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Evaluating Alternative Benchmarks to Improve Identification of Outlier Drug Prices for MEPS Prescribed Medicines Data Editing

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Disclaimer

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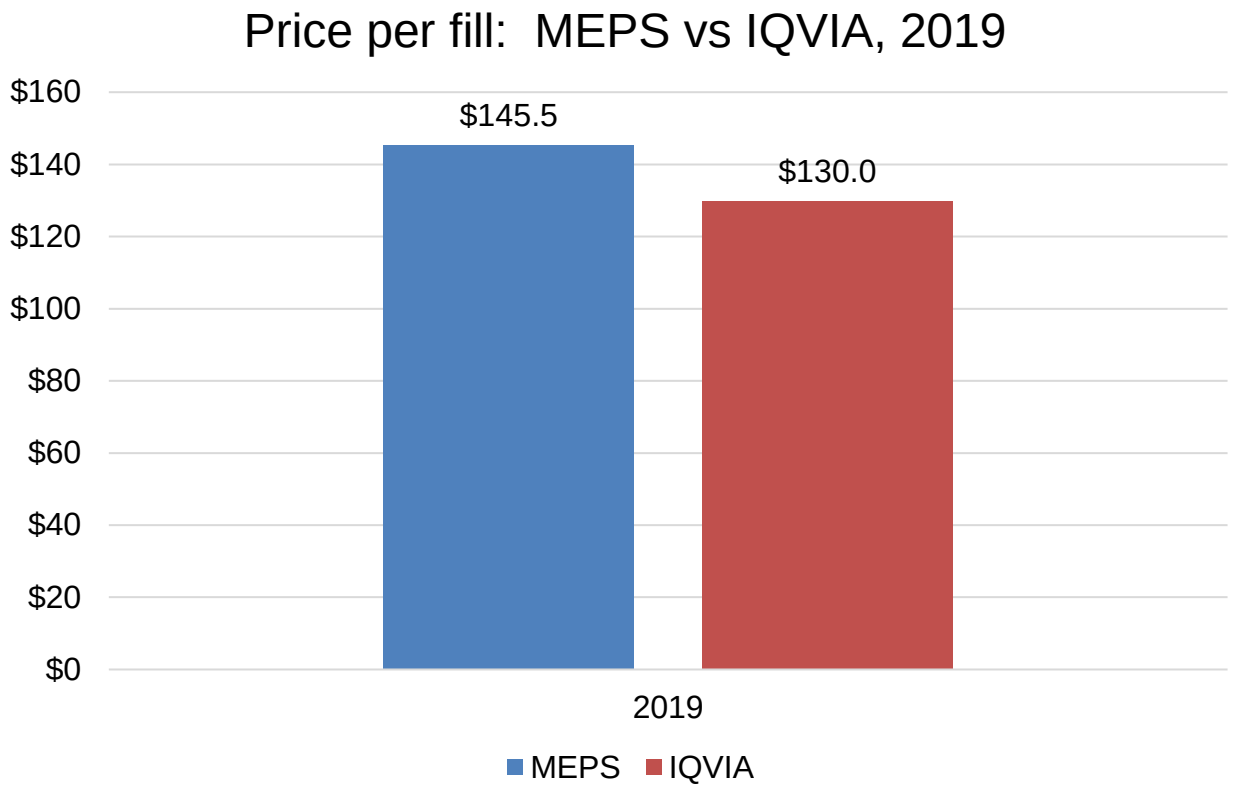
MEPS Prescribed Medicines Data

- Household respondents report
  - Drug names
  - Number of fills and refills
  - Pharmacies visited
- Pharmacy follow-back survey collects
  - National Drug Codes (NDCs)
  - Quantity dispensed
  - Days supplied
  - **Payments and sources of payments**

Why Edit Price in MEPS



- Average prices in the MEPS and IQVIA were fairly close from 2004 through 2011
- A growing divergence between price per fill in the MEPS and IQVIA since 2012. E.g., The average price across all fills was 12% higher in the MEPS than that in IQVIA in 2019

