

New Directions for the Annals of Occupational Hygiene?

Noah Seixas
Chief Editor

BOHS Annual Meeting
Glasgow
April 28, 2016

What is the Annals of Occupational Hygiene?

- Premiere international scientific journal
 - “Causation and Control of work-related ill-health”
- Helps define field of occupational hygiene
- Forum for substantive debates in OH science and profession
- Flagship publication of BOHS

What is the Annals of Occupational Hygiene?

- Premiere international scientific journal
 - “Causation and Control of work-related ill-health”
- Helps define field of occupational hygiene
- Forum for substantive debates in OH science and profession
- Flagship publication of BOHS

Is the Annals fulfilling these goals?
Will it continue to do so in the future?

What do we mean by “Exposure”

- **Substances** in the external environment which we come in contact with.

What do we mean by “Exposure”

- **Substances** in the external environment which we come in contact with.
- What about:
 - Physical agents
 - Musculoskeletal Strain
 - Acute Injury risks (e.g., work at heights, operating vehicles, machinery, energized systems)
 - Work load
 - Shift work
 - Psychosocial stress

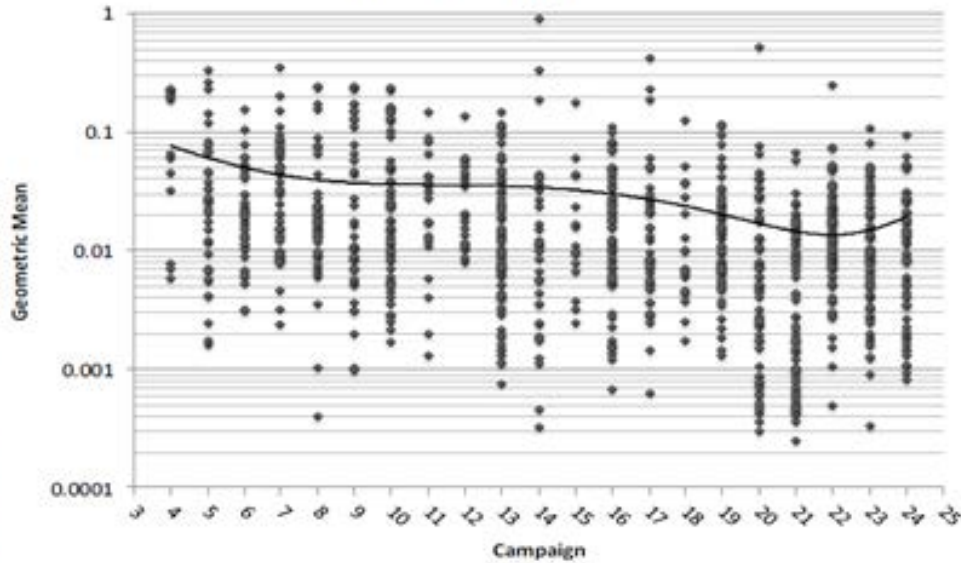
What do we mean by ‘Occupational’

- Activity for which you are paid?
- Activity which you do at a specified location during regular working hours?
- Salaried work?
- Volunteer work?
- Contract work?
- Freelance?
- Home-based piece work?
- Arts or crafts sold at market?
- Childcare and home-making?

