Operationalizing the Concept of Well-being for Use in Occupational Safety and Health

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We know the world of work is undergoing major changes.

In the nature of work

Profound Changes in the Occupational World

- ❑ Work

  - ▪ Physical ➡ Mental

  - ▪ Production Service

    Health Care

  - ▪ New ways of organizing

    ⬇

    Contracting

    Downsizing

    Lean manufacturing

  - ▪ Work intensification

In the composition of workforce

Profound Changes in the Occupational World
(cont'd)

- ❑ Workforce
  - ▪ Older workers
  - ▪ More immigrants
  - ▪ More women
  - ▪ Multigenerational
  - ▪ More turnover
  - ▪ Less unionization

In the types of workplaces

Profound Changes in the Occupational World
(cont'd)

- Workplace
  - More small businesses
  - More telecommuting
  - New work plans
  - New work conditions
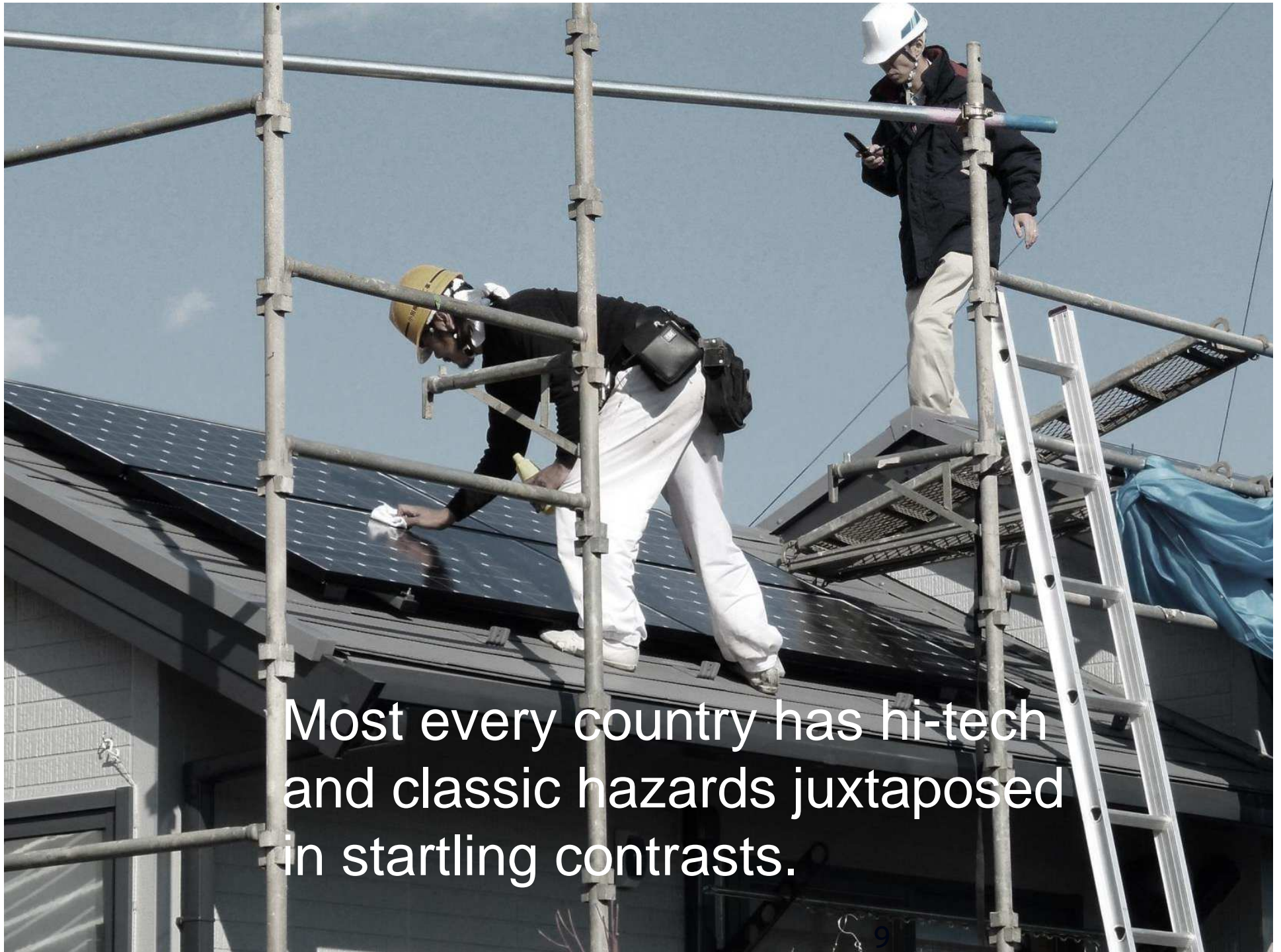
Most every country has hi-tech and classic hazards juxtaposed in startling contrasts.

While we have new hazards, we must deal with older, deadly ones.

Still, it is unconscionable that every year **2.3 million workers die, 160 million get sick** from workplace hazards, and **317 million are injured** in occupational accidents.