We report IQVIA price per fill estimates excluding those fills in long-term care setting

Research Questions

- This study will evaluate potential improvements to how prescription drug prices are edited in the MEPS Pharmacy Component data
  - Identifying **outliers in the retail prices** reported by pharmacy providers
- The goal of editing and imputation is to ensure
  - The distribution of unit prices in post-edit MEPS data is reasonably similar to other sources, like the IBM MarketScan claims data for various types of drugs
    - Single source brand name drugs, originators, and generics

Types of Drugs

- Price editing rules vary between brand and generic drugs because prices vary
  - Brand name drugs:
    - **Single source**: have patent protection
    - **Originators**: lost patent protection and face generic competition
  - **Generics**:
    - Enter the market when brand name drugs lose patent protection and are chemically equivalent to originators

Imputing Missing Payment Data

- MEPS Household Component (HC): Use
- MEPS Pharmacy Component (PC): Payments
  - Identify fills missing payment data and price outliers. In 2019,
    - 56% complete payment data
    - 28% OOP payments but **missing** third party payments ("partial payment data")
    - 16% **no** payment data
  - Imputing payments from donor fills with complete data to fills missing payment data and those with outlier prices

Benchmarks to Identify Outlier Prices

- Current editing : average wholesale **unit** price (**AWUP**)
  - Drug list price per unit from wholesalers to retail pharmacies
  - A growing divergence between AWUP and retail unit prices
- Alternative benchmark prices
  - National Average Drug Acquisition Cost (**NADAC**) per unit
    - Average collected in a survey of pharmacies, excluding dispensing fee, likely lower than average retail prices
    - Not available for those dispensed by specialty pharmacies
  - Wholesale acquisition **unit** cost (**WAUC**)
    - Drug list price per unit for drugs sold by manufacturer to wholesalers
    - Appears more strongly linked to retail unit price than AWUP

Price Ratios

- To account for diversity of prices across products, we assess the plausibility of within product variation using price ratios. E.g.,
  - Retail Unit Price (RUP) divided by AWUP for current editing
  - **PRATION** (a ratio calculated as RUP divided by NADAC per unit; PRATIOW (RUP divided by WAUC) for the new editing
- In the MEPS PC
  - 93% of fills with NADAC per unit available
  - 98% of fills with WAUC available
  - 100% of fills with AWUP available

AWUP: average wholesale unit price; NADAC: national average drug acquisition cost; WAUC: wholesale acquisition unit cost

Current Price Editing Rules

- Developed based on validation study with 2006/2007 Medicare Part D data and benchmarking to 2007 MarketScan data
- Identify price outliers in RUP relative to AWUP
  - The threshold for upper outliers: RUP ≥ 10 times AWUP
  - The thresholds for lower outliers vary with
    - Type of drug (single source, originators, generics)
    - Whether discounts or coupons reported for the fill
    - Whether the fill was for Medicare Part D and in the donut hole
    - **Completeness of the payment data**
      - Fills with third party payments>0 are rarely flagged as lower outliers
      - A small fraction of fills with partial payment data flagged as complete, most are imputed a third party payment
      - Impute prices for fills with outlier prices from donor fills not flagged as outliers