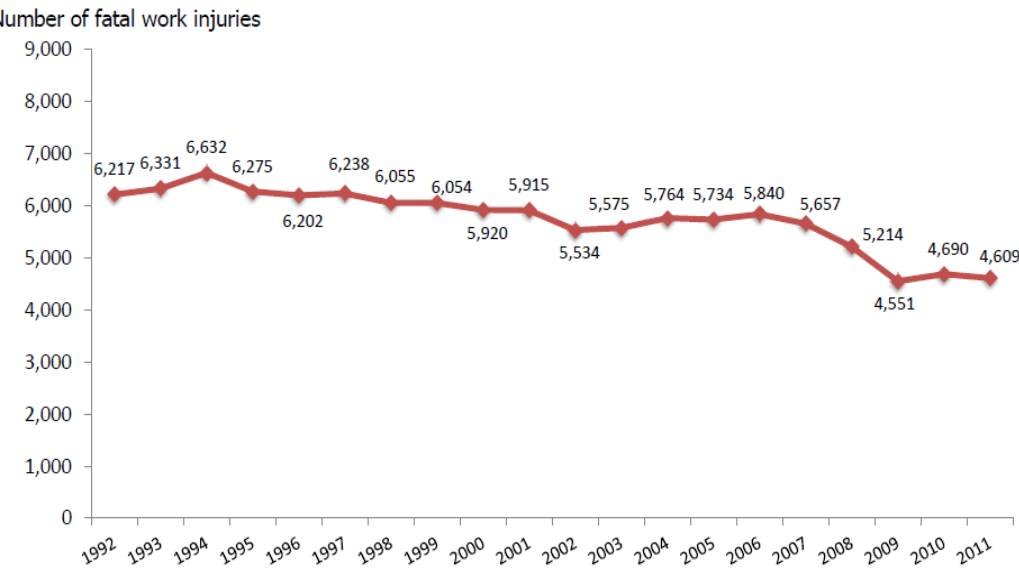
Changes in the world of work

- Changing Work Organization
 - Fissuring
- Workforce Demographics
 - Vulnerability
 - Chronic disease
- Blurring of work and non-work exposures/risks
- Globalization
 - In production (supply chains, logistics)
 - In migration
- Other important trends
 - Climate change
 - Decrease in unionization
 - National and international regulatory/policy logjam
 - Competition for decreasing research funding
 - New investigative technologies (e.g., exposomics, personal sensors)

Temporal trends in respirable quartz concentration in mg/m³ (992 cells)



Number of fatal work injuries, 1992–2011*

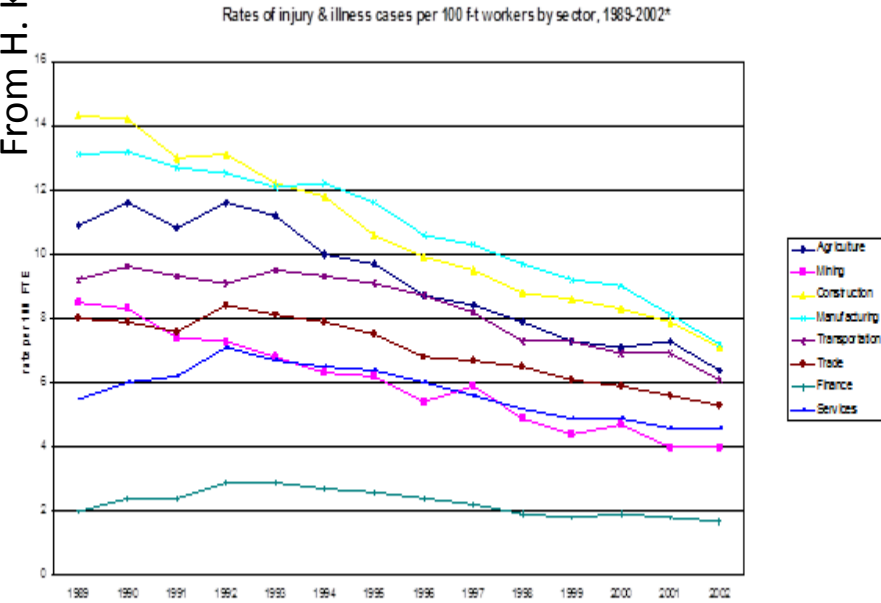


Decline in injury rates/exposures

Exposure: ~-10%/yr (+4 to -32%)

Creely, et al, Review of trends in exposure, 2007

From H. Kromhout



* Total last working case rate. Source: BLS Public Data Query: <http://www.bls.gov/iif/osh/os/osh99supplemental%20news%20release%20tables>

