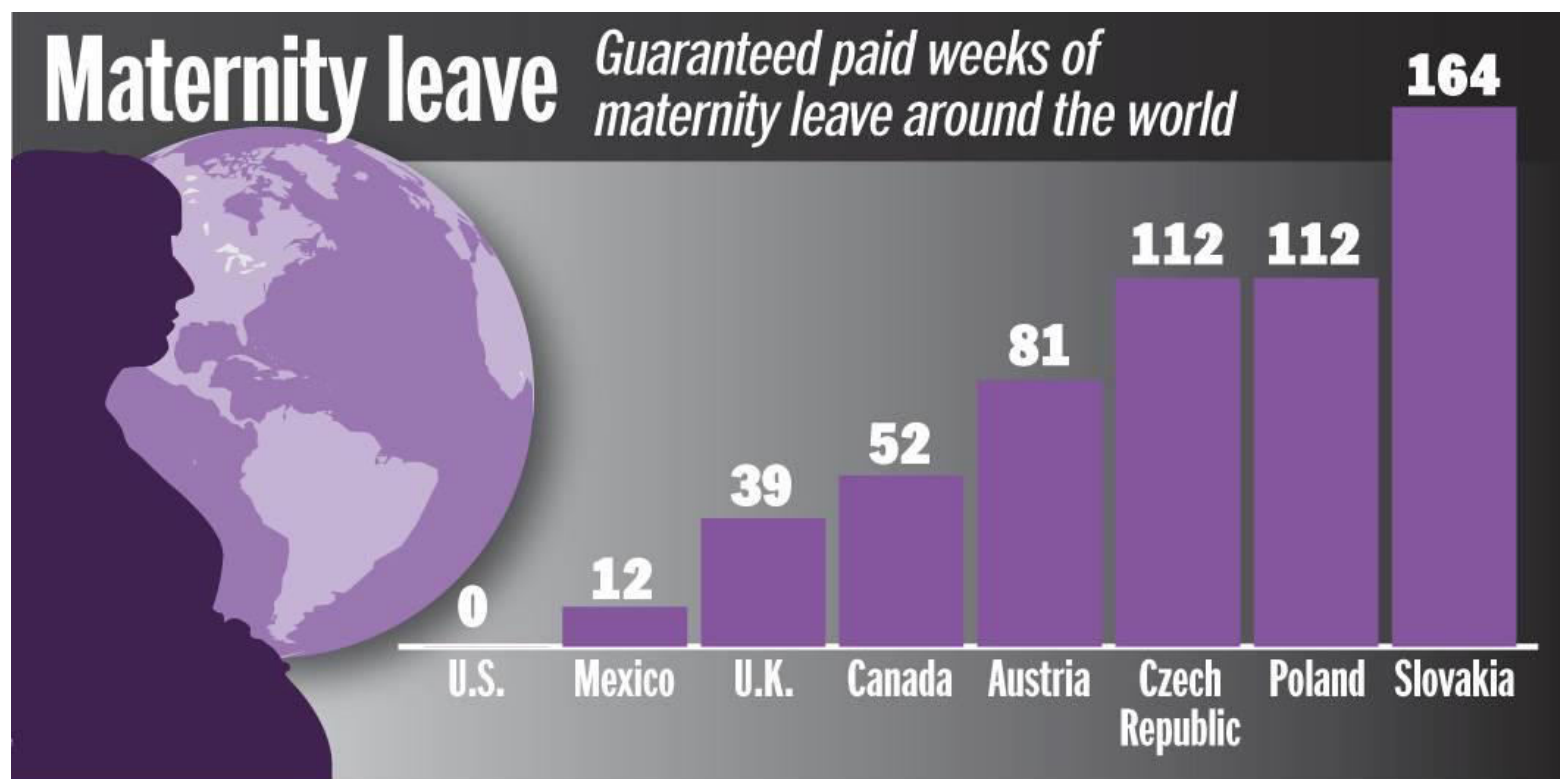
Poor health by maximum allowable unemployment benefit levels, men





The long-run effect of maternity leave benefits on mental health: Evidence from European countries

