



INSTITUTE FOR CIVIL JUSTICE

***The Economics of Integrating  
Injury Prevention and Health  
Promotion Programs***

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Preliminary. Discussion Draft. Subject to Change

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## ***Recent Trends Prompt Change in Employer Perspective on Worker Health Programs***

- **Rising healthcare costs**
  - Health insurance, disability programs and workers' compensation account for 10% of payroll costs
- **Erosion of distinction between nonoccupational and occupational injuries and illnesses**
  - Decline in acute traumatic injuries, and increase in chronic conditions
  - Increasing use of telecommuting, travel, and off-site contractors
- **Increasing interest in health promotion in addition to occupational injury and illness reduction**

## ***Longstanding Distinction Made Between Nonoccupational and Occupational Health***

- **Occupational health typically refers to aspects of health under direct control of employers**
  - Occupational injury compensated through workers' compensation in most states since early in 1900s
  - Workers' compensation statutes later extended or modified to include illnesses
  - These are the focus of injury and illness reduction programs
- **Health promotion programs typically target personal health habits**
  - Smoking, lack of exercise, poor nutrition and other behaviors are out of the direct control of employers

## ***We Focus on Two Related Explanations for Employer Investment***

- **For occupational injury and illness reduction, direct costs through regulation and workers' compensation explain employer investments**
- **For health promotion,**
  - **Increasing inability to distinguish occupational and nonoccupational health**
  - **Synergies or “spillovers” between occupational and nonoccupational health**
  - **Both lead to direct employer costs for nonoccupational health conditions**

# *Outline*

- **Brief Review of Literature**
- **Conceptual Model**
- **Empirical Illustration**

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# ***Health Promotion Literature Finds Evidence of Reduced Health Care Expenditures***

- **Ten Primary Categories (Aldana, 2001) of health risks targeted by health promotion programs**
  - **Tobacco use, BMI and obesity, cholesterol, hypertension, stress, diet, alcohol abuse, seat belt use, fitness, multiple risk factors**
- **Few studies use scientific design**
- **Examples of studies using randomized study design include Bly et al (1986), Fries et al (1993, 1994), Leigh et al (1998)**
  - **All four studies show significantly decreased utilization**
  - **All but Bly et al (1986) show significant reductions in health costs**
- **There is also evidence that injury and illness reduction programs reduce health costs**

## ***Some problems common to both literatures***

- **Relatively few scientifically-designed studies**
- **Little emphasis on cost-effectiveness**
- **Unrepresentative study populations**
- **Relatively short-term and limited impact measures**
  - **Worker outcome measures do not measure full economic or noneconomic impact of injury or illnesses**
  - **Employer outcome measures do not include retraining costs or worker replacement costs**

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**Very little research considers health promotion and injury reduction together**

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# ***Why Do Employers Invest in Health Promotion and Injury Reduction?***

- **Regulation explains some employer investment in injury and illness reduction**
  - E.g., OSHA
- **Profit maximization with workers' compensation mandated may explain occupational injury and illness reduction**
- **Economic theory suggests that in competitive labor markets, workers bear the cost of poor health**
  - Even higher workers' compensation costs are ultimately passed to workers as lower wages
  - Retraining, rehiring costs; and human capital investment by employers promote employer investment
    - These provide incumbents with advantage in labor markets

# ***The Model Predicts Underinvestment by Workers and Firms in Worker Health***

- **Model leads to externalities that suggest social investment in health that is *too low*.**
  - **Firms do not consider impact of investments on worker utility, only on profits**
  - **Workers do not consider impact of health on firm profits, only on their own utility**
- **Results suggest that there are gains to programs that**
  - **Encourage additional investments by firms in the workplace environment (i.e., injury and illness prevention)**
    - **This could be seen as OSHA**
  - **Encourage worker personal health investments (i.e., health promotion programs)**
    - **No OSHA equivalent for personal health!**