[ILO 2013]

Productivity: Presenteeism

MEDICAL and PHARMACEUTICAL 24% ($116.2M)

DIRECT MEDICAL COSTS

INDIRECT MEDICAL COSTS

PRESENTEEISM 63% ($311.8M)

Long-term disability 1% ($6M)

Absenteeism 6% ($27M)

Short-term disability 6% ($27M)

Source: Bank One

Figures are based on annual data for 2000. Workers' compensation accounted for less than 1% of indirect medical costs.
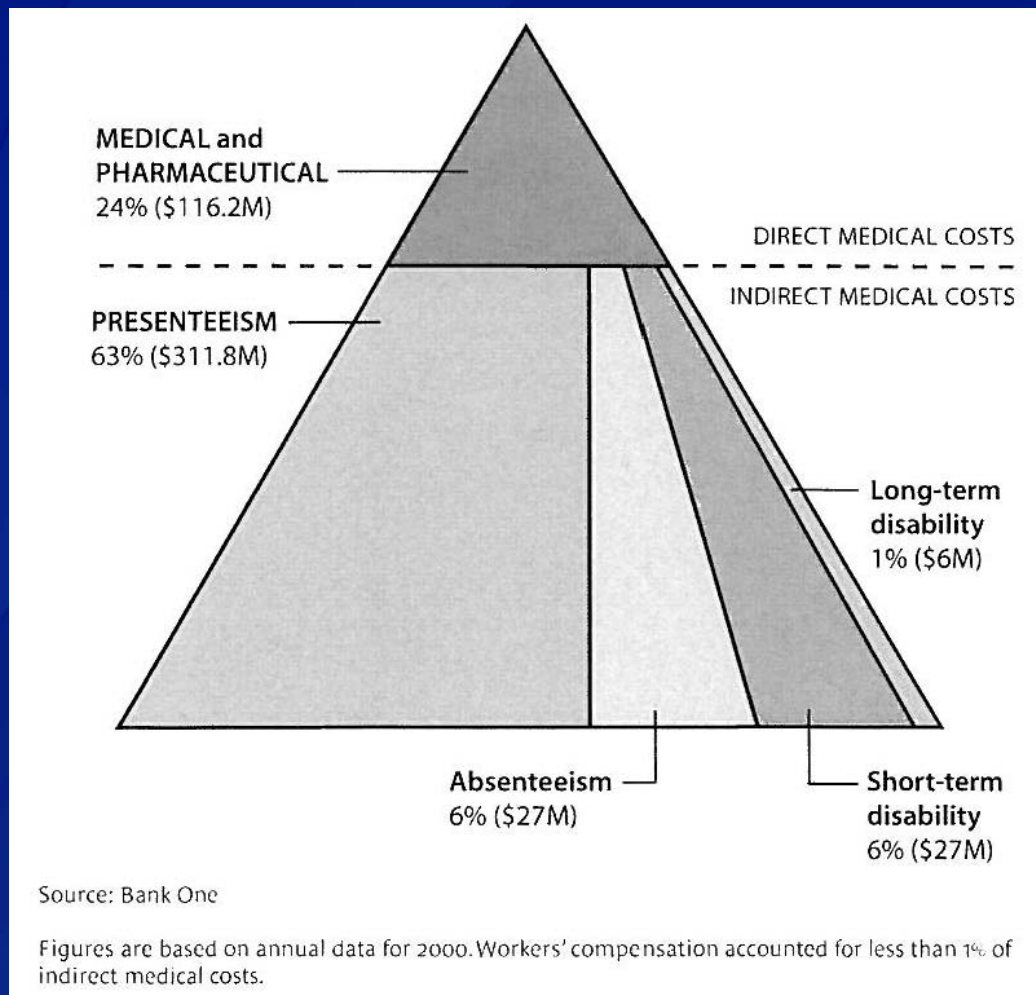
Source: Hemp [2004]