Case and Deaton

PNAS, 2016

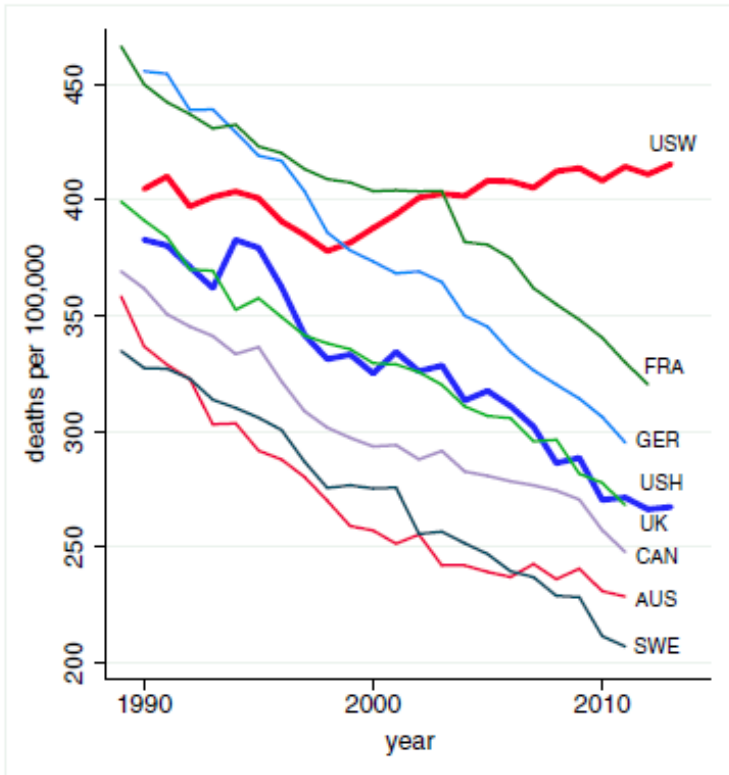


Fig. 1. All-cause mortality, ages 45–54 for US White non-Hispanics (USW), US Hispanics (USH), and six comparison countries: France (FRA), Germany (GER), the United Kingdom (UK), Canada (CAN), Australia (AUS), and Sweden (SWE).