## ***When Are Their Gains to Coordinating These Programs?***

- **Gains to Coordinating programs emerge if there are “spillovers”**
  - **Administrative improvements**
    - E.g., measuring outcomes or motivating participation
  - **From personal health investments on the impact of workplace environment**
    - E.g., obesity and musculoskeletal conditions
  - **From workplace environment on the impact of personal health investments**
    - E.g., stress at work and personal health investments
- **Ambiguity in differentiating occupational nonoccupational health inputs can also be seen as leading to “spillovers”**

# ***Identifying and Measuring Spillovers Should Be a Goal of Occupational Health Economics Research***

- **Proper accounting for spillovers critical to**
  - **Identifying circumstances where there are gains to coordinating health promotion and injury and illness reduction**
  - **Measuring the effectiveness of injury and illness reduction and health promotion programs**
- **Understanding spillovers is also important for evaluating apportionment programs**
  - **Model suggests that apportionment should be set so that the gains to personal health investment and employer workplace environment are equal**

# *Outline*

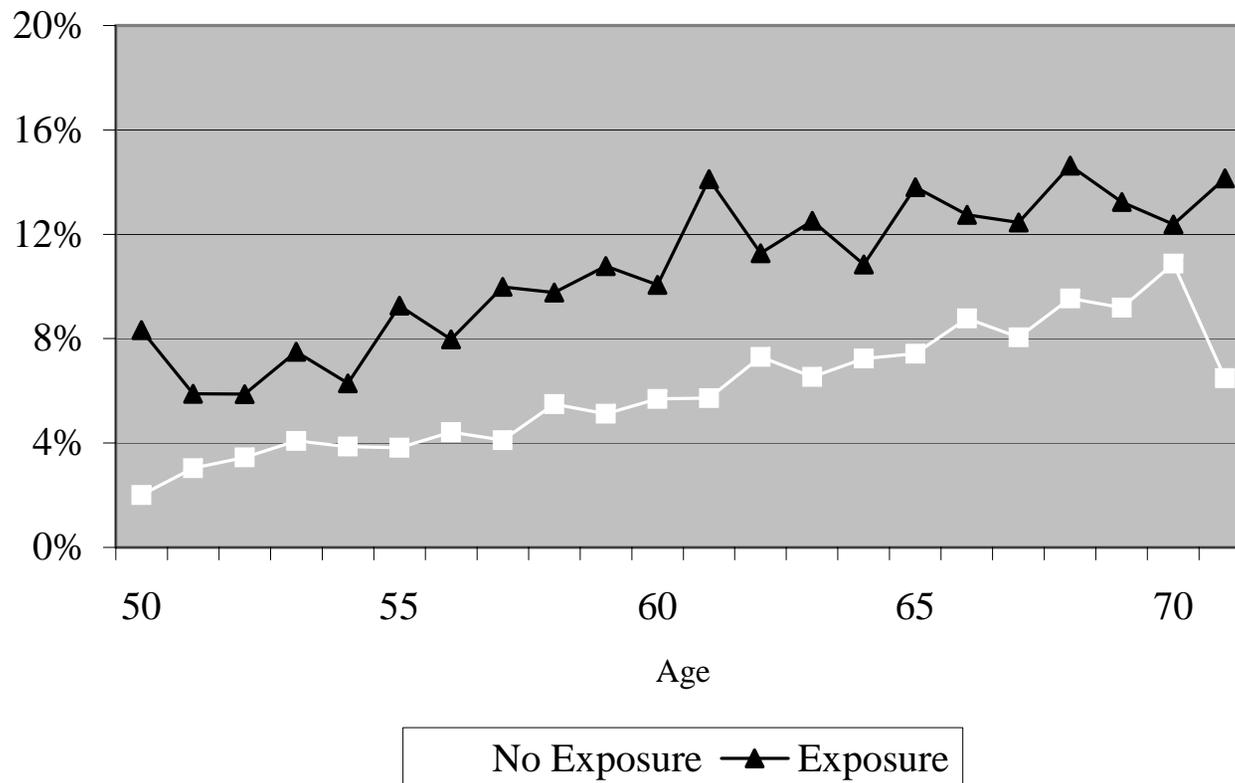
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# ***Exploring the Existence of Spillovers Using Sample Data***