Cost Burden of Chronic Disease
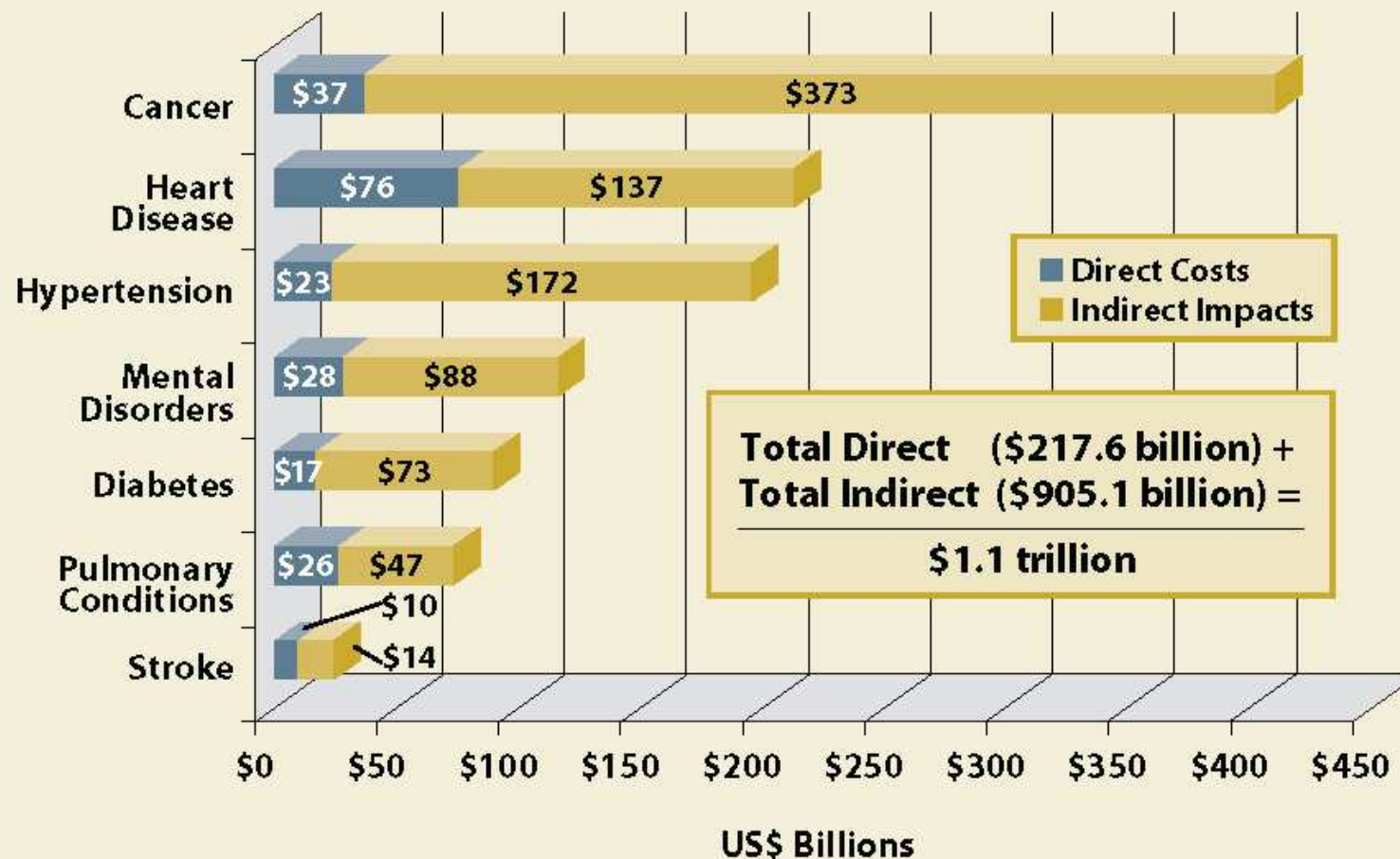
Forgone Economic Output Due to Chronic Disease
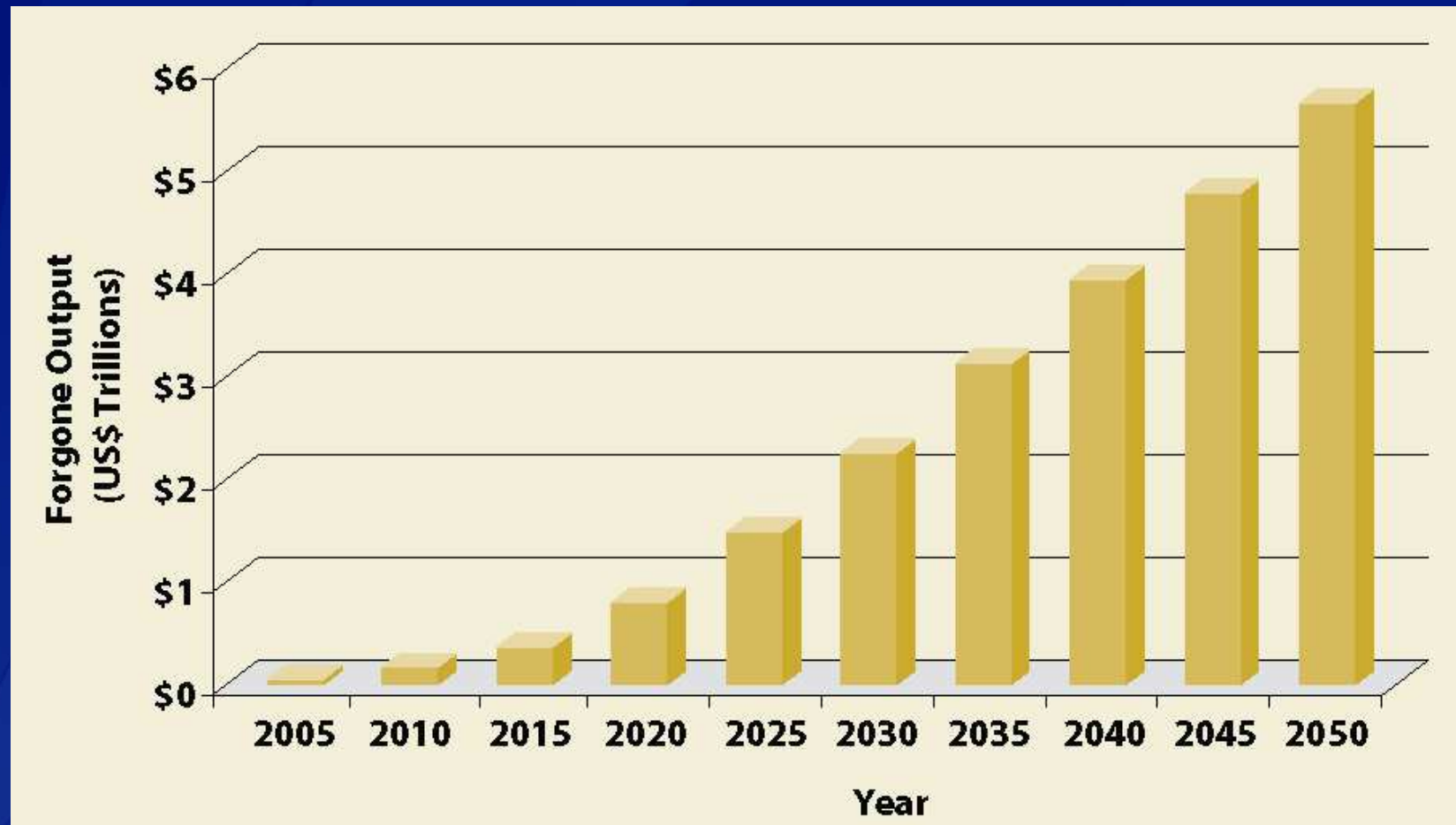
Broader Consideration of the Role and Impact of Work

