

# TRUE NEW USER MACRO

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# User Manual

## Overview

Electronic health record (EHR) data are ubiquitous and increasingly used in comparative effectiveness research. However, EHR-based databases may often be missing important patient information due to discontinuity of care. Accordingly, developing standard pharmacoepidemiologic cohorts, for example new user cohorts, from EHR data is challenging. The “true new user macro” can be used to identify true new users of prescription medications, thus minimizing exposure misclassification, and reducing bias.

The “true new user macro” is written using SAS programming language and is optimized to analyze OneFlorida data linked with Medicare or Medicaid administrative claims data. The main output of this program is a dataset with patient id’s of patients who are actually true new users of a therapeutic drug class (example antihypertensives) or individual drug class (example calcium channel blockers). This macro is easy, straightforward, and can be used to identify true new users for every drug class. The most efficient way to use the macro is to customize the macro based on the drugs or drug classes of interest and run the macro in batch mode. Macro 1 can be used to identify new users of a therapeutic drug class (example antihypertensives), whereas Macro 2 can be used identify new users of an individual drug class (example calcium channel blockers).

## Terminology

**Prescription file in OneFlorida:** File in which each record represents a prescription medication ordered by the physician.

**Dispensing file in OneFlorida:** File in which each record represents an outpatient prescription dispensing.

**RxNorm Concept Unique Identifier (RxCUI):** The RxCUI is a unique identifier assigned to an individual drug entity and used to relate to all things associated with that drug. Each unique RxCUI can represent multiple NDCs of the same drug product. RxCUI's for every drug product can be obtained from RxNorm, an initiative created by the National Library of Medicine.

## Steps to run the true new user macro

### Macro 1: New users of antihypertensives

**Step 1.** Create a SAS dataset with RXCUIs and/or NDCs of antihypertensives.

**Step 2.** In order to identify true new users, we need to first identify patients in OneFlorida having linked data with Medicare or Medicaid administrative claims data.

**Step 3A.** From the OneFlorida prescription file, identify records having RXCUIs for antihypertensives.

**Step 3B.** Flag the index date (i.e., the date of first prescription) of antihypertensives.

**Step 4.** Require patients to have at least 365 days of lookback period (i.e., at least 365 days of overlapping EHR and Medicaid or Medicare (but not dual) enrollment). **Note:** (1) We used the Magik Macro available in the POP Library to create periods of overlapping EHR and Medicaid or Medicare enrollment; (2) You can change the baseline period from X (number of your choice) days based on your study design.

**Step 5.** Check if they have any dispensing of antihypertensives in the lookback period using Medicaid or Medicare dispensing files. Patients who do not have any dispensing of any antihypertensives in the lookback period will be called “true new users”.

### Understanding Macro 1

%newuser (X)

Where X=antihypertensives, antidepressants, antidiabetics etc.

## **Macro 2: New users of individual antihypertensive drug classes**

**Step 1.** Create a SAS dataset with RXCUIs and/or NDCs of all antihypertensives.

**Step 2.** In order to identify true new users, we need to identify patients in OneFlorida having linked data with Medicare or Medicaid administrative claims data.

**Step 3A.** From the OneFlorida prescription file, identify records having RXCUIs for antihypertensives.

**Step 3B.** Scan records having calcium channel blockers as drug class.

- The unique scan macro automatically scans records with calcium channel blockers as the drug class.

**Step 4.** Flag the index date (i.e., the date of first prescription) of calcium channel blockers.

**Step 5.** Require 365 days of overlapping EHR and Medicaid or Medicare (but not dual) enrollment (i.e., lookback period). **Note:** (1) We used the Magik Macro available in the POP Library to create periods of overlapping EHR and Medicaid or Medicare enrollment; (2) You can change the baseline period from 365 days to X (number of your choice) based on your study design.

**Step 6.** Check if they have any dispensing of calcium channel blockers in the lookback period using Medicaid or Medicare dispensing files.

- The unique scan macro automatically scans records with calcium channel blockers as the drug class only.

Patients who do not have any dispensing of any calcium channel blockers in the lookback period will be called “true new users” of calcium channel blockers.

## Understanding Macro 2

%newuser (drug,class)

Where drug=antihypertensives, antidepressants, antidiabetics etc.

class=calcium, channel blockers, selective serotonin reuptake inhibitors, SGLT2 inhibitors

**General note for Macro 1 and 2:** In EHR prescribing file, RXCUIs should be used to identify drugs of interest, whereas, in the Medicare/Medicaid outpatient dispensing files, NDCs should be used to identify drugs of interest.

## **Agreement Statement**

I agree that this program can be made available to collaborators and if deemed of interest to others, for public download at the CoDES website.