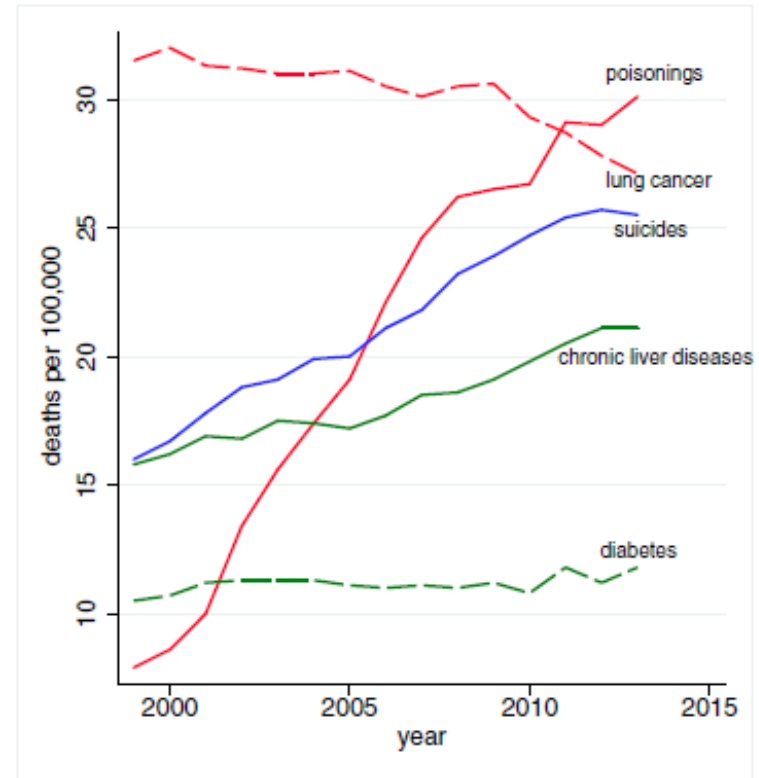
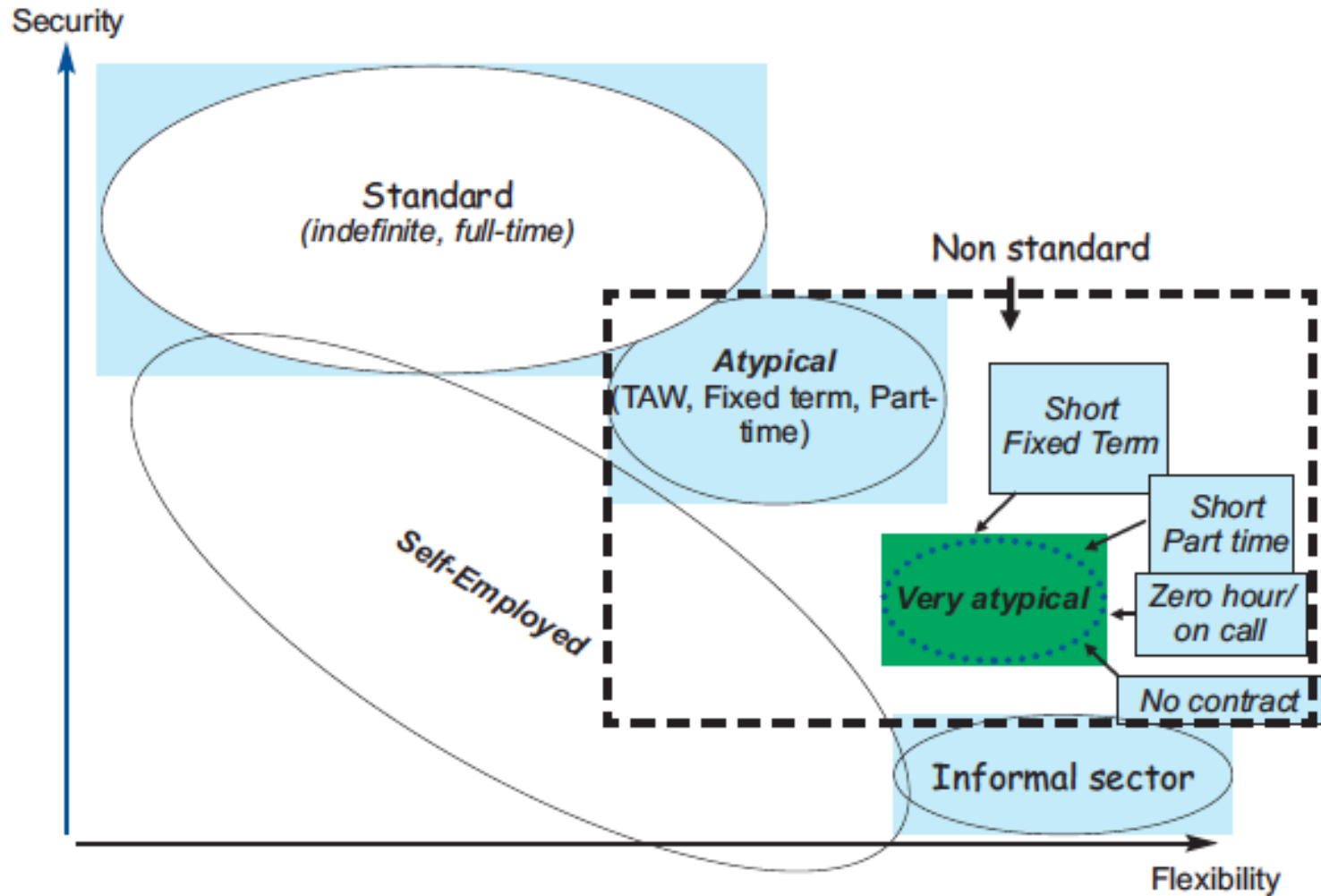