❑ Many of the most prevalent and significant health conditions in workers not caused solely by workplace hazards

❑ Examples include stress-related conditions, cardiovascular, psychological, and musculoskeletal disorders, obesity, depression, substance abuse, and violence

❑ Separation of "work" and "non-work" is in some ways artificial

- Due to labor or employment contrast
- Compartmentalization leads to under-reporting

The burden on workers and the nation is not just due to work, but the interaction of work and nonwork factors.

Too often, investigators have thought of nonwork factors as confounders or something to be adjusted for.

A useful way to think of work and nonwork factors related to workers comes through consideration of four heuristic conceptual models.

[Schulte et al. 2012; Pandalai et al. 2013]

Interaction of Occupational and Personal Risk Factors in Workforce Health and Safety

Paul A. Schulte, PhD, Sudha Pandalai, MD, Victoria Wulsin, MD, and HeeKyoung Chun, ScD

Most diseases, injuries, and other health conditions experienced by working people are multifactorial, especially as the workforce ages. Evidence supporting the role of work and personal risk factors in the health of working people is frequently underused in developing interventions. Achieving a longer, healthy working life requires a comprehensive preventive approach. To help develop such an approach, we evaluated the influence of both occupational and personal risk factors on workforce health. We present 32 examples illustrating 4 combinatorial models of occupational hazards and personal risk factors (genetics, age, gender, chronic disease, obesity, smoking, alcohol use, prescription drug use). Models that address occupational and personal risk factors and their interactions can improve our understanding of health hazards and guide research and interventions. (*Am J Public Health.* 2012;102:434–448. doi:10.2105/AJPH.2011. 300249)

effectiveness of health protection and health promotion interventions. Specific problem-driven research focuses on a marginal effect that is averaged over the other risk factors in a given context. Such problem-driven research, although beneficial in understanding a specific risk factor, has led to a lack of comprehensive research on the combined role of PRFs and occupational risk factors (ORFs) in work-related illness and injury. ORFs and PRFs are not only potential confounders or effect modifiers of associations of each risk factor with disease, but they may also be on

Model 1: Additive Interaction

Occupational Risk Factor

Personal Risk Factor

Disease, Illness, or Injury Effect

Example: Additive Interaction

Work-Related Psychosocial Factors

Age

Musculoskeletal Disorders
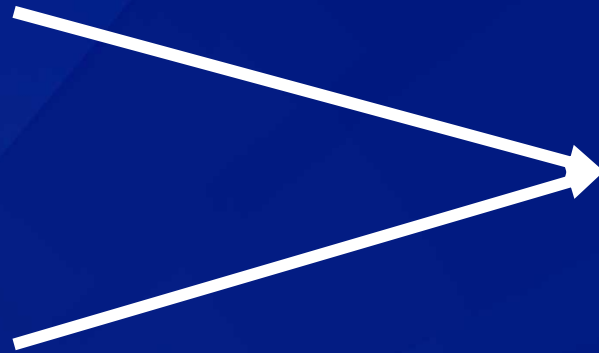
Example: Effect Modification by Personal Risk Factor

