



## Health Care and Human Services Policy Research and Consulting

### COST-OF-ILLNESS STUDIES

Cost-of-illness studies provide important insights for understanding the full implications of a disease to the individual, the family and the economy as a whole. They provide a key aspect of the investment decisions that will be made to mitigate illness-related costs. The Lewin Group's (Lewin) cost-of-illness team, consisting of health economists, statisticians and epidemiologists, has knowledge and experience with the methods and techniques for cost-of-illness estimation, and the data sources necessary to support the estimates. Below, we highlight several examples of our cost-of-illness studies.

#### OPIOID PRESCRIPTION AND OUTCOMES ANALYSIS

According to the CDC, more than 47,000 people died of drug overdoses in 2014 and opioid drugs were responsible for nearly two-thirds of the overdoses. Provider, patient and system factors likely all combine to create the current state of the opioid epidemic. For the MITRE Corporation and the Centers for Medicare and Medicaid Services (CMS), Lewin has been studying the current patterns of opioid use among adults in a large commercial claims dataset with linked medical and pharmacy claims. The analysis has four objectives: 1) to describe patterns of opioid prescribing among the full dataset population of insured adults, including the types of drugs used, the dosage and duration of use and the types of providers prescribing opioids; 2) to identify characteristics of opioid prescriptions or other demographic and health factors, including co-occurring conditions, that influence the likelihood of adverse outcomes and health care utilization related to opioid use; 3) to identify demographic characteristics, health outcomes and health care utilization associated with individuals who have opioid-related overdoses, including both those with and without opioid prescriptions; and 4) to examine the incidence of, demographic characteristics, health outcomes, health care utilization and expenditures of individuals' opioid use associated with low-acuity procedures. Results will be available to the public soon.

#### COST OF DIABETES AND GEOGRAPHIC VARIATION BY STATE

Since 2014, Lewin has been collaborating on a study for the Centers for Disease Control and Prevention (CDC) to estimate the cost of diabetes and geographic variation by state. Diabetes costs were estimated using data from the National Health Expenditure Accounts, public use surveys and medical claims. The cost estimates were then integrated into online toolkits, which will be available to the states, employers and payers. Using state-specific data and the population-attributable fraction method, we estimate the proportion of the state health expenditure that would not have incurred if not because of diabetes, by payer, types of service, population age group and gender. Results will be available to the public soon.

#### OBESITY, ALCOHOL MISUSE AND TOBACCO USE IN THE MILITARY HEALTH SYSTEM

In FY 2014, a Lewin study found that the Department of Defense (DoD) spent an estimated \$6.2 billion on medical care associated with tobacco use and exposure (\$1.7 billion), excess weight (\$3.1 billion), and alcohol overconsumption (\$1.3 billion). Additionally, the DoD incurs \$347 million per year in non-medical costs associated with these three behaviors due to absenteeism, reduced work performance, alcohol-related arrests and early separation from the military. The DoD used our findings on the economic impact of adverse health behaviors to develop the business case for population health initiatives. We also developed a micro-simulation model to quantify the lifetime costs and benefits of various health intervention programs. Several manuscripts are being peer-reviewed.

#### ABOUT US

The Lewin Group is a premier national health care and human services consulting firm with more than 45 years of experience finding answers and solving problems for leading organizations in the public, nonprofit and private sectors. We understand the industry and provide our clients with high-quality products and insightful support to help them maximize the delivery of programs and services that make a difference in the lives of their constituents.

#### SERVICE BENEFITS

We provide a variety of consulting services to help clients from both the public and private sectors to understand the economic impact of acute and chronic diseases and health promotion and disease management intervention strategies. Through our cost-of-illness, cost-benefit, and cost-effectiveness research and program evaluation, we provide insights to develop efficient and effective programs that meet organizations' policy objectives.

## MENTAL HEALTH, INCLUDING POST-TRAUMATIC STRESS DISORDER, IN VETERANS

In 2013, the Department of Veterans Affairs (VA) commissioned Lewin to study the economic impact of diabetes, mental illness and post-traumatic stress disorder (PTSD) on veterans. Nearly one in four veterans receiving care at VA centers has diabetes and approximately 300,000 veterans who have returned from Iraq and Afghanistan are currently suffering from PTSD or major depression; a total of more than 600,000 veterans are estimated to be affected by PTSD. Quantifying the total economic burden associated with each of these diseases, from the perspective of the VA and from society as a whole, improves our understanding of the important drivers of health resource use. It also assists with the development of policies and intervention programs that can reduce health care costs while raising productivity and quality of life.

## ECONOMIC BURDEN OF DIAGNOSED OR UNDIAGNOSED DIABETES, PREDIABETES AND GESTATIONAL DIABETES IN THE UNITED STATES.

In a January 2012 press conference held on Capitol Hill, the American Diabetes Association announced the findings of a study by The Lewin Group, which estimated the national economic burden of diabetes at \$245 billion in 2012. This economic burden consists of approximately \$176 billion in additional health care expenditures attributed to diabetes and \$69 billion in lost productivity from absenteeism, presenteeism, permanent disability and premature mortality. Leaders from the Congressional Diabetes Caucus and diabetes experts from the Centers for Disease Control and Prevention and the National Institutes of Health participated in announcing the study findings and discussing the implications. This estimate is an update of our 2007 study that estimated a total economic burden of \$174 billion in direct and indirect costs associated with diagnosed diabetes. (<http://care.diabetesjournals.org/content/early/2013/03/05/dc12-2625>). Later, Lewin estimated the economic burden of undiagnosed diabetes, prediabetes and gestational diabetes in 2012 for Novo Nordisk (<http://care.diabetesjournals.org/content/37/12/3172.full>).

The economic burden associated with diagnosed diabetes (all ages), and undiagnosed diabetes, gestational diabetes and prediabetes (adults) exceeded \$322 billion in 2012, consisting of \$244 billion in excess medical costs and \$78 billion in reduced productivity. Combined, this amounts to an economic burden exceeding \$1,000 for each American in 2012. This national estimate is 48% higher than the \$218 billion estimate for 2007. The burden per case averaged \$10,970 for diagnosed diabetes, \$5,800 for gestational diabetes, \$4,030 for undiagnosed diabetes and \$510 for prediabetes.

## AMYOTROPHIC LATERAL SCLEROSIS, MUSCULAR DYSTROPHY AND SPINAL MUSCULAR ATROPHY IN THE UNITED STATES

As part of its initiative to understand the economic burden of several neuromuscular diseases, the Muscular Dystrophy Association commissioned Lewin to estimate the economic impact on the United States in 2010 of amyotrophic lateral sclerosis, Duchenne muscular dystrophy and myotonic muscular dystrophy. Such severe diseases result in significant costs to families with one or more affected individual(s) through direct medical costs, through non-medical costs, such as modifications to houses and vehicles to accommodate the affected individual, and through loss of household income due to reduced employment of both the affected individual and of family caregivers. This is the first comprehensive study of this kind to be published in the United States. We estimated that the total national burden is in the range of \$1.1–\$1.4 billion, assuming low and high prevalence estimates, respectively (<http://www.ncbi.nlm.nih.gov/pubmed/23836444>).

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