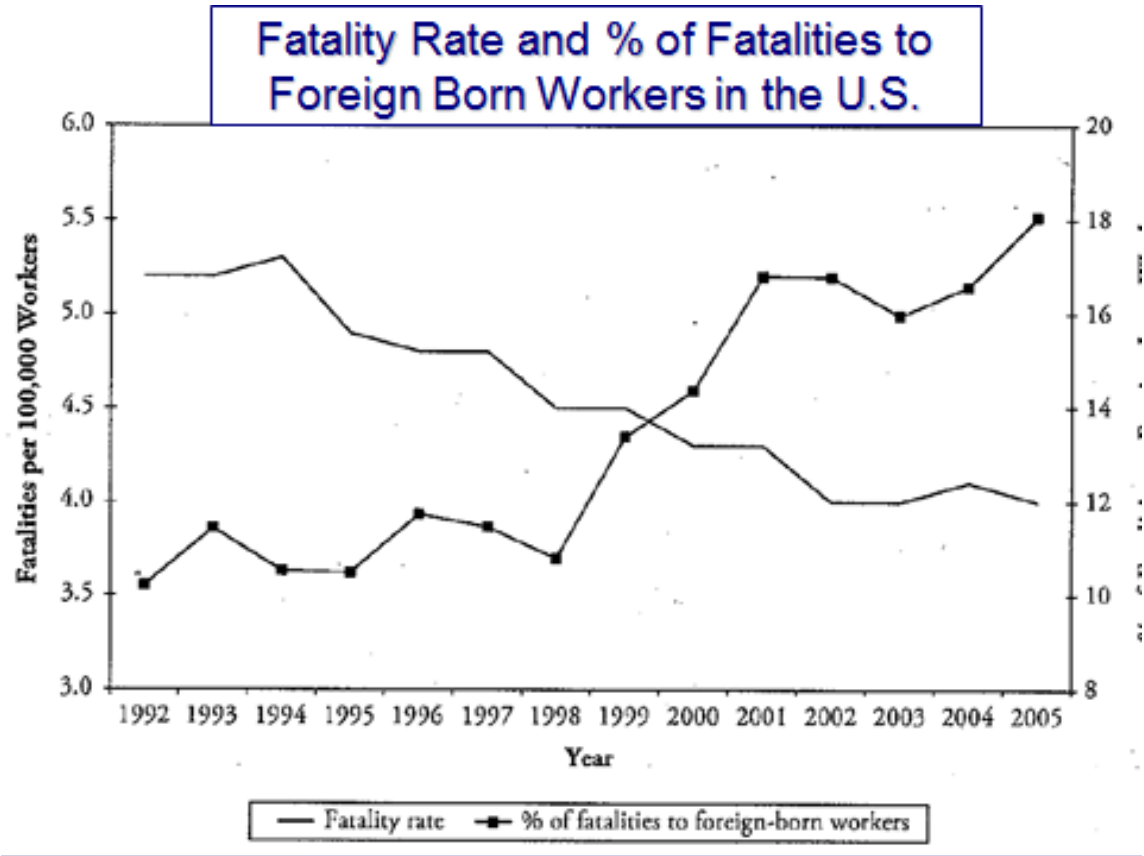
Fig. 2. Mortality by cause, white non-Hispanics ages 45–54.

Standard and Non-Standard Forms of Work



Demographics of the Workforce

- Age
- Gender
- Nativity
 - Language
 - Culture
 - Vulnerability
- Chronic Disease
 - Obesity



Increasing Disparities

With respect to:
age, gender, race, nativity, etc.

- Income
- Wealth
- Health
 - Status,
 - Mortality,
 - Well-being

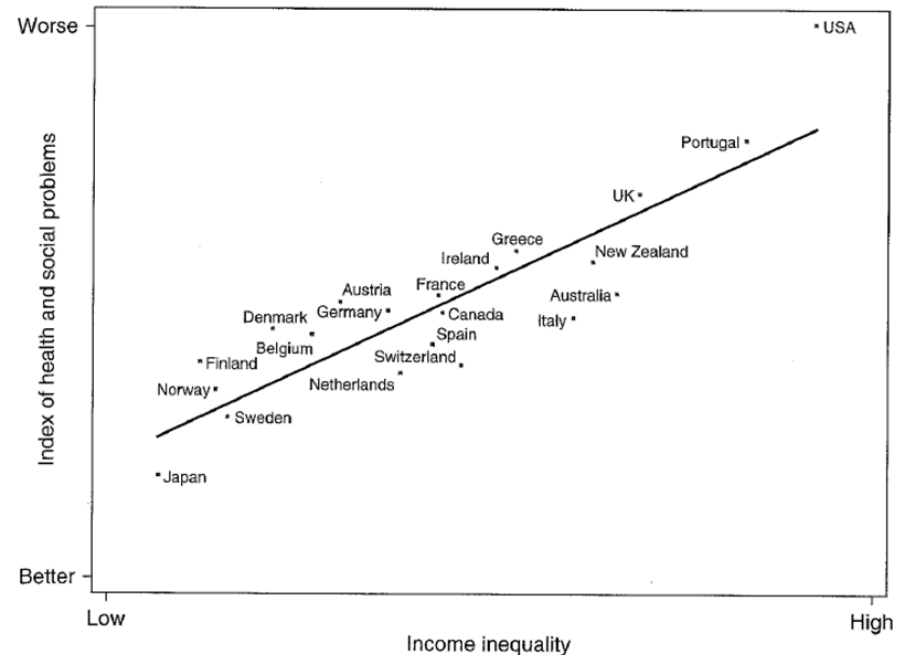


Figure 9.6 Regression line showing that health and social problems are worse in more unequal societies. Source: reprinted from Richard Wilkinson and Kate Pickett, *The Spirit Level: Why Greater Equality Makes Societies Stronger*, New York: Bloomsbury, 2010, with the kind permission of the Equality Trust.