RUP: retail unit price; AWUP: average wholesale unit price

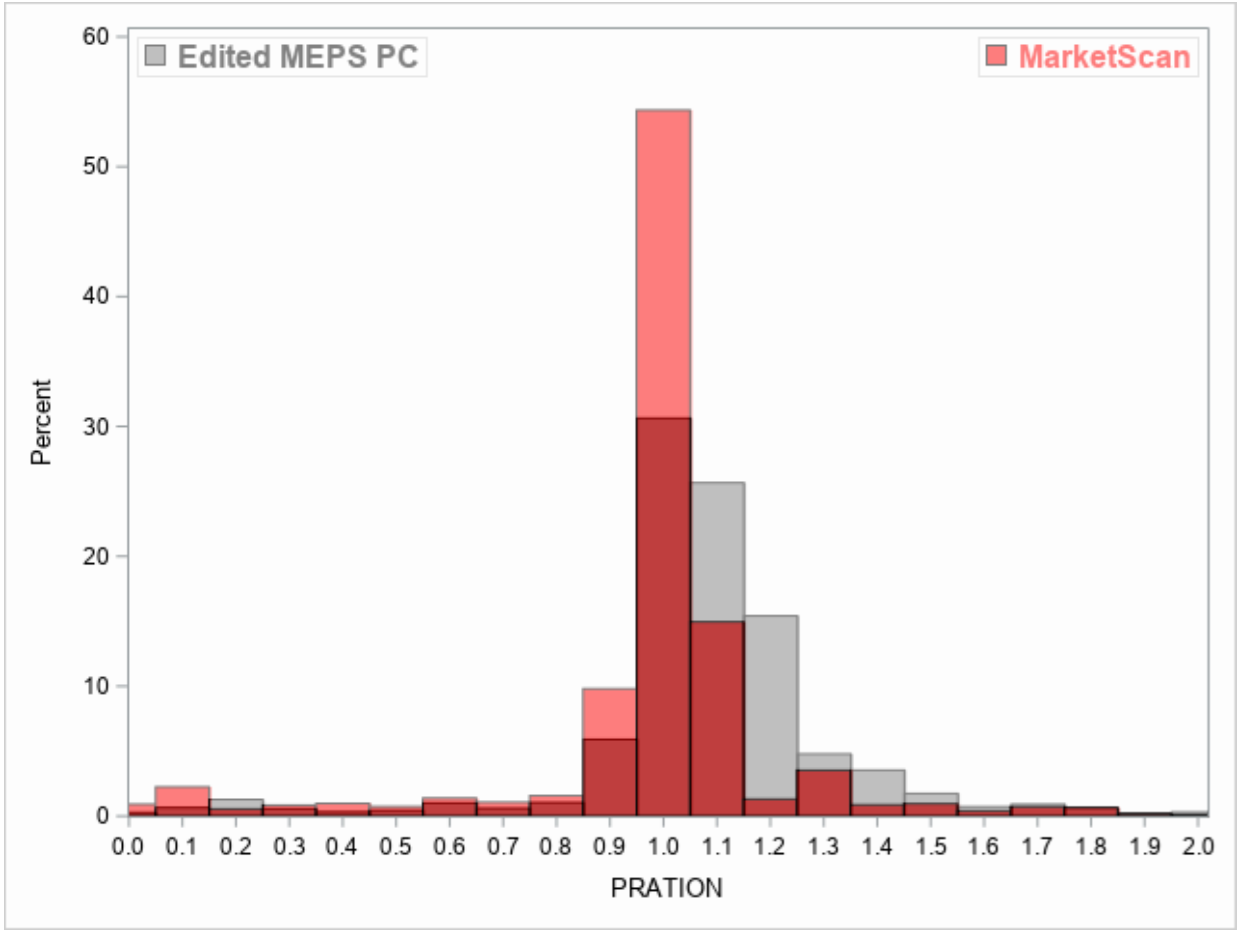
IBM MarketScan Claims Data

- 2019 MarketScan Commercial Claims data
  - Randomly selected a 10% sample of the retail or mail-order prescription claims
  - Performed data reconciliation to deal with claim reversals, reentries or incomplete claims; Rolled up claims data to the person-service date-NDC event level: ~16.3 million drug fills
  - Retail drug price: allowed amount
    - Sum of payments from insurers and out-of-pocket payments from enrollees