- **We examined the relationship between the health effects of**
  - **Smoking (“ever smoked cigarettes”)**
  - **Exposure to harmful materials at work**
    - **Breathe dusts, fumes or vapors; exposed to organic solvents or pesticides**
- **We used the Health and Retirement Survey (HRS)**
  - **Sponsored by the National Institute of Aging**
  - **Panel survey of individuals aged 51-61 in 1992**
- **Consider respiratory disease, cancer, heart disease**

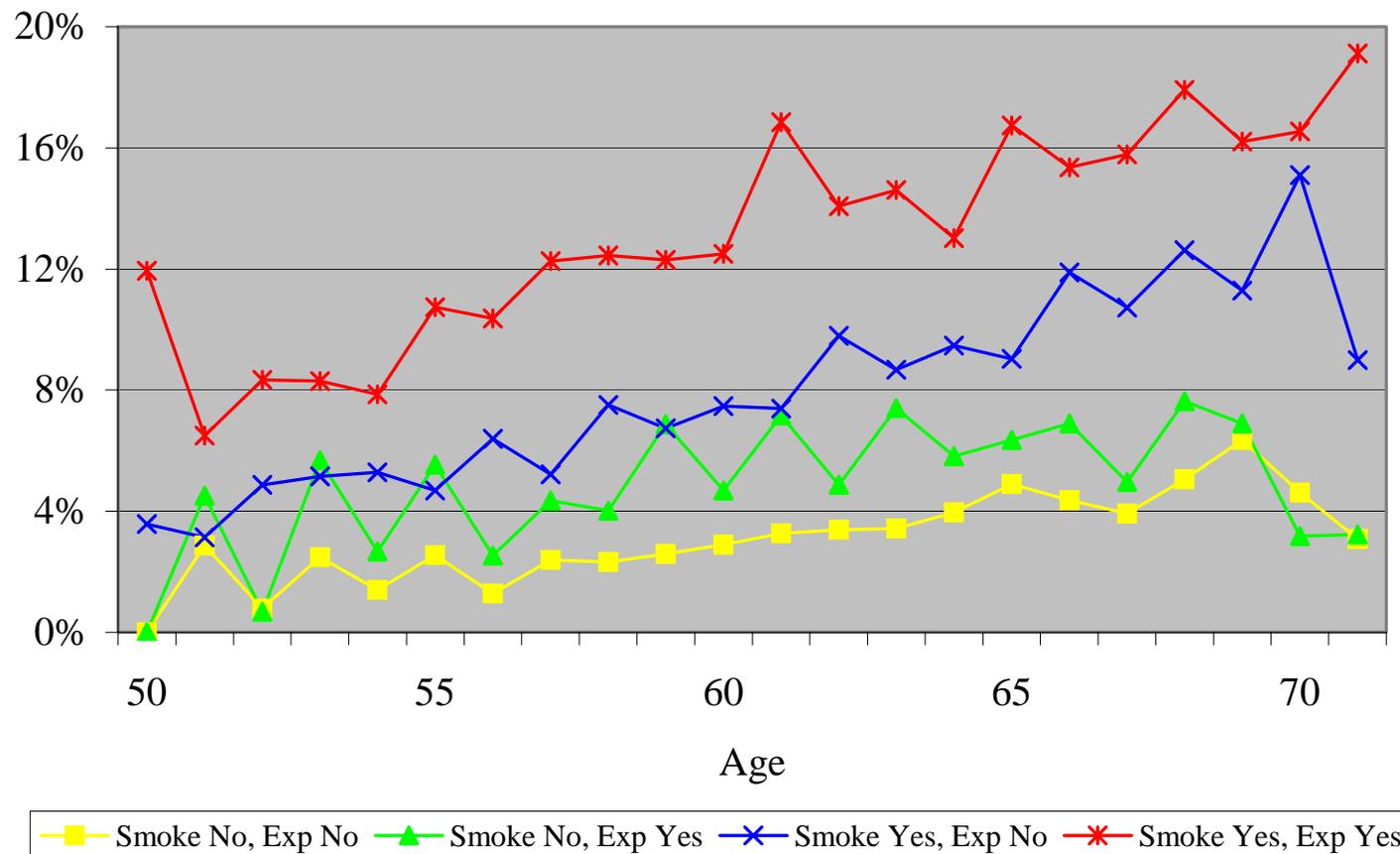
# Higher Exposure to Hazards Associated with Greater Frequency of Lung Disease