By Joel Goh, Jeffrey Pfeffer, and Stefanos Zenios

Exposure To Harmful Workplace Practices Could Account For Inequality In Life Spans Across Different Demographic Groups

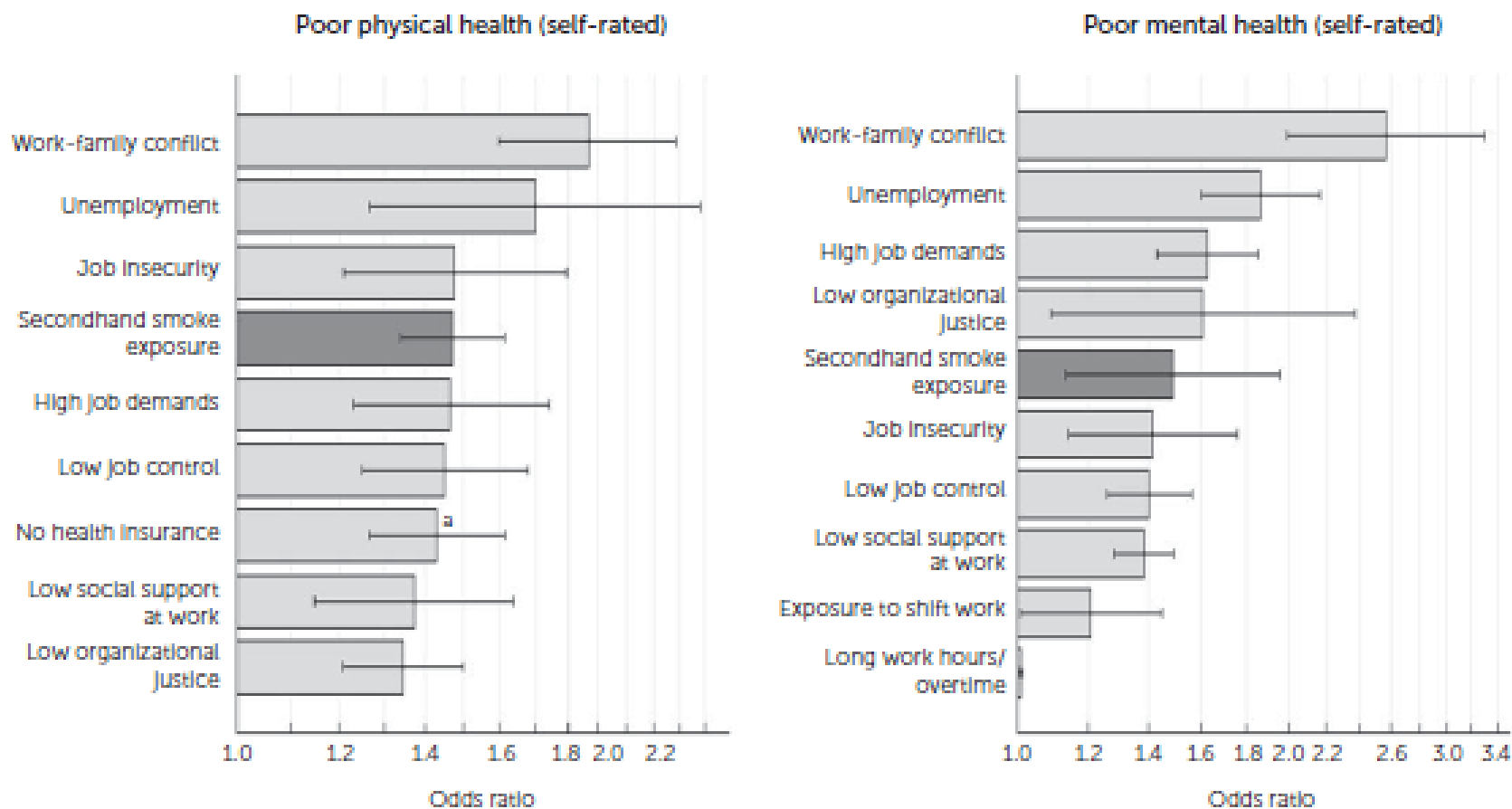
DOI: 10.1377/hlthaff.2015.0022
HEALTH AFFAIRS 34,
NO. 10 (2015): 1761-1768
©2015 Project HOPE—
The People-to-People Health
Foundation, Inc.

