

AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

AHRQ

MEPS-HC
Prescribed Medicines (PMED) File

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Household PMED Data Collection

- Respondents encouraged to use memory aids
  - Pill bottles/containers
  - Pharmacy receipts, patient portal, or other records
- Respondents first prompted about any medicines prescribed during reported medical visits
  - For hospital stays, respondents are asked to report only drugs prescribed on discharge
  - Respondents are asked to report only prescribed medicines that they filled

Household PMED Data Collection

- After asking about medicines prescribed during medical events, a stand-alone prescribed medicines section asks respondents about any other prescribed medicines obtained at any pharmacy:
  - Any new prescription medicines or refills
  - Any prescribed medicines taken only as needed
  - Any diabetic equipment or supplies

Pharmacy Data Collection

- Requires written authorization from sample member to request their pharmacy records
- Asks pharmacies for “patient profile” or information on patient’s drug fills
- Used primarily for expenditure information and detailed drug characteristics (form, strength, quantity, etc.)
- Used as imputation donor pool for those without PC data and those with incomplete PC data

Elements Collected: HC and PC

Household Component	Pharmacy Component
• Drug name, strength, and form • Number of fills in round • Associated condition(s) • When first used • Pharmacy information • Authorization to contact pharmacies	• Drug name • Detailed drug characteristics (strength, form, days supplied, etc.) • National Drug Code (NDC) • Payers • Amount paid by each payer (including out of pocket)

Editing HC and PC Data

- The HC and PC data do not share a common identifier
  - A Generic Product Indicator (GPI) is assigned to both HC and PC records to facilitate matching
- Before HC and PC data are combined, editing and imputation are done separately on each file
  - Review outliers – flag and impute when implausible
  - Price benchmarking for PC data
  - Impute missing data elements in each file

Combining HC and PC Data

- Iterative and progressively less restrictive matching process
  - Matching is done at the person-round-drug level
  - For those with PC data, attempts to match within the person's own PC data are attempted first
  - For those with no or incomplete PC data, a donor PC record that matches as closely as possible is imputed
  - Inexact matches are permitted when exact match attempts fail
- Utilization (fill records) are based only on household-reported data
  - MEPS does not create new PMED records based on PC data
- Post-match editing is performed on the combined data

PMED PUF

- The PMED PUF is unfolded to the acquisition (fill or refill) level
  - Each record represents a unique fill or refill of a prescribed medicine for an individual in the data year
  - Not everyone on the FYC will have PMED records
  - If people have multiple drug fills, they will have multiple PMED records
- Rarely used drugs are masked (to -15) to protect respondent confidentiality
  - In these cases, Multum therapeutic class information replaces the medication name in RXDRGNAM
- Can be linked to:
  - FYC (person-level) PUF by DUPERSID
  - Medical Conditions PUF by CLNK PUF

PMED PUF Structure

- DUPERSID – Unique person identifier
- RXRECIDX – Unique identifier for each record (fill) on the file
- DRUGIDX – Unique drug identifier for a given person
- LINKIDX – Unique person-round-drug identifier for linking to other files

DUPERSID	DRUGIDX	RXRECIDX	PURC HRD	LINKIDX	RXDRGNAM
2510001101	251000110100**1**	25100011010011030**01**	1	25100011010011**03**	ATORVASTATIN
2510001101	251000110100**1**	25100011010011030**02**	1	25100011010011**03**	ATORVASTATIN
2510001101	251000110100**1**	25100011010012030**03**	2	25100011010012**03**	ATORVASTATIN
2510001101	251000110100**2**	25100011010022030**04**	2	25100011010022**03**	AMOXICILLIN
1 person	2 drugs	4 fills	3 LINKIDXs		2 drugs