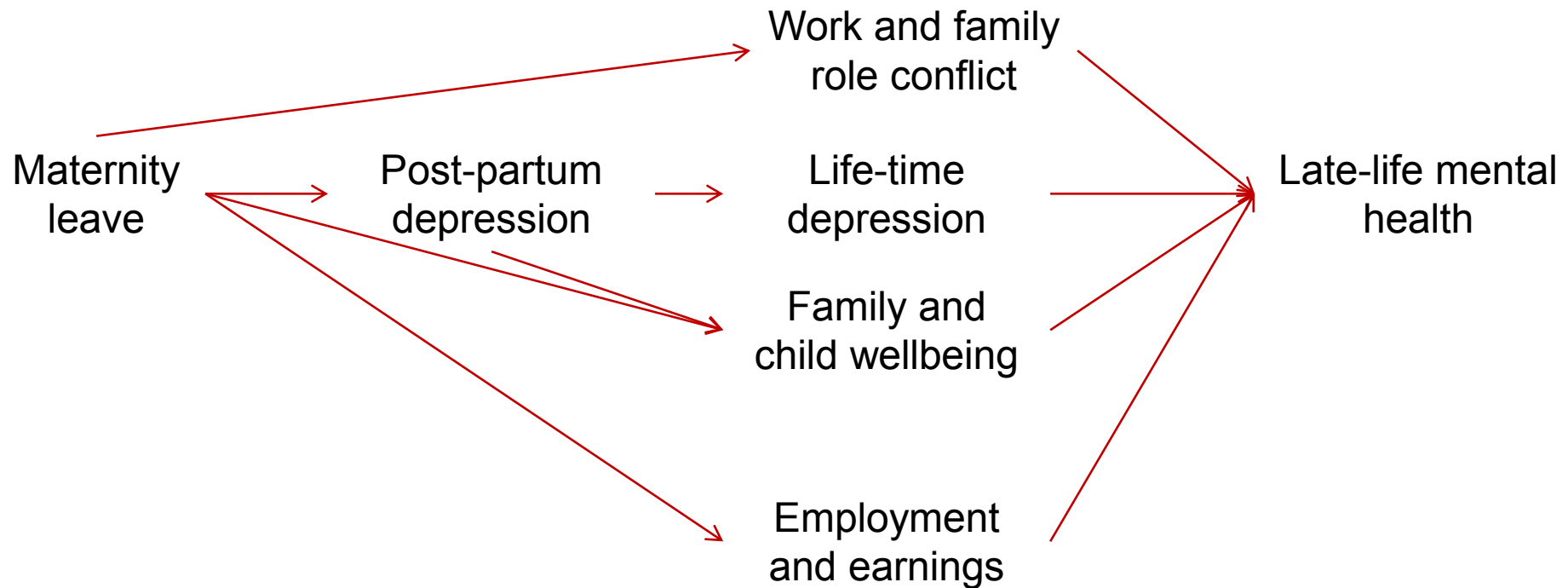
Mauricio Avendano ^{a, b, c, *}, Lisa F. Berkman ^{b, c}, Agar Brugiavini ^d, Giacomo Pasini ^{d, e}