NDC: National Drug Code

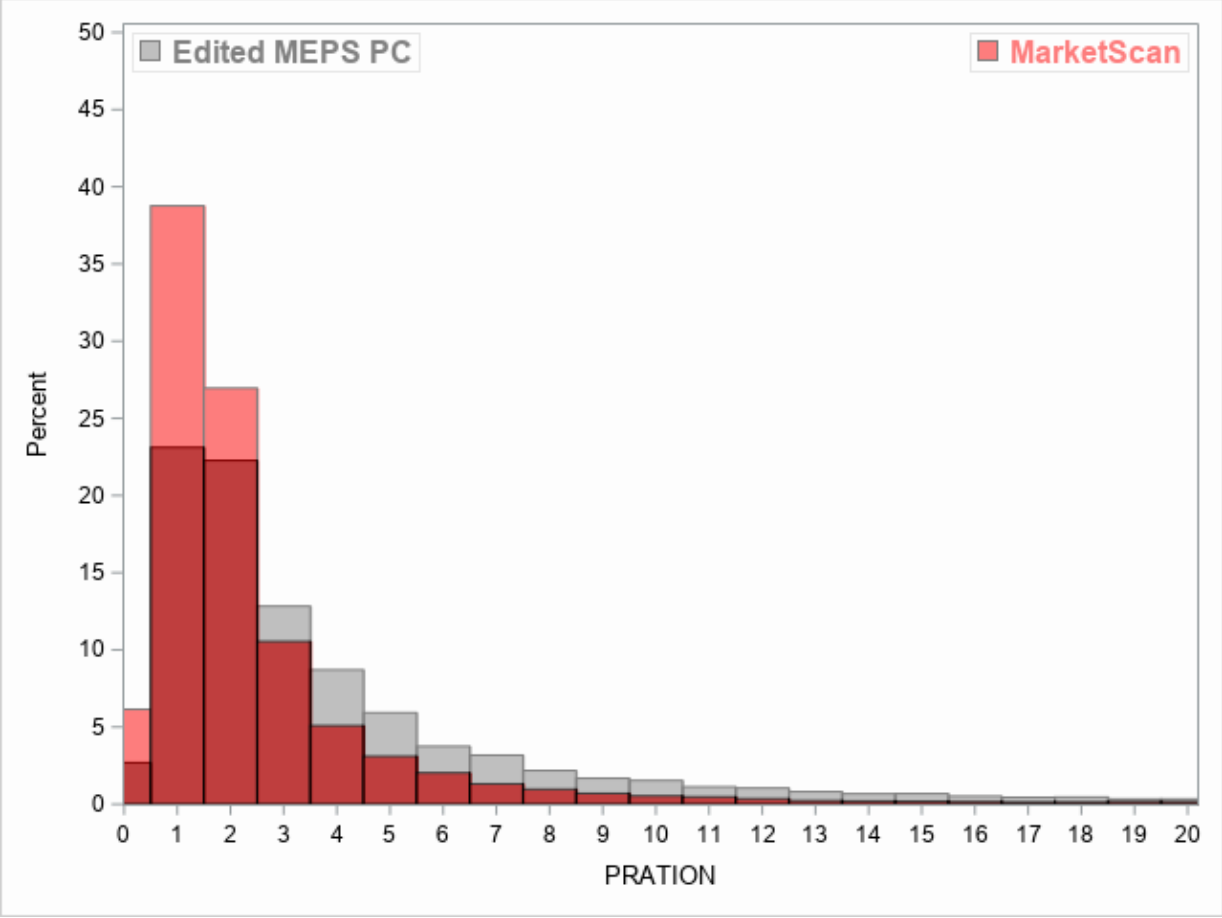
Findings

PRATION Distributions in Edited MEPS PC and MarketScan Fills for Single Source Brand Name Drugs