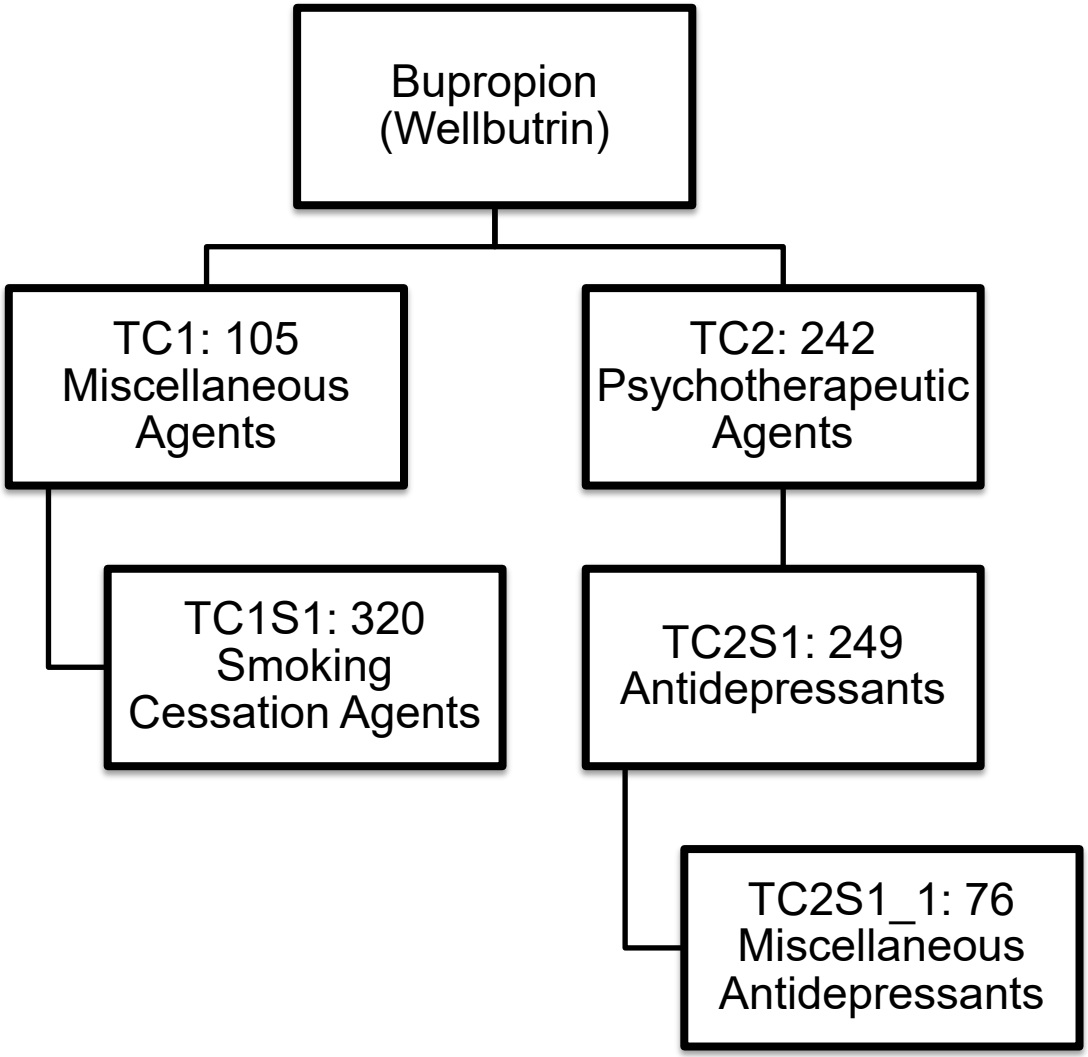
Additional PMED File Contents

- Medication name
  - RXDRGNAM: standardized generic drug name
  - RXNAME: pharmacy-reported drug name
- National Drug Code (NDC)
- Total payment
- Amount paid by payer type
- Pharmacy types
- Quantity dispensed
- Days supplied
- Strength
- Form
- Purchase round
- Flag for diabetic equipment or supplies
- Month and year person started taking drug
- Whether person has PC data
- Imputation information
- Multum therapeutic classes and pregnancy category
- Person-level weight and design variables