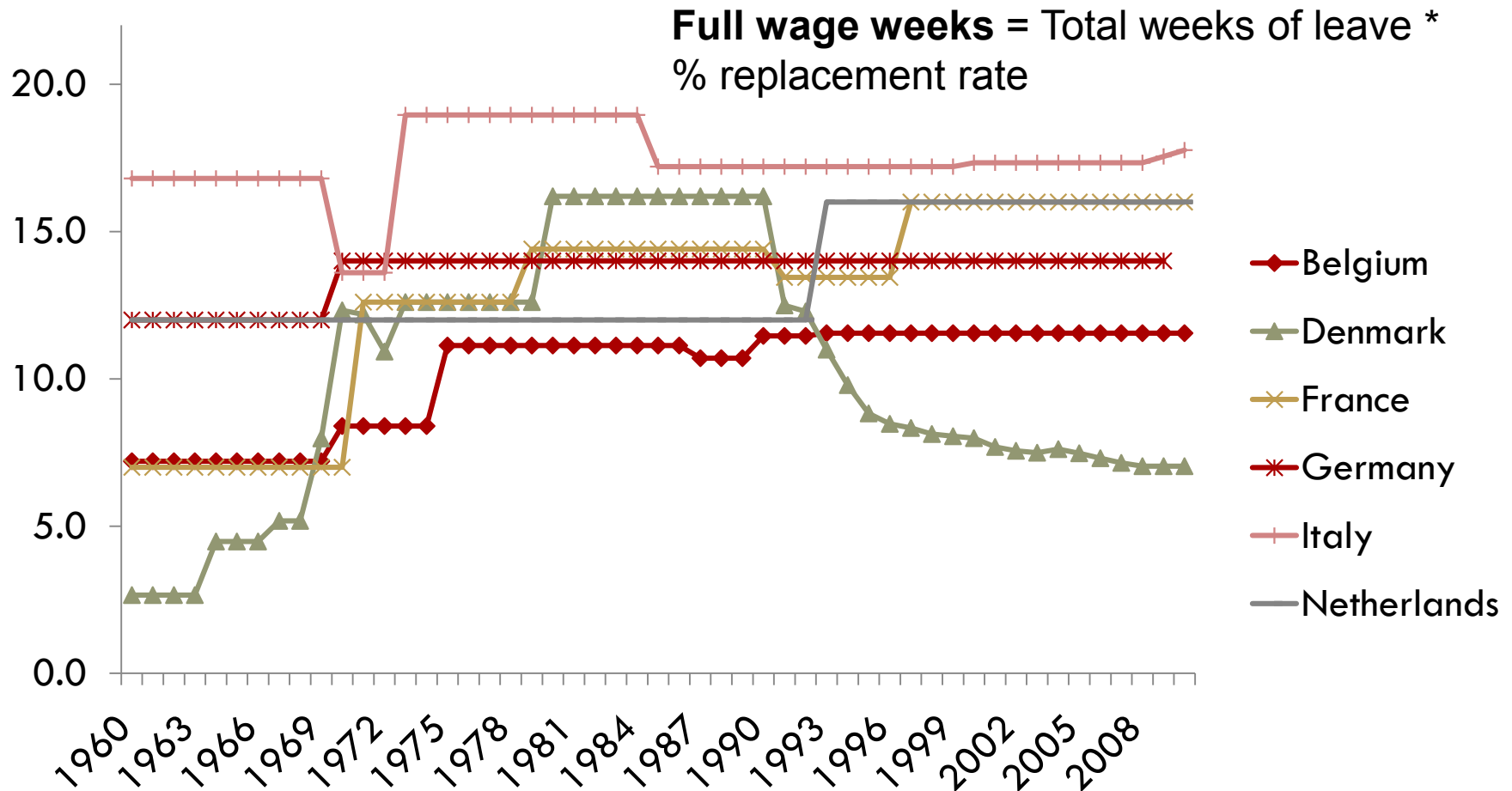
SOURCE: OECD, gov.uk

DESERET NEWS GRAPHIC

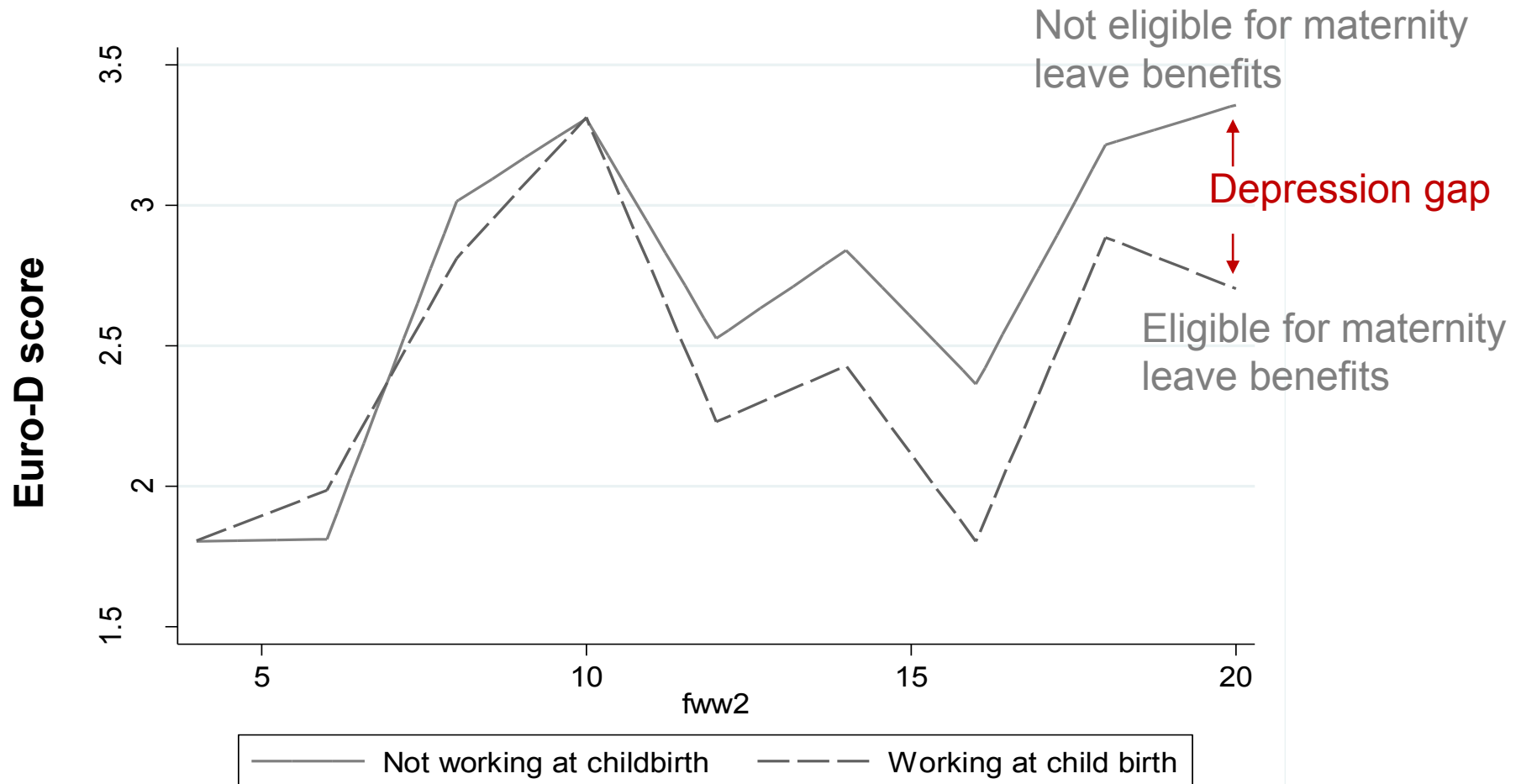
Does maternity leave reduce the long-term risk of depression among mothers?



Full wage weeks of maternity leave, 1960-2010 (Anne Gauthier 2011)



Euro-D Depression score by Full Wage Weeks of Maternity leave (range: 0-12)



Depression score by Full Wage Weeks of Maternity leave, treatment and controls

	Full-wage week of maternity leave benefits		Difference high-low	% change
	Low	High		
working	2,64	2,51	-0,13	
not working	2,52	2,82	0,30	
		DiD	-0,43	-16,17%

Interpretation: Moving from a maternity leave with limited coverage to one with comprehensive coverage around the birth of a first child reduces late life depression scores by 16%

...But, no effect on any physical health outcomes!

Social policies and health

- Conditional cash transfer programmes (e.g., Oportunidades, Familias en Accion, NYC Opportunities)
- Compulsory schooling laws (e.g., Lleras-Muney 2005)
- The expansion of food stamps (e.g., Almond et al 2003)
- The expansion of the Earned income tax credit (e.g., Evans & Garthwaite)
- The rise in South African pensions (Case, 2004)
- Changes in income brought by technological changes (e.g., Adda et al 2009)
- Casino-based funds studies (Costello et al 2003)