NAT2
Genotype

Aromatic
Amines → Bladder
Cancer
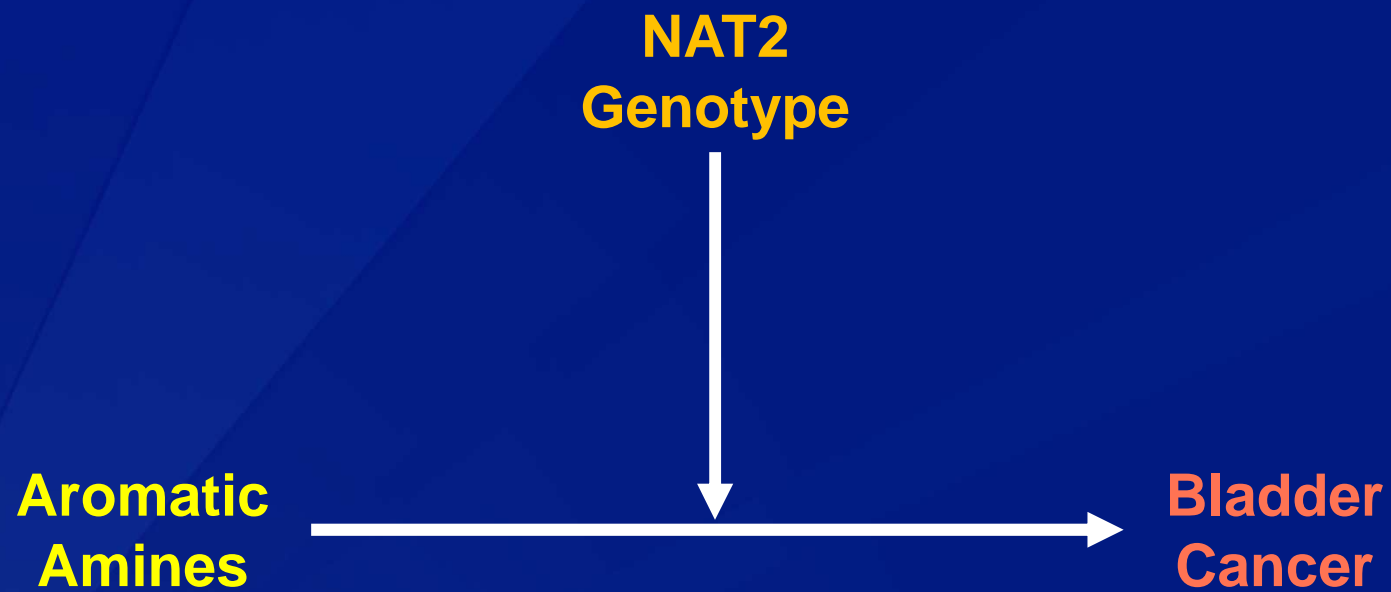
Model 3: Effect Modification by Occupational Risk Factor

**Occupational
Risk Factor**

**Personal Risk
Factor**

**Disease, Illness,
or Injury Effect**

Example: Effect Modification by Occupational Risk Factor

Animal-Related Allergens

Atopy → **Allergic Reaction**
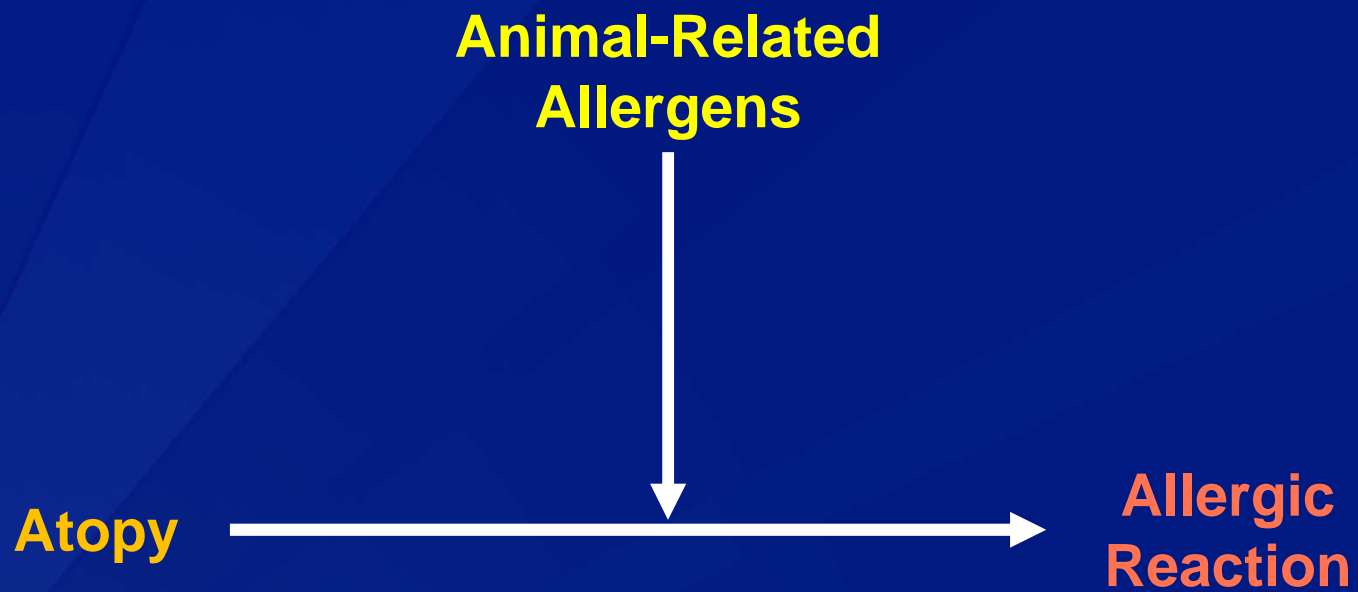
Model 4: Separate Pathway Interactions