EXHIBIT 1

Workplace-Attributable Fraction Of Annual Mortality And Adjusted And Unadjusted Life Expectancy At Birth, And Workplace-Attributable Loss In Life Expectancy, By Demographic Group

Education (years)	Workplace-attributable percent of annual mortality	Life expectancy (years)		
		At birth, unadjusted	At birth, adjusted for workplace exposures	Loss, attributable to workplace
MEN				
Non-Hispanic white				
17 or more	4.8	82.18	82.60	0.42
13-16	9.2	79.93	80.79	0.93
12 or fewer	13.0	71.74	73.20	1.72
Non-Hispanic black				
17 or more	10.4	77.92	78.72	1.02
13-16	12.0	76.35	77.49	1.34
12 or fewer	19.0	68.59	70.66	2.77
Hispanic				
17 or more	6.2	83.92	84.44	0.55
13-16	13.5	81.92	83.12	1.34
12 or fewer	19.3	77.50	79.33	2.30

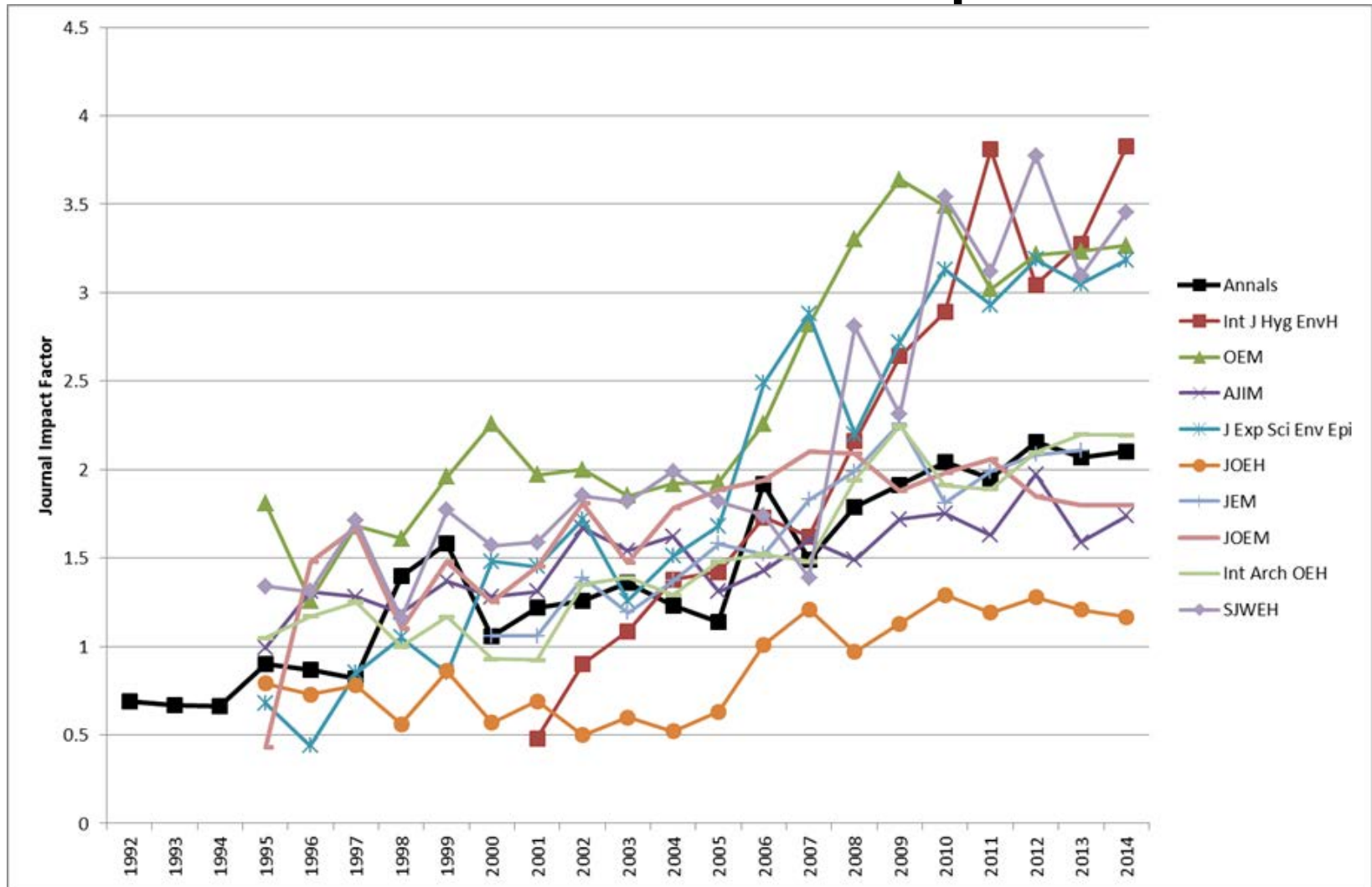
Figure 1. Comparing health effects from work stressors to secondhand smoke exposure