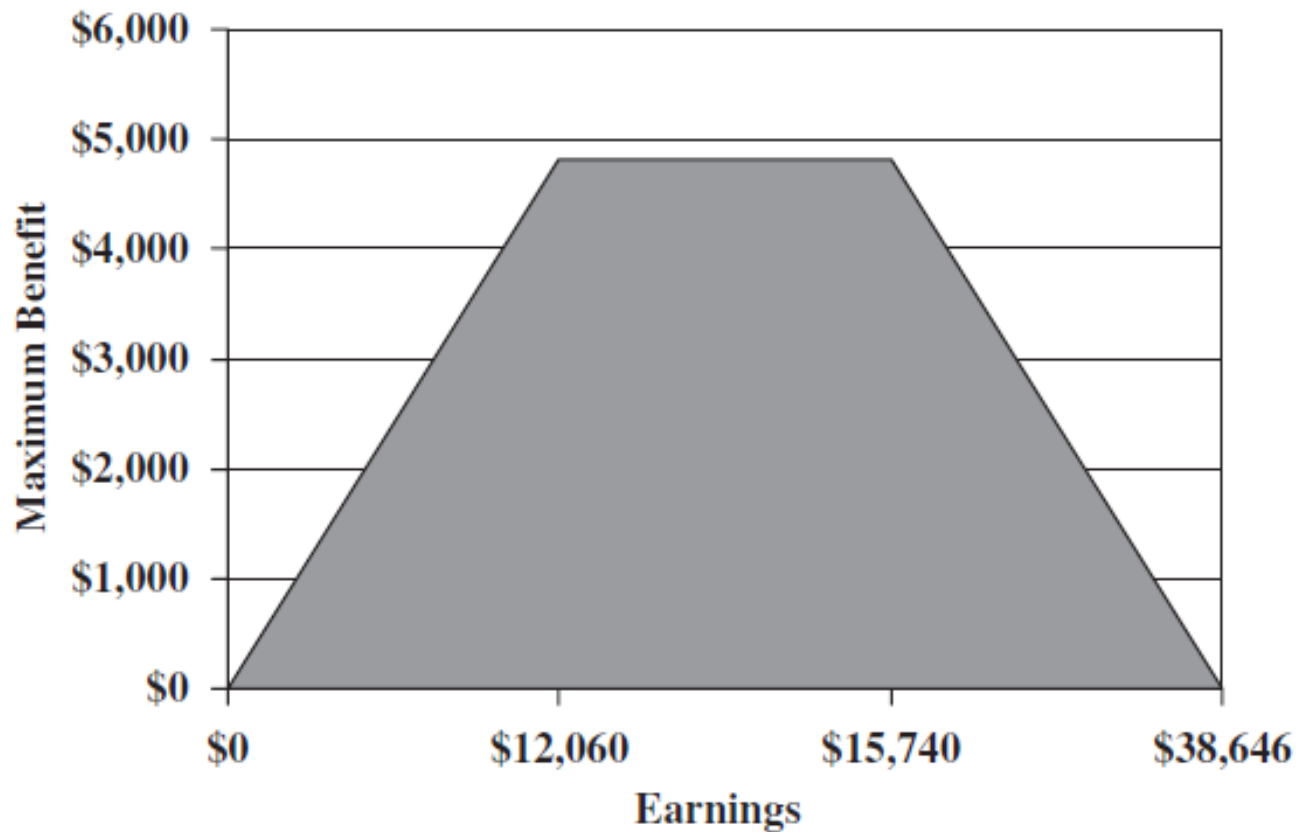
Social policy and biology

- Social policies can influence mental health, but no clear evidence that they can improve physical health
- We have limited understanding of the biological mechanisms:
 - Can changes in SES lead to changes in biology?
 - Can we understand the causal relationship between SES and biomarkers by looking at changes in SES?