Occupational Risk Factor $\longrightarrow$ **Disease, Illness, or Injury Effect$_1$**

Personal Risk Factor $\longrightarrow$ **Disease, Illness, or Injury Effect$_2$**

Example: Separate Pathway Interactions

Noise →→→ **Hypertension**

↓

Smoking →→→ **Coronary Heart Disease**
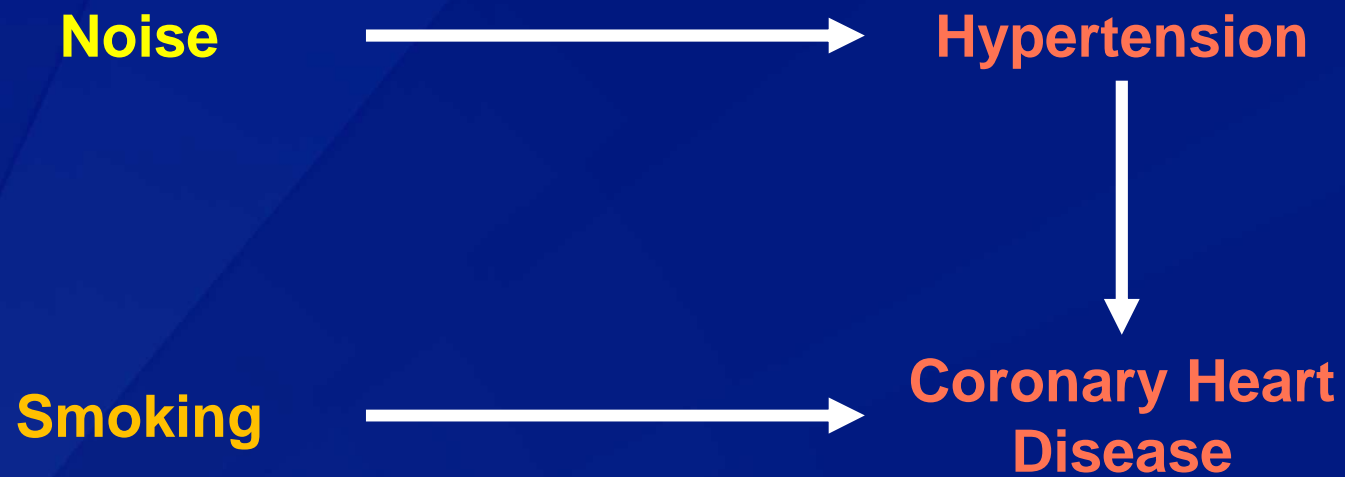
To address these work and nonwork factors that affect workers, a more holistic view is needed.

A culture of prevention oriented toward well-being.

Because while health and safety are very important

workers and other people live to have hopes, dreams, relationships, and achievements.

These aspirations are described by the construct referred to as "well-being."
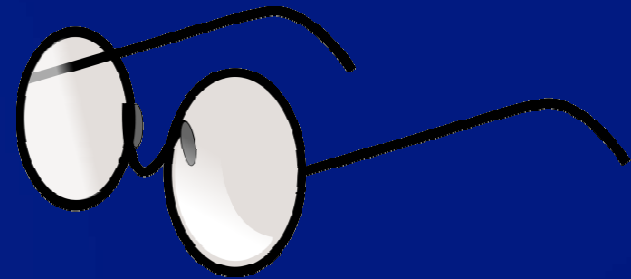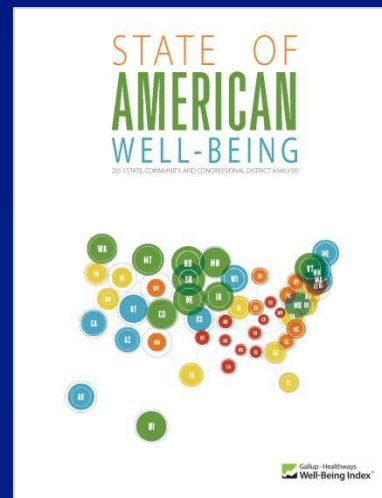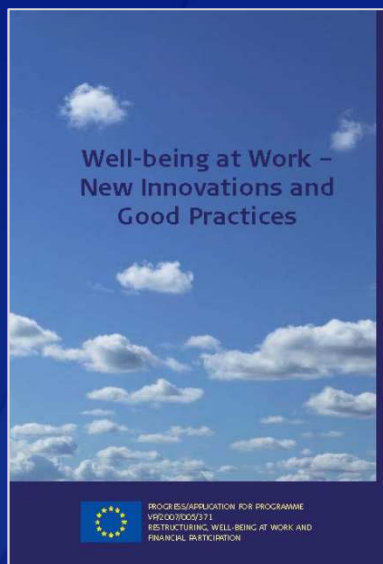
Well-Being

- Aspiring to a good life
- Flourishing
- Characterized by happiness, life satisfaction, positive emotion, self-determination
- Includes health, but goes beyond it
- Related to individual, enterprise and national productivity

Well-being of the population is a function of the well-being of the workforce because work:

