Objective

The purpose of this Medicare-Medicaid Data Integration (MMDI) use case is to demonstrate the use of integrated Medicare and Medicaid data to investigate opioid prescribing patterns specific to the dual eligible population. The analytic approach described in this use case will enhance states' ability to identify potentially inappropriate prescribing behaviors that may play a role in dual eligibles' misuse of analgesic opioids.

Analysis Overview

Background

Opioid use disorders and prescription opioid misuse are prevalent and costly public health problems in the United States. Nearly two million Americans were identified as having a diagnosed opioid use disorder in 2015.[1] Additionally, of the 97.5 million individuals ages 12 and older who received a prescription pain reliever in 2015, [2] 10 million, or 4%, reported misusing* their opioid prescriptions.†

Research has shown that excessive and inappropriate prescribing of opioids is a widespread problem and is largely responsible for the observed misuse trends.[3] There is particular concern about the fact that opioid associated overdose deaths have quadrupled from 1999 to 2013.[4,5]

In response to these trends, the Federal Government's work in the field of opioid misuse and abuse has markedly increased.[6] One prominent example is the Centers for Medicare & Medicaid Services' (CMS') Medicaid Innovation Accelerator Program (IAP), which identifies reducing substance use disorders (SUDs), including opioid misuse and abuse, as a priority area.[7] To help states apply these efforts to the dual eligible population, this use case demonstrates how states can use Medicare Part D Prescription Drug Event (PDE) data to examine opioid prescribing patterns specific to the dual eligible population.

Potential Application of Findings

- Care Coordination:
    - The findings of this use case will enable states to identify prescribers with potentially inappropriate prescribing behaviors by examining their opioid prescribing patterns.[8] States can then communicate directly with prescribers about their prescribing patterns, providing targeted

* In the 2015 National Survey on Drug Use and Health, the ". . . definition of misuse referred to the use of prescription drugs in any way a doctor did not direct respondents to use them and focused specifically on behaviors that constituted misuse. Examples of behaviors that were presented to respondents for misuse included (a) use without a prescription of the respondent's own; (b) use in greater amounts, more often, or longer than told to take a drug; or (c) use in any other way a doctor did not tell respondents to take a drug." See endnote 1 for source.
Misuse becomes abuse when it occurs to an addictive extent.

† Proportion of individuals misusing opioids based on Hydrocodone Products; Zohydro® ER; Oxycodone Products; Morphine Products; Fentanyl; Products; Buprenorphine Products; Oxymorphone Products; Demerol; Hydromorphone; and Methadone counts.

education and notification about prescribing patterns that may be inappropriate.
    - States can also alert prescribers about their dual eligible patients who may be obtaining opioid prescriptions from multiple prescribers or pharmacies.
    - States may also be able to assist prescribers in identifying their dual eligible patients who may benefit from substance use counselling and treatment. For those states in which dual eligibles are largely served in managed care arrangements, states could coordinate such efforts with the managed care organizations.
- **Policy and Program Planning:** The findings of this use case may also inform states' consideration of policy recommendations, laws, and regulations aimed at decreasing the likelihood of risky opioid prescribing patterns. States could provide interventions for health systems and managed care organizations serving dual eligibles who appear to have higher rates of opioid misuse or opioid use disorders. States could also develop programs that utilize evidence-based opioid prescribing guidelines to support providers in making decisions for managing pain in the dual eligible population.[9]

Analytic Aims Addressed

The MMDI team will generate a profile of opioid prescribing practices based on the Centers for Disease Control and Prevention's (CDC's) "Guideline for Prescribing Opioids for Chronic Pain."[10] Please note that the CDC guideline was developed mainly for primary care and is not specific to the dual eligible population. States may choose to adapt these aims based on other guidelines, including their own. Examples of other guidelines available to states are described in greater detail in the Technical Assistance and Analytic Tasks section below.