Figure 1. Frequency of Lung Disease by Age and Exposure Status



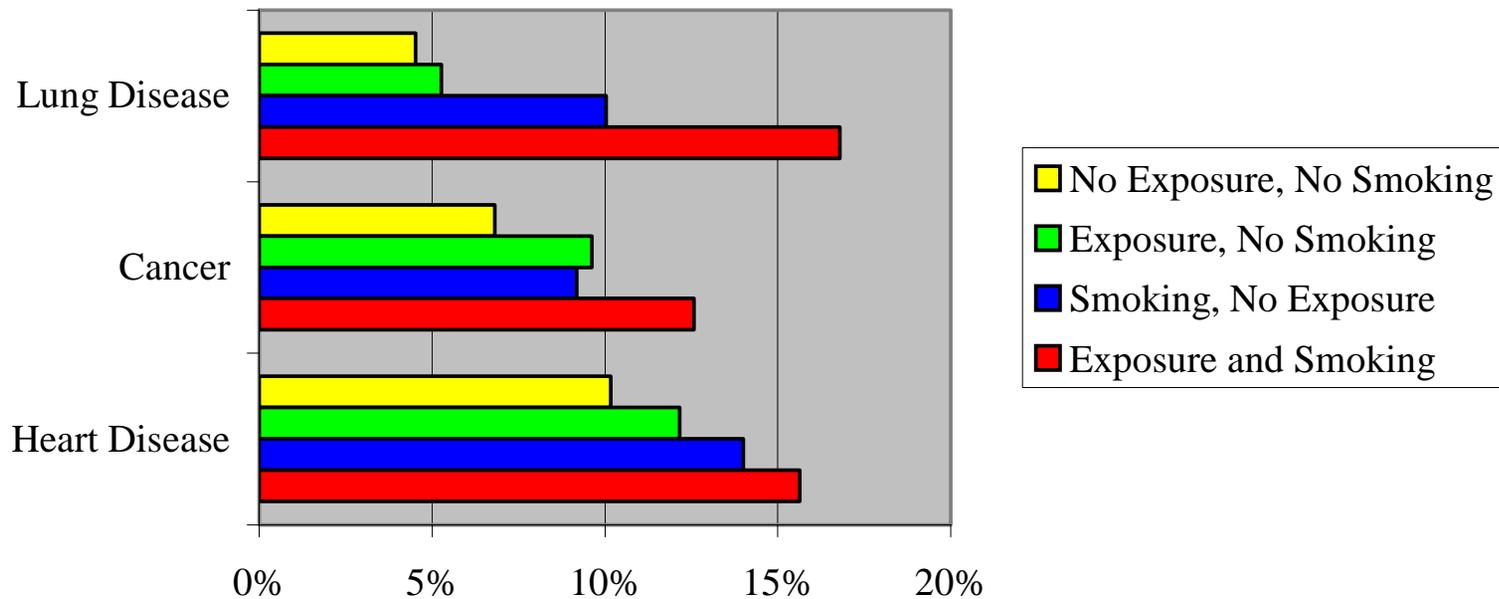
# Effect of Hazards for Both Smokers and Nonsmokers

Figure 2. Frequency of Lung Disease by Age and Exposure Status



# Significant Interaction Effect (Spillover) for Lung Disease

Figure 3. Predicted Probability of Ever Suffering a Condition by Smoking and Exposure to Hazardous Materials



## *Summary and Conclusions*

- **Increased interest in employer investment in health promotion driven by**
  - Increasing healthcare costs
  - Eroding distinction between nonoccupational and occupational illnesses and injuries
- **Literature finds effects of occupational and nonoccupational programs in isolation**
  - More scientific studies needed
  - Very few studies examine both
- **Our paper highlights the importance of understanding spillovers between personal health investments and workplace environment**
  - Should be a focus of research going forward



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