- ❑ Is a generator of goods, services, income
- ❑ Affects the dependency ratio
- ❑ Gives meaning to life/dignity to the individual and family

Well-being (variously defined) is linked to:

- Lower healthcare costs

- Reduced injury

- Reduced illness

- Lower ratio of absenteeism and presenteeism

- Worker and enterprise productivity

Well-being is extolled and promoted in numerous public policy and guidance documents. For example:

- ❑ Belgian Law on well-being of workers in the performance of their work (1996)

- ❑ NIOSH Total Worker Health™ Program

  - ▪ …policies for improving health and well-being (2010)

- ❑ Finnish Ministry: Policies for the work environment and well-being at work until 2020 (2011)

- ❑ Canadian Standards Association: Psychological Health and the Workplace

  - ❑ …promotes psychological well-being (2013)

- ❑ RAND report: Health and well-being at Work in the United Kingdom (2009)

"… and well-being"

Need: Define and Operationalize "Well-being"

- ❑ Reviewed literature 1980–2014

- ❑ Found more than 39 definitions of well-being

Examples

Well-being is the …subjective state of being healthy, happy, contented, comfortable and satisfied with one's quality of life. It includes physical, material, social, emotional ('happiness'), and development and activity dimensions.

UK Dept. Work and Pensions

Employee well-being represents the physical, mental, and emotional facets of employee health, synergistically acting to affect individuals in a complex manner.

Bakker and Demerouti [2007]

Examples (cont'd)

Well-being is defined in terms of consumption, i.e. in principle as objectively observable…. [A] person's well-being [is] equal to the value of the consumption to which he or she has access. Consumption is generated, in part, by households. Hence, the well-being of persons is determined, in part, by economies within the household.

Income is a measure of goods, not of well-being.

Ringen [1996]

Examples (cont'd)

Well-being at work means safe, healthy and productive work in a well-led organization by competent workers and work communities who see their job as meaningful and rewarding, and see work as a factor that supports their life management.

Anttonen & Räsänen [2008]

Differential Focus of Well-being

- Well-being at work

- Well-being of workers

- Employee well-being

- Workforce well-being

- Workplace well-being

- Well-being through work

Operationalize the Definition of Well-being

- ❑ Like "weather and freedom" in its structure

- ❑ No single measures define it exhaustively, that is "operationalizes" it

- ❑ Several elements contribute to it

- ❑ These elements are measurable

[Seligman 2012]

Can exposure-response models be developed?

Conceptual view of the possible relationship between work and non-work threats to, and promoters of, well-being. [Dashed lines show interaction of factors.]

Adapted from Schulte et al. [2014]
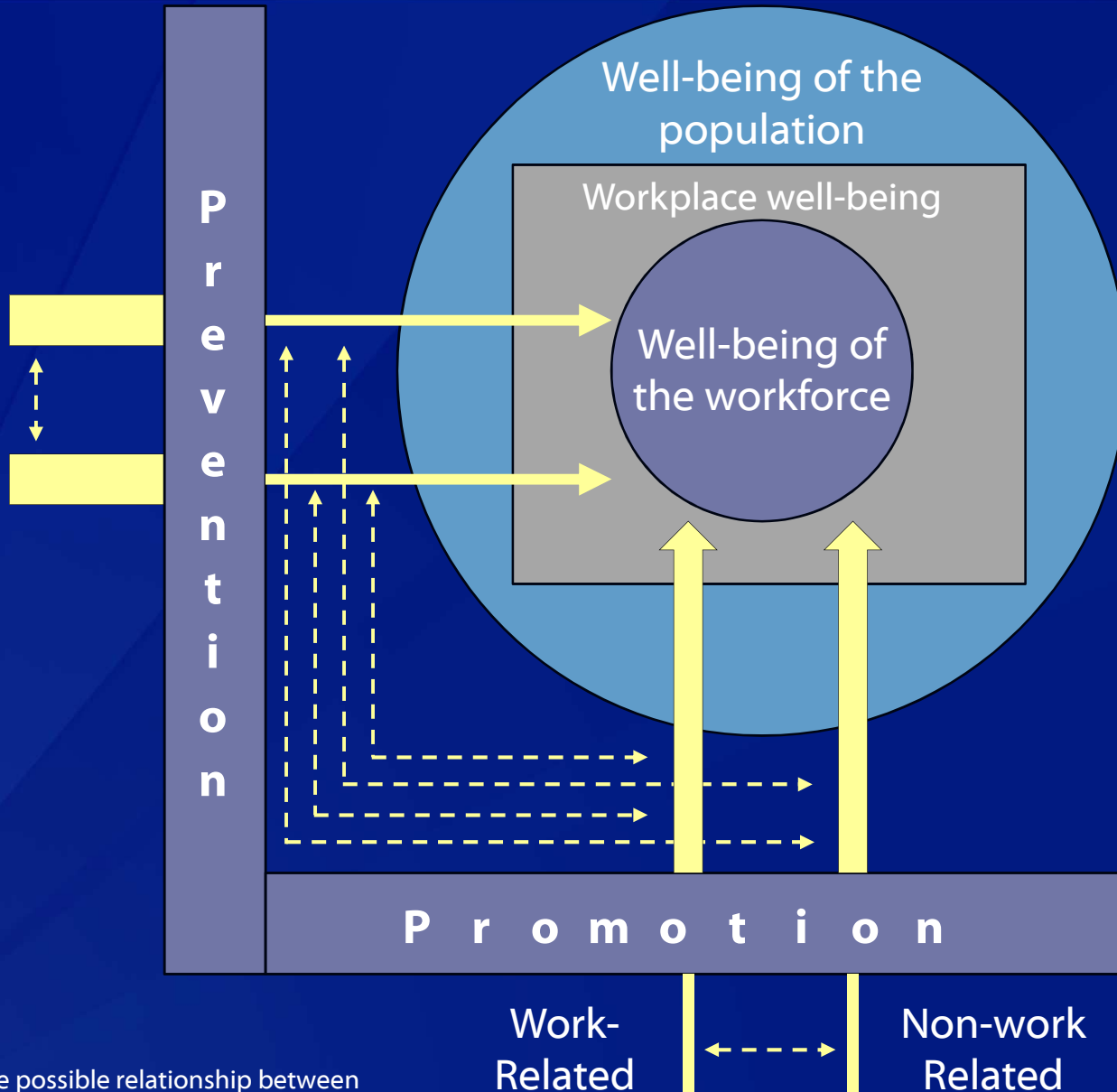
Difficulties