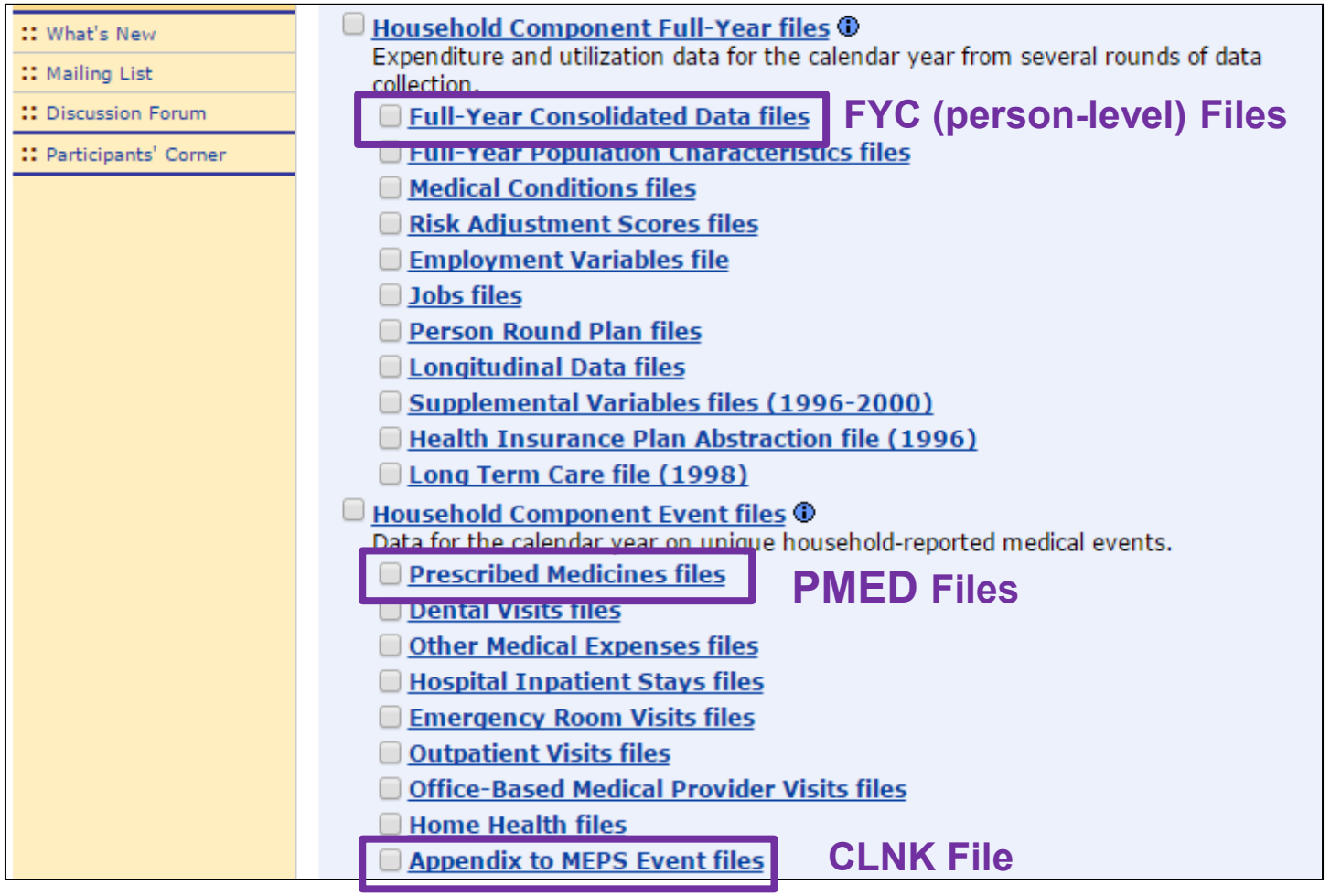
Multum Therapeutic Classes

- Classifies drugs into therapeutic classes, subclasses, and sub-sub-classes
  - TCn - assigns a drug to one or more therapeutic/chemical categories
    - Can have up to three therapeutic classes per drug
  - TCnSn - assigns one or more therapeutic subclasses to a given therapeutic class
  - TCnSn_n - assigns one or more sub-sub-classes to a given therapeutic subclass
- Classification scheme can change over time
  - Check documentation for each year
- For 1996-2013, use the Multum Lexicon Addendum Files

Example: Multum Therapeutic Classes



Finding PMED and Linking Files



Linking PMEDs to Medical Conditions

PMED File

DUPERSID	DRUGIDX	PURCHRD	LINKIDX	RXRECIDX
2510001101	2510001101001	1	2510001101001103	25100011010011030 01
2510001101	2510001101001	1	2510001101001103	25100011010011030 02
2510001101	2510001101001	2	2510001101001203	25100011010012030 03

CLNK File

DUPERSID	CONDIDX	EVNTIDX	EVENT YPE
2510001101	2510001101003	2510001101001103	8
2510001101	2510001101003	2510001101001203	8

Medical Conditions File

DUPERSID	CONDIDX	ICD10CDX
2510001101	2510001101003	Z13

- **EVENTYPE = 8 on CLNK file indicates PMED event**
- **Merge LINKIDX from the PMED file to EVNTIDX on the CLNK file**

Linking: Examples

- Analyze expenditures for prescribed medicines used to treat hypertension
  - Use CLNK PUF to link PMED PUF to conditions PUF
- Analyze antidepressant use by gender
  - Link FYC and PMED PUFs by DUPERSID

Caveats and Limitations

- Potential underreporting of drugs
- MEPS only measures prescribed medicines obtained in an outpatient setting (retail and mail-order pharmacies)
  - ► It does not measure drugs administered in a medical office, clinic, or inpatient setting
- MEPS does not measure if drugs were actually taken (just those that were filled)
- Fills are not standardized for days supplied

