

$$\begin{aligned}
h(t) = & \lambda_0(t) \exp\{ \text{Metformin} \cdot \beta_1 + \text{Acute liver} \cdot \beta_2 + \text{Chronic liver} \cdot \beta_3 \\
& + \text{Liver abscess} \cdot \beta_4 + \text{Liver other} \cdot \beta_5 + \text{Cardiovascular disease} \cdot \beta_6 \\
& + \text{Congestive heart failure} \cdot \beta_7 + \text{Cardiac valve disease} \cdot \beta_8 + \text{Serious mental illness} \cdot \beta_9 \\
& + \text{Arrhythmia} \cdot \beta_{10} + \text{Smoking} \cdot \beta_{11} + \text{Chronic obstructive pulmonary disease} \cdot \beta_{12} \\
& + \text{Race:black} \cdot \beta_{13} + \text{Race:other} \cdot \beta_{14} + \text{Gender} \cdot \beta_{15} \\
& + \text{HIV} \cdot \beta_{16} + \text{Hospitalized:VA only} \cdot \beta_{17} + \text{Hospitalized:Medicare only} \cdot \beta_{18} \\
& + \text{Hospitalized:Medicaid only} \cdot \beta_{19} + \text{Hospitalized past year:VA only} \cdot \beta_{20} \\
& + \text{Hospitalized past year:Medicare only} \cdot \beta_{21} \\
& + \text{Hospitalized past year:Medicaid only} \cdot \beta_{22} + \text{Parkinsons disease} \cdot \beta_{23} \\
& + \text{Nursing home} \cdot \beta_{24} + \text{Glucocorticoids} \cdot \beta_{25} + \text{Antipsychotic} \cdot \beta_{26} \\
& + \text{Antiarrhythmic} \cdot \beta_{27} \\
& + \text{Calcium channel blockers} \cdot \beta_{28} + \text{Beta blockers} \cdot \beta_{29} + \text{Ace inhibitor} \cdot \beta_{30} \\
& + \text{Angiotensin receptor blockers} \cdot \beta_{31} + \text{Thiazide diuretics} \cdot \beta_{32} + \text{Loop diuretics} \cdot \beta_{33} \\
& + \text{Anticoagulants} \cdot \beta_{34} + \text{Nonselective alpha blockers} \cdot \beta_{35} + \text{Other anti-hypertensives} \cdot \beta_{36} \\
& + \text{Statin} \cdot \beta_{37} + \text{Nitrates} \cdot \beta_{38} + \text{Aspirin} \cdot \beta_{39} \\
& + \text{Medicare use in past year} \cdot \beta_{40} + \text{Medicaid use in past year} \cdot \beta_{41} \\
& + \text{Proteinuria:checked but no result returned} \cdot \beta_{42} \\
& + \text{Proteinuria:-} \cdot \beta_{43} + \text{Proteinuria:trace} \cdot \beta_{44} + \text{Proteinuria:1+} \cdot \beta_{45} \\
& + \text{Proteinuria:2+} \cdot \beta_{46} + \text{Proteinuria:3+} \cdot \beta_{47} + \text{Proteinuria:4+} \cdot \beta_{48} \\
& + \text{rcs (HbA1c,3)} \cdot \beta_{49} + \text{rcs (Glomerular filtration rate,3)} \cdot \beta_{50} \\
& + \text{rcs (Systolic blood pressure,3)} \cdot \beta_{51} + \text{rcs (Diastolic blood pressure,3)} \cdot \beta_{52} \\
& + \text{rcs (Body mass index,3)} \cdot \beta_{53} + \text{rcs (Low-density lipoprotein,3)} \cdot \beta_{54} \\
& + \text{rcs (age,3)} \cdot \beta_{55} + \text{rcs (Number of unique medication,3)} \cdot \beta_{56} \\
& + \text{rcs (Outpatient visits in past year,3)} \cdot \beta_{57} + \text{rcs (Cohort entry date,3)} \cdot \beta_{58} \\
& + \text{HbA1c missing} \cdot \beta_{59} + \text{LDL missing} \cdot \beta_{60} + \text{Glomerular filtration rate missing} \cdot \beta_{61} \\
& + \text{Systolic blood pressure missing} \cdot \beta_{62} + \text{BMI missing} \cdot \beta_{63} + \text{Race missing} \cdot \beta_{64} \}
\end{aligned}$$

\*To ensure model stability for the breast cancer analysis, acute liver, chronic liver, liver abscess, liver other, congestive heart failure, cardiovascular disease, cardiac valve disease, arrhythmia, serious mental illness, smoking, race, HIV, hospitalized:VA, hospitalized:Medicare, hospitalized:Medicaid, hospitalized past year:VA, hospitalized past year:Medicare, hospitalized past year:Medicaid, oral glucocorticoids, Parkinson's disease, nursing home, Medicare encounters in last year, Medicaid encounters in last year, proteinuria, gender, HbA1c missing, LDL missing, glomerular filtration rate missing, blood pressure missing, BMI missing, and race missing were excluded.