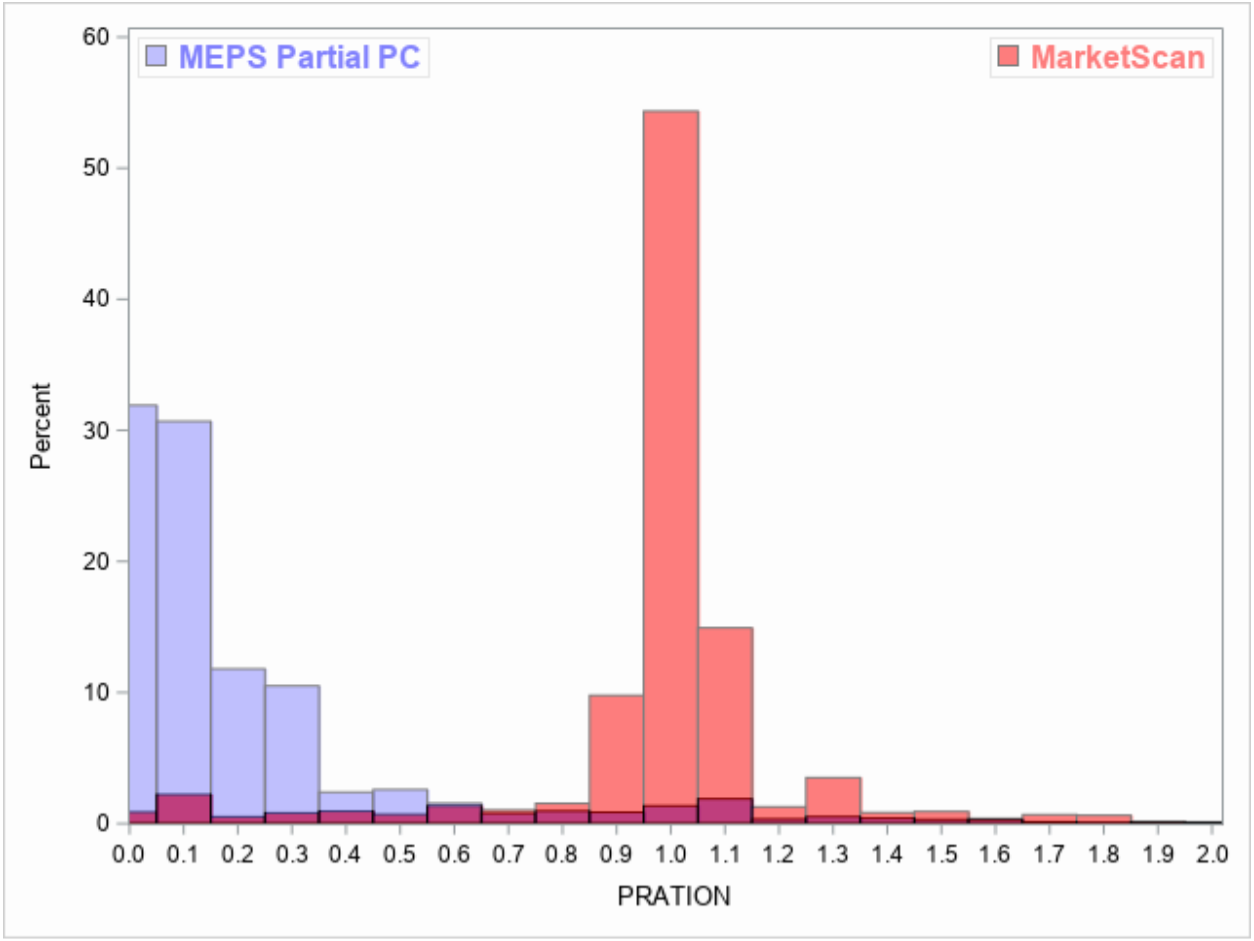
Edited MEPS PC: post-edit Medical Expenditure Panel Survey Pharmacy Component data;
PRATION: a ratio calculated as Retail Unit Price (RUP) divided by National Average Drug Acquisition Cost (NADAC);
Note: 2% and 3% of single source drug fills have a PRATION>2.0 in MarketScan and in edited MEPS PC data, respectively