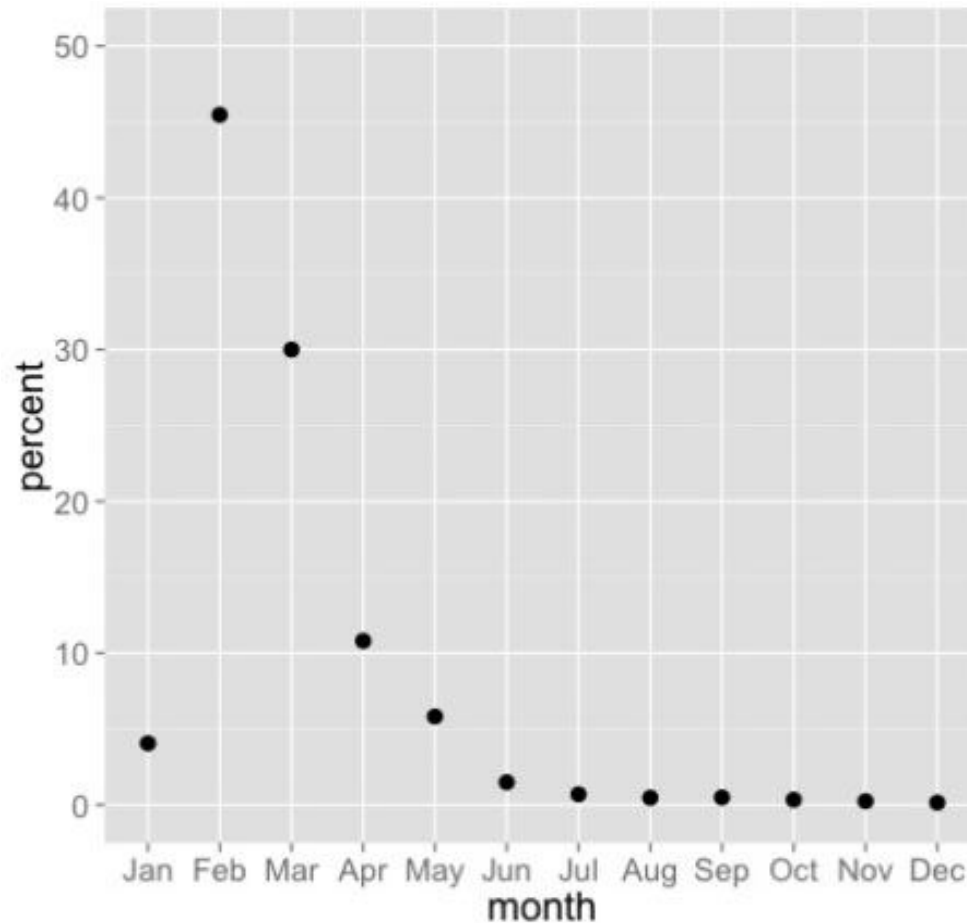
Earned Income Tax Credit (EITC)

- EITC is a refundable tax credit targeted at low-wage workers in the US; it increases the incomes of disadvantaged single mothers by increasing labour market participation and wages.
- Largest US federal **antipoverty program**
- EITC would give a minimum wage worker with two children a 40% increase in annual earnings

Earned Income Tax Credit (EITC) parameters, single parent with >1 child



Earned income tax credit disbursement by month



Impact of EITC disbursement month on biomarkers

	Women (<i>n</i> = 3571)			Men (<i>n</i> = 3354)		
	Coef/OR	Lower 95% CI	Upper 95% CI	Coef/OR	Lower 95% CI	Upper 95% CI
Systolic blood pressure	−0.078	−0.232	0.076	0.207	−0.033	0.447
Diastolic blood pressure	−0.125	−0.273	0.023	0.171	−0.004	0.347
Forced expiratory volume	−0.082	−0.247	0.083	0.045	−0.254	0.343
Pulse rate	0.343	0.074	0.611	0.174	−0.070	0.418
Metabolic						
HDL cholesterol	−0.386	−0.681	−0.092	0.120	−0.153	0.394
LDL cholesterol	0.238	0.038	0.437	0.152	−0.275	0.578
Triglycerides	0.218	0.020	0.417	−0.053	−0.300	0.194
Haemoglobin A1c	0.186	−0.005	0.377	0.069	−0.106	0.244
Glucose	0.089	−0.046	0.225	0.095	−0.044	0.234
Infection & immunity						
C-reactive protein	0.026	−0.087	0.138	0.003	−0.174	0.180
Lymphocytes	−0.342	−0.506	−0.178	−0.135	−0.551	0.281
Illness ^a	0.999	0.997	1.002	1.000	0.998	1.001
Respiratory infection ^a	1.001	1.000	1.002	1.000	0.999	1.001
Cold ^a	0.990	0.983	0.997	0.995	0.990	1.001

Giving Mom a Break: The Impact of Higher EITC Payments on Maternal Health[†]

By WILLIAM N. EVANS AND CRAIG L. GARTHWAITE 

Outcome	Preexpansion mean for treatment group	DD
Risky albumin	0.262	−0.088 (0.045) [0.052]
Risky c-reactive protein	0.437	−0.083 (0.050) [0.098]
Any risky inflammatory condition	0.493	−0.096 (0.050) [0.057]
Poisson model: number of risky inflammatory conditions	0.493	−0.217 (0.099) [0.029]