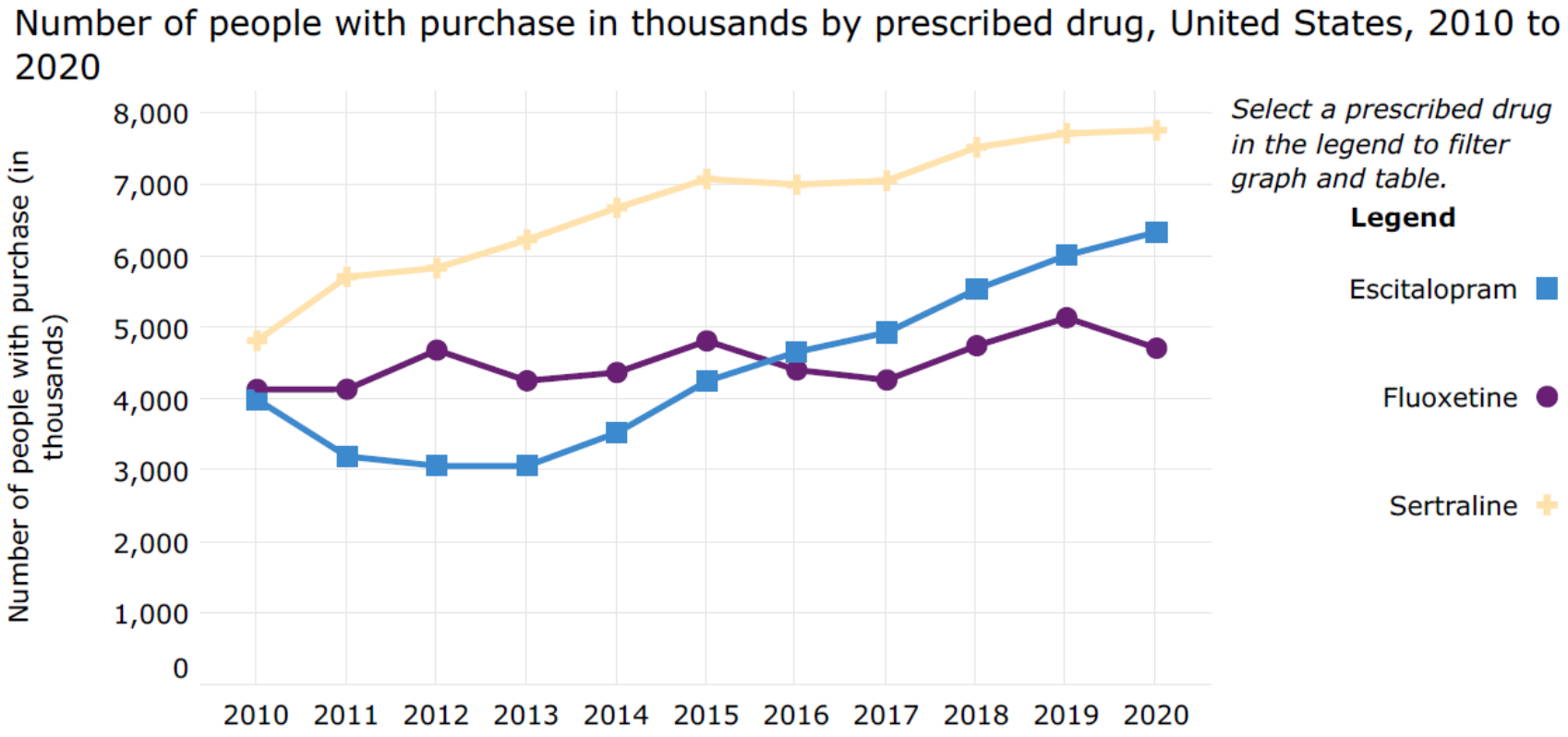
Caveats and Limitations

- MEPS is not well suited to studying prescribers
- PMED expenditures do not include rebates between manufacturers and pharmacy benefit managers (PBMs) or government programs
- Pharmacy type variables are those reportedly used by the person in the purchase round and any prior rounds
  - Not unique to a specific drug or fill
  - Definitions of pharmacy types are fuzzy to respondents

Interpreting Trends

- Be cautious interpreting year-over-year changes
  - Policy changes
  - Changes in PMED data processing procedures (especially 2007-2009 and 2017)
  - MEPS design changes (especially 2013 and 2018)
- Read the PMED documentation for each year being analyzed
- Consider techniques to stabilize or smooth trends

Example


Number of people with purchase in thousands by prescribed drug, United States, 2010 to 2020
Number of people with purchase (in thousands)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Select a prescribed drug in the legend to filter graph and table.
Legend
Escitalopram
Fluoxetine
Sertraline

Resources

- Annual public use file documentation
- Outpatient Prescription Drugs: Data Collection and Editing in the 2011 Medical Expenditure Panel Survey
- MEPS-HC online data tools
- MEPS GitHub (includes example code in R, SAS, and Stata)
- The Impacts of the COVID-19 Pandemic on the Medical Expenditure Panel Survey
- Pre-COVID-19 Retail Use and Expenditures for Drugs That Were Subsequently Used to Treat COVID-19

Thank you!

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