

**Table S3.** Definition of index date and target cohort of the included studies

Study	Year	Index date	Target cohort
Hripcsak et al. [9]	2016	Time of first exposure to one of the medications	Had at least one exposure to an antihyperglycemic, antihypertensive, or antidepressant medication and at least one diagnosis code for type 2 diabetes mellitus, hypertension, or depression at any time in their record Had no excluded diagnoses (Pregnancy observations, type 1 diabetes mellitus, bipolar I disorder, schizophrenia)
Zhang et al. [21]	2018	First exposure to medication	Had at least 6 months of history in the database before the index date Had at least 1 year of continuous treatment after the index date, with some medication targeted to the disease (type 2 diabetes, hypertension, depression)
Chen et al. [22]	2020	Date of first treatment for the chronic disease	A diagnosis of cancer and of the chronic disease (hypertension, type 2 diabetes mellitus, depression) on or before the first treatment Persistent treatment after initiation of the first treatment, defined as at least one exposure to treatment of the chronic disease during the 121-day to 240-day and the 241-day to 365-day periods post index
Kern et al. [23]	2020	The first observed medical claim with a diagnosis of depression	Newly diagnosed depression patients Continuous enrollment in the database at least 1 year prior to and 3 years following the index date Excluded if they had evidence of treatment for depression – with an antidepressant or another treatment class of interest – more than 30 days prior to index
Kern et al. [24]	2020	The first observed medical claim with a diagnosis of multiple sclerosis (MS)	Had at least 365 days of continuous enrollment prior to and following their first diagnosis of MS, with no evidence of a prior treatment with a disease modifying therapies
Kim et al. [25]	2020	Time of first exposure to anti-seizure medications (ASM) for the first time	Pediatric patients with epilepsy who had at least 2 years of continuous observation Persistent treatment following initiation: at least one prescription of an ASM exposure between 121 and 240 days, 241 and 360 days, 361 and 480 days, 481 and 600 days, and 601 and 730 days after index date
Han et al. [26]	2021	Date of diagnosis with chronic kidney disease (CKD)	Initially diagnosed as CKD with age greater than or equal to 20 years
Jeon et al. [27]	2021	Dispense date of the index drug (a constituent drug that can be used to identify the first day of treatment)	Had an episode of chemotherapy 1) patients with lung, breast, and colorectal cancer from two EHR databases (AUSOM database, KDH database) 2) patients with COVID-19 and any malignant neoplasm disease from the HIRA COVID-19 dataset
Lee et al. [28]	2021	Date of diagnosis with type 2 diabetes mellitus	Adult patients aged $\geq 18$ years with type 2 diabetes mellitus (DM) Meeting at least one of the following criteria: glycosylated hemoglobin (HbA1c) $\geq 6.5\%$ ; fasting serum glucose $\geq 126$ mg/dL; anti-diabetic drugs prescription more than once Patients with type 1 DM or gestational DM were excluded

Sathappan et al. [29]	2021	Date of diagnosis with type 2 diabetes mellitus	Type 2 diabetes mellitus patients having 1 year of observation period and 3 years of following period Occurrence of drug records anytime in patient's records after index date
Byun et al. [30]	2022	Time of first diagnosis as Alzheimer's dementia (AD)	AD aged over 60 years New user of anti-dementia medication within 6 months from diagnosis exclusion: history of vascular dementia during observation period (at least 6 months before and 18 months after index date)
Chung et al. [31]	2022	First date of prescription for anti-hypertension (HTN) medication with $\geq 365$ days of prior clinical history	Eligible subjects were those who had been diagnosed with HTN and received $\geq 1$ anti-HTN medications excluded subjects Had not been continuously treated with anti-HTN medications Younger than 18 years old A medical history of major surgery, pregnancy, or a human chorionic gonadotropin $>5$ mIU/mL Blood pressure measurements were unavailable before the index date
Markus et al. [10]	2022	First diagnosis of the respective disease	Type II diabetes mellitus: adults with condition occurrence of diabetes mellitus AND no type I diabetes Hypertension: adults with condition occurrence of hypertensive disorder Depression: adults with condition occurrence of depressive disorder AND no schizophrenia, no bipolar disorder
Mun et al. [32]	2022	Time of the first treatment with one of the intravitreal drugs	Included patients with at least one diagnosis code corresponding to retinal vein occlusion within 180 days post-index period Excluded patients with other retinal disorders
Seo et al. [33]	2022	Time of rapid urease test or Helicobacter pylori antibody test	Over the age of 18 who underwent rapid urease test or Helicobacter pylori antibody test Prescribed with any of clarithromycin, amoxicillin, metronidazole, bismuth, tetracycline, or levofloxacin for 7-14 days
Spotnitz et al. [34]	2022	Date of first exposure to an antiseizure medication (ASM)	Who fulfilled one of the following 3 criteria: 1) a first occurrence of an epilepsy diagnosis during an inpatient hospitalization or emergency department visit 2) at least 2 outpatient seizure or epilepsy diagnoses within 5 years that are at least 30 days apart 3) at least 1 epilepsy or seizure diagnosis that first occurred within 2 years antecedent to a first ASM exposure At least 1 year of continuous treatment after the index date with an ASM
Vora et al. [35]	2022	Date of the first oral anticoagulants (OAC) prescription	Aged at least 18 years with a diagnosis of atrial fibrillation and a first prescription or dispensing for oral anticoagulants either vitamin K antagonist or direct oral anticoagulant Required to have a minimum of 1 year of observation before the start of the study with no prescription for any OAC during this time
Bui et al. [36]	2023	Date of the first exposure to three anti-VEGF drugs or two procedures	The diagnosis for myopic choroidal neovascularization (mCNV) The diagnosis for CNV along with high myopia defined by the diagnosis of high myopia, degenerative myopia, or pathologic myopia or by the measurement of refractive errors between 365 days before and after the index date Excluded all patients who had any other conditions which might require anti-VEGF drugs