PRATION Distributions in Edited MEPS PC and MarketScan Fills for Generics



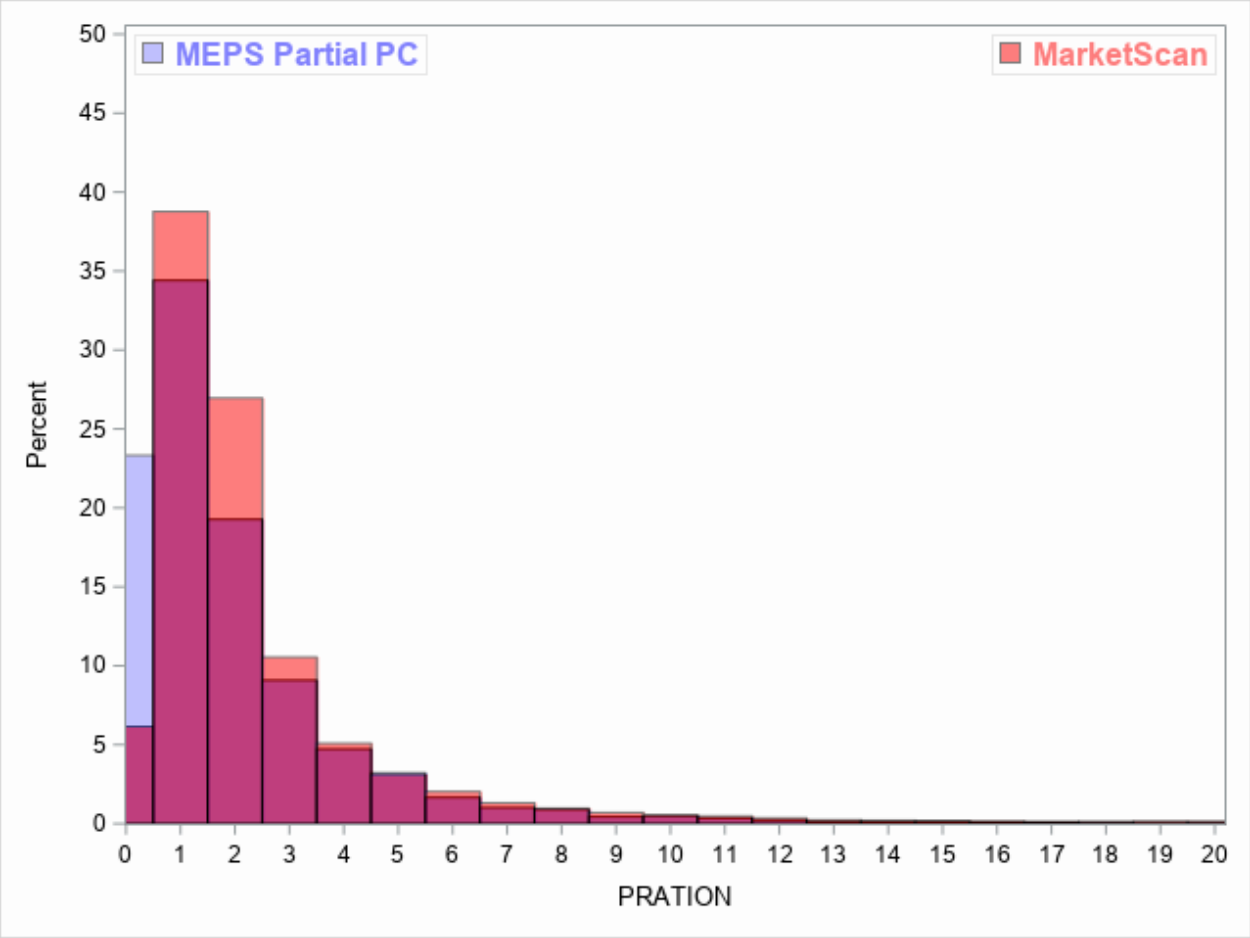
Edited MEPS PC: post-edit Medical Expenditure Panel Survey Pharmacy Component data;
PRATION: a ratio calculated as Retail Unit Price (RUP) divided by National Average Drug Acquisition Cost (NADAC);
Note: 2% and 6% of generic drug fills have a PRATION>20 in MarketScan and in edited MEPS PC data, respectively

