FREQUENTLY ASKED QUESTIONS ABOUT STATE-LEVEL BURDEN OF CHRONIC DISEASE OUTCOMES

1. What's the purpose of the study?

This study aims to estimate the clinical and economic burden of the most common chronic diseases over the next 15 years, for all 50 states of U.S. plus the District of Columbia. You can go to www.fightchronicdisease.org for more information about your state.

2. What chronic diseases are included in the analysis?

The chronic diseases include diabetes, hypertension, high cholesterol, stroke, heart disease, pulmonary conditions (asthma and COPD), serious mental disorders (depression, bipolar disorder, Schizophrenia), cognitive disorders (dementia, Alzheimer's), osteoporosis and 17 types of cancers (breast, cervical, colorectal, endometrial, esophageal, gallbladder, kidney, leukemia, liver, multiple myeloma, non-Hodgkin's lymphoma, ovarian, pancreatic, prostate, stomach, and thyroid cancer).

3. What approach was used to get estimated results, specifically, how is the "burden of chronic disease" calculated?

The burden of chronic disease was estimated though a microsimulation model developed by IHS Life Sciences. It was calculated by taking the differences of expected outcomes between a "status-quo" scenario and each of the two optimistic scenarios.

4. What is a "microsimulation model"?

Microsimulation model simulates health outcomes for each individual based on his/her unique health profile. The simulation projects how the individual's health condition changes over time. These changes will determine health and non-health related costs for those individuals.

5. How was the model developed?

Each of the clinical and economic outcomes of the model was predicted by one or more mathematical equations, which come from published clinical trials and observational studies, as well as analysis of national survey data.

6. What is the modeled population/data source?

This population file was constructed using data from multiple public sources. To achieve the most accurate and complete clinical information for each individual, state level records from the American Community Survey (ACS, 2014) and Behavioral Risk Factor Surveillance System (BRFSS, 2013-2014) were merged to National Health and Nutrition Examination Survey (NHANES, 2005-2014) data.

7. What is included in the total cost of chronic disease? How has it been calculated?

The total cost of chronic disease includes direct medical expenditures (covering both short-term and long-term care), the value of employment productivity, e.g. absenteeism (value of missed work days) and presenteeism (value of reduced productivity at work). These medical and non-medical related costs were estimated mainly based on 2009–2013 Medical Expenditure Panel Survey (MEPS) which is nationally representative of the non-institutionalized population in the U.S. Some disease specific cost and long term care cost data were extracted from published literatures.

8. All cost outcomes are discounted to 2015 values. What does this mean and what is "discounting"?

Discounting is the process of determining the present value of a future payment. Money is worth more tomorrow than it would be today given its capacity to earn interest. For example, the model used 3% annual discount rate, which means having $97 this year is the same as owning $100 next year.

9. What is included in "behavioral changes" and "treatment advances" for the future projections?

The "behavioral changes" scenario assumes modest improvement in lifestyle and treatment, including reduced smoking rates, 5% body weight loss by overweight and obese individuals, 25% reduction of the number of heavy drinkers, 15% increase in treatment adherence, 15% increase in timely disease diagnosis rate, 10% insurance coverage expansion, and 10% reduction in medical cost growth rate.

In the "treatment advances" scenario, the benefits from treatment for many diseases are significantly improved due to medical advances. "Treatment advances" also includes substantial gains from people having better coverage for treatment and from taking medicines as recommended. In contrast, the "behavior changes" scenario assumes modest improvements in people's health behaviors and benefits from treatment.

10. For the number of people who could be saved each year, what do you mean by "prevention and treatment of chronic disease"?

"Prevention and treatment of chronic disease" means combined effect from both "behavioral changes" and "treatment advances" scenarios.

11. Why are the cost savings so much greater with "treatment advances" than with "behavior changes"?

In the "treatment advances" scenario, greater medical expense reduction comes from the significantly improved treatment efficacy due to breakthrough innovation and optimal changes in treatment coverage and drug adherence, while the "behavior changes" scenario assumes modest improvement on people's physical behavior and treatment effect.

12. Where can I learn more about the model?

A detailed model technical document, including model assumption and limitation, can be found online at https://www.ihs.com/products/healthcare-modeling.html.