The CDC guideline addresses the following:

- Appropriate clinical practice indicating the need for an opioid prescription
- Appropriate choice of type, strength, and duration of opioid prescription
- Appropriate risk mitigation (e.g., SUD counseling and or referral to SUD treatment)

The analytics presented in this use case will describe prescribing patterns of opioid analgesics to non-hospice dual eligibles during a one-year period. Specifically, we will describe the prescribers' practices as follows:

1. **Generate yearly prevalence estimates to characterize opioid prescribing**
    a. Percentage among all prescribers who prescribed any opioid as identified by National Drug Codes (NDCs) specific to opioid prescriptions.

   b. Percentage of prescribers who prescribed opioids by provider specialty (e.g., primary care vs. specialist).*
   c. Percentage of prescribers who prescribed opioids by beneficiary chronic conditions (e.g., behavioral health conditions, cancer).
   d. Cross-frequency of #1b and #1c.
2. **Generate yearly prevalence estimates to characterize the choice of type, strength and duration of opioid prescriptions**
   a. Rankings of the most frequently prescribed opioids for the year.
   b. Rankings of the top opioid prescribers for the year. This will be reported by beneficiary chronic condition and prescriber specialty as defined in #1.
   c. Frequency of opioid prescribers by the number of consecutive days covered by the prescription (3, 7, 14, 30, 60, 90+ days). This will be reported by beneficiary chronic condition and prescriber specialty as defined in #1.
   d. Frequency of opioid prescribers by dosage (less than 50 mg, 50mg+, 90mg+, 120mg+, 140mg+).† This will be reported by beneficiary chronic condition and prescriber specialty as defined in #1.
   e. Frequency of opioid prescribers by Drug Enforcement Administration (DEA) Drug Schedule.
3. **Generate yearly prevalence estimates to assess appropriate risk mitigation in opioid prescribing**‡
   a. Frequency of prescribers who prescribed immediate release opioids at the start of opioid therapy. For this metric, we will define "start of opioid therapy" as new prescriptions to beneficiaries who did not have opioid prescriptions as of the start of the study year. We will look back to the last 90 days of the prior year to make this determination.
4. Generate yearly prevalence estimates to assess potential high-risk prescribing practices
   a. Frequency of prescribers who prescribed extended-release (ER) and long-acting (LA) at the start of opioid therapy. For this metric, we will define "start of opioid therapy" as new prescriptions to beneficiaries who did not have opioid prescriptions as of the start of the study year. We will look back to the last 90 days of the prior year to make this determination.

*The CDC provider prescribing guideline was developed mainly for primary care. While the measures do apply to specialties, that is not the focus of the guideline. Specialty specific guidelines for opioid prescribing are available and have been described in greater detail in the Technical assistance and Analytic Tasks section.
† All reports of dosage will use morphine milligram equivalents per fill.
‡ Other measures already reported within this use case may also be representative of risk mitigation strategies. For example, low dose prescriptions (less than 50mg) or prescribing for a limited amount of time (less than 7 days).

Medicare, Medicaid, and Other Relevant Data Sources

Table 1: Medicare, Medicaid, and Other Relevant Data Sources identifies the data files, time period, and source for Medicare,[11] Medicaid, and other relevant data sources which may or may not be utilized to support the analytics in this use case.

Table 1: Medicare, Medicaid, and Other Relevant Data Sources

Data Files	Time Period Available	Source
Current Medicare Parts A/B, Enhanced Coordination of Benefits Agreement (COBA)	Two weeks post-adjudication	Benefits Coordination and Recovery Center (BCRC)
Historic Medicare Parts A/B	2007 – current, with a three month processing lag	Chronic Conditions Data Warehouse (CCW)
Historic Medicare Part D PDE	2007 – current, with a one month processing lag	Integrated Data Repository (IDR)
Master Beneficiary Summary File (MBSF) Base Segment (A/B/D)	2007 – 2016	CCW
MBSF Cost & Use Segment	2007 – 2015	CCW
MBSF Chronic or Other Potentially Disabling Conditions	2007 – 2015	CCW
MBSF Chronic Condition Segment	2007 – 2015	CCW
CCW Identifier Crosswalks	2007 – 2016	CCW
Medicaid claims, encounters, and enrollment	Varies by state	State Medicaid Management Information System (MMIS), Data Warehouse or other
Drug reference database	Varies by source	There are many options available to states, including both proprietary and publicly available sources. An example of the latter is the Conversion Reference Table from the CDC Prescription Drug Monitoring Program Training and Technical Assistance Center's (PDMP TTAC) guide.[12]

Technical Assistance and Analytic Tasks

The MMDI program is an initiative sponsored by both the CMS Medicare-Medicaid Coordination Office (MMCO) and the Center for Medicaid and CHIP Services (CMCS). The focus of the MMDI program is to provide CMS-funded technical support to selected states and assist them with integrating the Medicare and Medicaid data in order to enhance care coordination and reduce costs for the dual eligible population. In each contract year, the MMDI team collaborates with a certain number of participating Financial Alignment Initiative (FAI) and Medicaid IAP states to gain in-depth understanding of the data integration challenges faced, provide technical support and assistance in addressing those challenges, and document common issues and best practices. One of the services offered by the MMDI team is to provide states with use cases that demonstrate how states can leverage integrated Medicare and Medicaid data to potentially inform policy and program design, educate stakeholders, and benefit dual eligibles.

