

most lethal. Injuries from handguns can have extreme clinical and substantial economic consequences, as well as social implications.

## HEALTH POLICY

### HEALTH POLICY—Burden Of Illness Studies

PHP4

#### BURDEN OF ILLNESS FOR EMPLOYEES WITH PAINFUL CONDITIONS

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**OBJECTIVES:** This study compares the treatment patterns, medical characteristics, and average annual direct (i.e., medical and drug use) and indirect (i.e., work-loss) costs for employees with Cancer, Back/Neck Disorders, Arthritis, and Neuropathic Pain (“painful conditions”) to those of employees from a random sample (“average employee”) in 2000. **METHODS:** An employer administrative claims database (covering several managed care health plans and approximately 600,000 insured lives from 1998–2001) was used to identify patients with ICD-9 codes for painful conditions. Of these: 3277; 18,657; 22,313; and 4436 employees between the ages of 18 and 65 were identified as having Cancer, Back/Neck Disorders, Arthritis and Neuropathic Pain, respectively. Direct costs are total medical and drug costs paid by the employer, and indirect costs are payments by the employer during work-loss days. **RESULTS:** Painful conditions lead to significant employer costs. In particular, among employees with painful conditions, direct costs are 1.5–4.1 times as high as those of the average employee (i.e., \$3961–\$11,089 compared to \$2686) depending on the painful condition. Indirect costs account for up to 35–45 percent of total employer costs. Indirect costs are 1.5–2.7 times as high as those of the average employee (i.e., \$3132–\$5870 compared to \$2167) depending on the painful condition. Employees with cancer have the highest costs among patients with painful conditions. Drug costs account for approximately 20 percent of direct costs, with opioids accounting for less than one percent of overall direct costs. **CONCLUSIONS:** Painful conditions are costly to employers, with indirect costs accounting for up to 45 percent of overall costs. However, prescription opioids used to treat painful conditions account for a small fraction of the costs.

PHP5

#### EVALUATING THE COSTS OF DISEASES IMPUTABLE TO STRESS AT WORK

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**OBJECTIVE:** The effects of work-related stress are generally judged to be detrimental to workers’ health and costly for society. The purpose of this study is to set out an evaluation of the costs of work-related stress for France. **METHODS:** Occupational stress is defined according to Karasek and Theorell’s model. Illnesses included in the study are cardiovascular diseases, depression, musculoskeletal diseases and lower back pain. The model resorts to the principle of attributable fractions, which is based on two parameters, 1) prevalence of exposure to occupational stress, (2) relative risk to develop an illness as a consequence of occupational stress. The valuation of these two parameters is based on a systematic review of scientific literature (epidemiological studies). Cost estimates include medical costs, cost of absence from work, loss of potential output because of

years of activity lost before retirement age and a valuation of years of life lost attributable to occupational stress (per capita GDP). Cost estimates are based on national statistical reports and reported in 2000 Euros (€). **RESULTS:** The sensitivity analysis shows that from 220,500 to nearly 335,000 persons (from 1% to 1.4% of working population) were affected by illnesses attributable to work-related stress and from 1600 to nearly 3000 people died as a result of their illness. As for the diseases considered here, work-related stress costs society from 830€ million to 1656€ million in France, which represents from 0.06% to 0.12% of GDP, and from 10.3% to 20.5% of the total spending of social security work injuries branch. **CONCLUSIONS:** These results reflect a certain proportion of total economic and human burden of occupational stress. The study underlines the necessity of convergent epidemiological studies capable of determining as reliably as possible the value of relative risk for the illnesses.

PHP6

#### THE SOCIOECONOMIC COST OF DISEASES DUE TO SMOKING IN KOREA

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**OBJECTIVE:** Among OECD countries, Korea is of the highest percentage of males aged 15 and over that are daily smokers. This study aims to estimate the socioeconomic cost of diseases due to smoking and to compare with that of all and smoking-related diseases in Korea. **METHODS:** This study employs a prevalence-based approach. First, we estimate both direct and indirect costs of smoking-related diseases, which are selected from reviewing existing studies. Direct costs include medical care expenditures, traffic costs, and caregiver’s costs. Indirect costs are estimated based on human capital theory. Next, we compute population attributable risks (PARs) caused by smoking by disease, age and sex. The socioeconomic costs of diseases due to smoking are obtained by multiplying the costs of smoking-related diseases by PARs. We report the estimates at 40 ~ 69 age group in USA Purchasing Power Parity Dollars. The major data sources are National Health Insurance Statistical Yearbook, Annual Report on the Cause of Death Statistics, Survey Report on Wage Structure, National Health and Nutrition Survey, the Korean Statistical Information System, and information such as a report from CDC in U.S.A. **RESULTS:** The estimated economic cost of diseases due to smoking in Korea in 2001 is 3.92 billion USA PPP\$(\$ hereafter) at 0% discount rate, which accounts for 13.8 % of the cost of all diseases and 42.8% of smoking-related diseases at aged 40 ~ 69. The costs of males and females are \$3.72 billion and 0\$.20 billion, respectively. The cost of malignant neoplasms caused by smoking is \$1.86 billion (42.3% of the cost of the diseases), cardiovascular disease, \$1.55 billion (41.0%); respiratory disease, \$0.51 billion (16.6%). **CONCLUSIONS:** The economic burden of diseases due to smoking is about 52.8% (9.5%) of that of smoking related diseases and 18.8% (2.3%) of all diseases in males (females).

PHP7

#### THE SOCIOECONOMIC COST OF DISEASES IN KOREA

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**OBJECTIVE:** Korea has been facing various public health problems such as increase in prevalence population ratio and rapid growth of health expenditures. The aim of the study is to estimate the annual socioeconomic cost of diseases in Korea. **METHODS:** We estimate both direct and indirect costs of diseases in Korea in 2001 using a prevalence-based approach.