Where does this leave us?

- Many (most) workers in more vulnerable/precarious employment
 - Including high skilled employment; uncertainty, stress, etc.
- Many significant health conditions in workers caused by workplace and other social conditions
 - E.g., stress-related conditions, cardiovascular, and musculoskeletal disorders, obesity, depression, anxiety, substance abuse, and violence
 - Separation of “work” and “non-work” is in some ways artificial
- Occupational hygiene, and the science on which it is based, needs to evolve to better address the exposures affecting the health of workers

JIF for AOH and Competitors



AOH Strategic Review

- Two series of interviews
 - Familiar with AOH
 - Allied fields but less closely associated
- Analysis of citations
- Report and recommendations
 - Editors
 - **Membership**
 - Council
- Changes implemented with publisher for 2017

Interviews: Key Findings

- AOH is highly respected
 - Authors appreciate review process
- Known for publishing
 - Exposure assessments: traditional exposures
 - Methodological research
- “Annals” is important for recognition
- “Hygiene”
 - Implies traditional dust, chemical, biological exposures
 - Is largely outdated
 - May put off researchers in allied fields
- JIF and topical relevance drives journal selection
- Expanded scope of ‘exposures’
 - Psychosocial Stressors
 - Organizational factors and management
 - Ergonomics
 - Injury
 - Metabolic/physical activity

Citation analysis: AOH and competitors

Published in 2012	Article		
	#	Contribution	# Items with
	items	to 2014 IF	no contribution
			to 2014 IF
Annals (2.3)	86	2.3	27 (31%)
AJIM (1.8)	114	1.8	23 (20%)
l'Nat'l Archives (2.3)	82	1.9	21 (26%)
l'Nat'l Journal (3.1)	68	3.3	8 (12%)
JESEE (2.8)	74	3.0	12 (16%)
JOEH (1.1)	101	1.2	45 (45%)
JOEM (1.7)	192	1.9	51 (27%)
OEM (2.8)	120	3.5	19 (16%)
SJWEH (2.9)	49	3.0	8 (16%)

Content of Low vs. High Citation Papers

Annals of Occupational Hygiene			
	n	Low Citations*	High Citations**
All	188	42 (22%)	50 (27%)
Methods paper	32	4 (13%)	12 (38%)
Technical paper	41	15 (37%)	3 (7%)
Other paper	14	3 (21%)	7 (50%)
Exposure assessment paper	101	20 (20%)	28 (28%)
<u>Paper Content</u>			
Review/meta/pooled analysis	13	2 (15%)	7 (54%)
Included health outcome	17	6 (35%)	10 (59%)
Assessing PPE/Engineering controls	23	9 (39%)	5 (22%)‡
Study involving nanotechnology	25	0	10 (40%)

Recommendations

- Maintain focus on workplace as a driver of health
- Expand perceived definition of ‘exposures’
- Enhance focus on *health* of workers
- Avoid narrowly technical papers
- Maintain traditional strengths
 - Aerosols, exposure assessment, methodology
- Drop ‘hygiene’

Recommendation

ANNALS OF WORK EXPOSURES AND HEALTH

Addressing the cause and control of work-related illness and injury

Rationale

- Signal a change
- Retain “Annals”
- Broaden from ‘Hygiene’ to ‘Work Exposures’
- Recruit scientists from closely allied fields
 - Authorship
 - Editorial Board
 - International Advisory Board

