The impact of community pharmacy-delivered medication synchronization on healthcare utilization and costs

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Introduction

• **Medication synchronization**
  • Also referred to as the Appointment Based Model (ABM)
  • Four core elements exist

• **Background**: Limited literature on medication synchronization and economic effect
  • Most medication synchronization literature evaluates adherence

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Introduction

• **Primary Objective**: To evaluate the association of medication synchronization on per member per month (PMPM) total healthcare costs in a sample of Medicare Part D beneficiaries

• **Secondary Objectives**:
  • To assess the relationship of medication synchronization on Medicare beneficiaries’ outpatient, inpatient, emergency department (ED) utilization, and overall healthcare utilization
  • To assess the relationship of medication synchronization on Medicare beneficiaries’ time to first hospitalization and/or ED visit following enrollment in a medication synchronization program
  • To evaluate the relationship between medication synchronization on Medicare beneficiaries’ chronic medication adherence through Proportion of Days Covered (PDC) at two time periods (six and twelve months after enrollment)
Study Methods

- **Data source**: Medicare data
  - Research Data Assistance Center (ResDAC)

- **Study design**: Retrospective cohort study using Research Identifiable Files (RIF)
  - Cohort identification
  - Propensity score matching

- **Sample size**: 6975 beneficiaries per cohort
  - 80% power for detecting a 10% lower mean in PMPM
  - Type I error rate ($\alpha$) of 0.05
Conceptual Framework

**Primary Determinants of Health Behavior**
- Population Characteristics
  - Sex
  - Age
  - Race
  - Marital status
  - Comorbidities
  - Prior medication adherence behavior
- Health Care System
  - Baseline Healthcare Costs
  - Baseline Healthcare Utilization
  - Number of Unique Medication Fill Dates
- External Environment
  - State of Residence
  - Locality
  - Pharmacy

**Health Behavior**
- Personal Health Practices
  - Medication synchronization
- Use of Health Services
  - Medication adherence at six months

**Health Outcomes**
- Perceived Health Status
- Evaluated Health Status
  - ED visits, hospitalizations, total healthcare costs
  - Medication adherence at twelve months
- Consumer Satisfaction
Study Methods

• **Data years**: 2013, 2014, 2015

• **Data files**: Inpatient, Skilled Nursing, Outpatient, Home Health, Carrier, Part D Event Drug, Drug Characteristics, Plan Characteristics, Prescriber Characteristics, Pharmacy Characteristics and the Medicare Master Beneficiary Summary File

• **Analysis**: SAS 9.4
Methods: Timeline

- **Fall 2015**: wrote Community Pharmacy Foundation (CPF) grant
- **January 2016**: CPF grant funded
- **May/June 2016**: Attended ResDAC workshops
  - Introduction to Medicare
  - Introduction to Medicare Part D
- **In progress**: Construction of data dictionary
- **May 2016**: Draft packet submitted to ResDAC for 2013 & 2014 data files
- **June/July 2016**: Draft packet review and revisions
- **August 2016**: Final packet submitted, once approved DUA can be signed and Purdue University IRB paperwork submitted
CMS Research Identifiable Request Process and Timeline

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<tr>
<th>Researcher</th>
<th>ResDAC</th>
<th>DPSP Contractor</th>
<th>CMS</th>
<th>NewWave-GDIT</th>
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<tr>
<td>Draft packet submitted to ResDAC</td>
<td>Packet review (5-7 business days each round) includes review from Executive Advisor and Technical Advisor</td>
<td>Data Management Plan review</td>
<td>Privacy Board (bi-weekly rolling reviews)</td>
<td>Data processing</td>
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<td>Packet revisions (may include multiple rounds)</td>
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Available: http://www.resdac.org/resconnect/articles/115
Next Steps

• Fall 2016: Expecting data for the 2013 & 2014 files

• November 2016: 2015 data available and updated paperwork submitted

• Winter 2016: Initial data cleaning and analysis

• Spring 2017: Final data cleaning and analysis
Discussion

• Obstacles encountered
  • Cohort identification
  • Change in files desired

• Limitations of data
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