INTRODUCTION

Even though insurance itself could provoke endogenous problems (i.e., moral hazard, adverse selection, agency problem and physician-induced demand) caused by players in healthcare system, health insurance has continued to develop in public roles. Health insurance faced the biggest change with the Affordable Care Act (ACA) in 2010 since the creation of the Great Society programs in the 1960s. The Affordable Care Act (ACA) has made a significant stride in improving access to affordable health insurance coverage for the working-adult population in the U.S. Unfortunately, little is known about the value of health insurance—whether health insurance coverage is cost-effective—in the current health system context. Using the most recent years of data from a nationally-representative population health survey, we evaluated cost-effectiveness of health insurance.

METHODS

We analyzed data from the nationally-representative sample of adults aged 25 to 64 from the Medical Expenditure Panel Surveys for years 2005 to 2016. SF-6D scores were used to estimate Quality Adjusted Life Years (QALY). Total annual health expenditures were included in cost calculation. We estimated regression models adjusting for a comprehensive set of social determinants of health, and then predicted QALY and cost. We used Markov model to calculate incremental cost-effectiveness ratio (ICER) by private and public insurance, compared to uninsured, from the health system perspective. We applied the 2016 mortality rates from CDC to determine the proportion of subjects dying, and used 3% discount rate for each year advancing in the Markov model.

RESULTS:

Compared to being uninsured, having private insurance beginning at 25-year-old through 64 result in an ICER of $69,511 per QALY, and the ICER for having public insurance would be $77,639 per QALY. However, compared to uninsured individuals, persons with public insurance incurred higher expenditure but reported lower QALY. More efforts are needed to improve the value of public insurance.

STUDY DATA AND RESULTS

We used the Medical Expenditure Panel Survey (MEPS) data from 2005 to 2016 among people aged 25 to 64. The MEPS-Household Component data captured nationally representative information on annual health expenditures, sociodemographic characteristics, health behaviors, perceived mental health status, and insurance type. The MEPS-Medical Conditions data employed the list of priority conditions and injuries to detect any chronic diseases.

To estimate cost-effectiveness of having health insurance by types, three processes were carried out. First, HRS scores were obtained from the SF-6D. The age, average proportion, female, and average Mental/Physical Health Composite Summary (MCS/PCS) Scores were used to predict SF-6D scores. The scores were adopted to generate Quality Adjusted Life Year (QALY)-compatible values between 0 and 1 for a cost-effectiveness analysis where 1 represents perfect health and 0 indicates a death. Regression analyses predicted the total annual health expenditures and SF-6D adjusting for a comprehensive set of social determinants of health. Finally, the Markov model was used to estimate the ICER associated with health insurance in average insured and uninsured 25-year-old through age 65.