Conclusions

- Government policies that influence social determinants can lead to changes in mental health, perhaps in physical health
- Policy changes can help us evaluating causal hypothesis on the impact of social determinants on health
- Some evidence suggests that increasing income through policies leads to small changes in biomarkers, although sometimes these changes are health-promoting and sometimes health-damaging (e.g., increased smoking)
- Before we get too excited about biological mechanisms, we must establish which aspects of SES causally affects health – policies offer a potential avenue to address this



Lifepath

Healthy ageing for all

KING'S
College
LONDON

CONDITIONAL CASH TRANSFERS IN NEW YORK CITY

The Continuing Story of the
Opportunity NYC–Family Rewards Demonstration

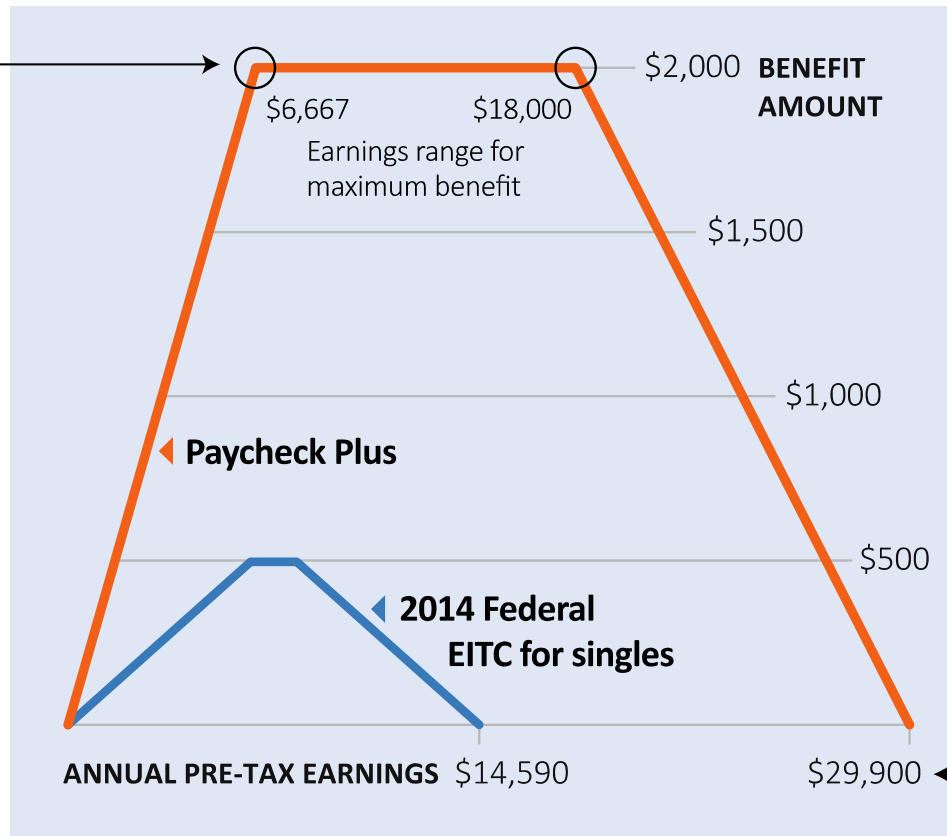
Opportunity NYC –Family Rewards

- Experimental, privately funded CCT program to help families break the cycle of poverty
- First CCT program in a high-income country
- Launched in 2007 in NYC
 - Intervention: Cash assistance to low-income families to reduce immediate hardship, but conditioned on families' efforts to build up their 'human capital', ie. To reduce their risk of long-term poverty
 - Cash benefits tied to pre-specified activities i.e., children's education, preventive health care, parent's employment
 - US\$8,700, on average, over 3-year period
- Pilot for 3 years, ending in 2010
- 4,800 families and 11,000 children

Paycheck Plus

Making Work Pay for
Low-Income Single Adults

It offers a more generous maximum benefit — \$2,000 rather than \$496 — to workers making up to \$18,000. Since participants receive more for earning more, the supplement is expected to promote work.



It extends benefit eligibility to single workers earning close to \$30,000, nearly doubling the income cutoff for the federal EITC.