Well-being

- ❑ Both subjective and objective attributes
- ❑ How to measure across various work settings and conditions
- ❑ How to adjust for subjective difference
- ❑ Not static
  - ▪ Evolves with time
  - ▪ Concept evolves

Well-being in Quantitative Risk Assessment (QRA)

Criteria questions:

- ❑ Whether hazards (threats) to well-being can be defined and measured;

- ❑ Whether outcome/response of exposure to these hazards can be defined and measured;

- ❑ Whether it is possible to develop exposure-response models and whether these need to be quantitative or qualitative;

Well-being in Quantitative Risk Assessment (QRA) (cont'd)

❑ Whether risk can be characterized and will it be possible to account for aspects such as uncertainty in sensitive populations, etc.;

❑ Whether the risk characteristics of threats to well-being can be used to drive risk management strategies.

Well-being

- Driver of policy

- Target of policy?

- Means to achieve policy?

Responsibility for Well-being

❑ Well-being

- ▪ Inherent in the responsibility of the employer

- ▪ However, since it includes threats and promoters that are also nonwork factors – the employee has responsibility too.

  - • Slippery slope

    blaming the worker for decreased well-being

  - • Overlapping responsibilities

Caution

- ❑ Need to avoid thinking of well-being solely at the individual level

  - ▪ There is a broader social, economic, and political context

  - ▪ Well-being of workers influenced by all the domains in which they participate

- ❑ Value in thinking of well-being of the workforce

Incorporation of Well-being into Policy and Practice

Critical policy question:

- What actions should be taken to reduce threats to well-being and increase promoters of it?

- What is the relationship to regulations that circumscribe the actions that must be taken to protect workers and prevent disease injury and death

    - OSH Act, MSH Act, TSCA

    - Definition of health constrained to the absence of disease

    - However, WHO definition is:

        - Broader

        - Well-being is a central component

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity [WHO 1948]

- ❑ Using this definition alters the interpretation of OSH, MSHA, TSCA

- ❑ OSH Act calls for "preservation of human resources"

- ❑ While current legislature could be sufficient – may need new legislation

Example: Canadian Consensus Standard on Mental Health in Workers

Targets well-being

"Psychological well-being" is characterized by a state in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her community."

[CSA 2013]

Example: WHO Healthy Workplaces

Uses WHO definition of health involving well-being as a foundation

Example: Total Worker Health™ (TWH™)

- Strategy for integrating health protection and health promotion to prevent worker injury and illness and to advance health and well-being

- Currently attempting to operationalize "well-being"

Extensive Use of "Well-being" European Policies

1989–The Netherlands

- ❑ Legislation called for "well-being in the workplace"
- ❑ Defined in terms of ergonomics and organization of work

2011–Finland: Well-being at work

- ❑ "…this means improving employees' abilities, will, and opportunities to work. Work must be attractive and it must promote employees' health, work ability, and functional capacity. Good and healthy work environments support sustainable development and employees' well-being and improve the productivity of enterprises and the society (Ministry of Social Affairs and Health 2011)"

Barriers and Information Needs

- Issues in achieving well-being that are
    - Intractable
    - Difficult to achieve

Includes issues linked to

- Distribution of opportunity
- Income
- Lack of control
- Organization of work

Conflict between guidance for well-being

and

Employers right to manage the workplace

Evidence-base for what works and doesn't work in maintaining or achieving well-being

- ❑ Variable quality

- ❑ Job control correlated with higher well-being

- ❑ Job stressors with lower well-being

Policy Issues

- Is it a good idea to incorporate well-being as a focus for occupational risk assessments or guidance?

- Choice of definitions

- Role of occupational safety and health as initiator of conversation

- Role of numerous other disciplines

- Invest in operationalizing well-being first

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