PRATION Distributions in Unedited MEPS PC Fills with Partial Payment Data and MarketScan for Single Source Brand Name Drugs



MEPS Partial PC: Medical Expenditure Panel Survey Pharmacy Component data with partial payment information;
PRATION: a ratio calculated as Retail Unit Price (RUP) divided by National Average Drug Acquisition Cost (NADAC);
Note: 2% and 1% of single source drug fills have a PRATION>2 in MarketScan and in MEPS Partial PC data, respectively

PRATION Distributions in Unedited MEPS PC Fills with Partial Payment Data and MarketScan for Generics



MEPS Partial PC: Medical Expenditure Panel Survey Pharmacy Component data with partial payment information;
PRATION: a ratio calculated as Retail Unit Price (RUP) divided by National Average Drug Acquisition Cost (NADAC);
Note: 2% and 0.3% of generic drug fills have a PRATION>20 in MarketScan and in MEPS Partial PC data, respectively

Fills paid by OOP payment

Percentage of drug fills paid **entirely** out-of-pocket payment

Data Source/ Type of Drugs	Single Source	Generic
MarketScan	7.7%	47.1%
Edited MEPS Pharmacy Component data	8.5%	38.3%
Unedited MEPS with Complete Payment Data	13.3%	44.7%

- For single source brand name drugs,
  - Edited MEPS PC similar to MarketScan →current approach works well
- For generics,
  - Unedited MEPS with complete payments similar to MarketScan
  - Current MEPS editing rules may have imputed third party payments to too many fills with missing payment information
    - Edited MEPS PC: 38% compared with 47% in MarketScan

OOP: out-of-pocket

Other Drug Characteristics Investigated

- Brand name originators – somewhere between single source and generics
- Biologics – the distribution was similar to that of single source brand name
- Liquids – have a thicker tail in the PRATION distribution
- Other forms – did not differ from pills
- Drugs with orphan indications – difficult to assess because many had orphan and non-orphan indications

Potential New Editing Rules in MEPS

- The **Lower** Threshold for **PRATION** by Type of Drugs

	PRATION	
	Single Source	Generic
Complete payments and (in donut hole or discounts reported)	.01	.01
Complete payments and not in donut hole and no discounts reported*	.85	.01
Partial payments and not in donut hole	.95	.42
Partial payments in donut hole	.45	.42

- The **Upper** Threshold for **PRATION** by Type of Drugs
  - 8 for single source liquid drugs, 50 for generics and 4 for all other drugs

PRATION: a ratio calculated as Retail Unit Price (RUP) divided by National Average Drug Acquisition Cost (NADAC);
Note: the donut hole thresholds for brand name drugs are approximations to 50% discounts on negotiated prices.
*This drug fill is likely missing a third party payment

Potential New Editing Rules in MEPS

- In MEPS Pharmacy Component data with partial payment information, because very low prices need to be edited, we also use a lower threshold for **price per fill** :
  - $4 for generics, $10 for originators, and $50 for single source brand name drugs
  - The lower price per fill threshold does not apply to partial fills of less than 6 pills or over-the-counter drugs

Limitations

- MarketScan data represent large private-sector employers who comprise more than 50% of all workers in the U.S. and are not nationally representative
- MEPS Pharmacy Component data are not nationally representative

Future Work

- Assess the impact of new editing rules if they had been used on 2019 data
  - Distribution of imputed PRATIONs relative to MarketScan
  - Average prices
  - Total drug expenditures overall and relative to
    - National Health Expenditure Accounts
    - IQVIA
- Refine editing rules as needed
- Consider implementing the new rules for the 2020 data

PRATION: a ratio calculated as Retail Unit Price (RUP) divided by National Average Drug Acquisition Cost (NADAC)