The MMDI team is available to provide state-specific assistance in integrating and making use of the data sources identified above. States do not need to acquire and use all of these data sources in order to conduct the analysis. The team can help states determine the best data sources to address specific areas of interest. In addition, the team can provide technical and subject matter expertise at the request of the states in any of the following areas:

- Develop a detailed description of the proposed approach to this analysis, including the optimal data sources, relevant data fields, and an estimated timeline for each step.
- Develop technical specifications and programming code to:
    - Identify appropriate prescription records through matching, using National Drug Codes or other pharmaceutical nomenclature
    - Calculate morphine milligram equivalents (MME) to standardize dosage reporting across different prescription types
    - Link prescribers across data sources and by enrollment status
- Provide consultation on report and/or dashboard design featuring the results of the integrated data analysis.

The MMDI team is also available to help states develop analytics that target state-specific interests in prescribing behavior. In the list presented below, we provide examples of guidelines available to states to evaluate opioid prescribing.

- Washington Agency Medical Directors' Group Interagency Guideline on Prescribing Opioids for Pain, Part II: Prescribing Opioids in the Acute and Subacute Phase[13]
- Pennsylvania Guidelines on the Use of Opioids in Dental Practice[14]
- National Heart, Lung, and Blood Institute's Evidence Based Management of Sickle Cell Disease Expert Panel Report for management of sickle cell[15]

- The Veteran's Administration and Department of Defense Clinical Practice Guideline on Opioid Therapy for Chronic Pain[16]
- The American Society of Addiction Medicine National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use[17]
- American College of Emergency Physicians' guideline for prescribing of opioids in the emergency department[18]
- American Society of Anesthesiologists' guideline for acute pain management in the perioperative setting[19]

Contact Information

Any state that is currently integrating or plans to integrate Medicare and Medicaid data in order to enhance care coordination and reduce costs for the dual eligible population and is interested in support related to this particular topic may contact the following:

- The MMDI Team: MMDIFEiTeam@feisystems.com
- The State Data Resource Center (SDRC): SDRC@acumenllc.com

End Notes

[1] "Prescription Drug Use and Misuse in the United States: Results from the 2015 National Survey on Drug Use and Health," The Substance Abuse and Mental Health Services Administration (SAMHSA). https://www.samhsa.gov/data/sites/default/files/NSDUH-FFR2-2015/NSDUH-FFR2-2015.htm, accessed 12/13/2016.

[2] Ibid.

[3] "Overprescribing of opioids is not limited to a few bad apples," Beth Duff-Brown. 12/14/2016. https://med.stanford.edu/news/all-news/2015/12/overprescribing-of-opioids-is-not-limited-to-a-few-bad-apples-st.html, accessed 9/13/2016.

"Opioid painkiller prescribing varies widely among states," CDC Newsroom. 7/1/2014. http://www.cdc.gov/media/releases/2014/p0701-opioid-painkiller.html, accessed 9/13/2016.

"Opioid addiction caused by overprescribing, not recreational abuse, is key driver of painkiller and heroin overdose crisis," Heller News Brandeis University. 2/4/2015. https://heller.brandeis.edu/news/items/releases/2015/overprescribing.html, accessed 9/13/2016.

[4]"Injury Prevention & Control: Opioid Overdose," The Centers for Disease Control and Prevention. http://www.cdc.gov/drugoverdose/data/index.html, accessed 9/13/2016.

[5] "Increases in Drug and Opioid Overdose Deaths — United States, 2000–2014," Morbidity and Mortality Weekly Report (MMWR). 1/1/2016. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a3.htm?s_cid=mm6450a3_w, accessed 9/13/2016.

[6] "Grand Rounds: The Prescription Opioid Epidemic," Centers for Medicare & Medicaid Services. 11/3/2015. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/Downloads/The-Prescription-Opioid-Epidemic-Slide-Deck.pdf, accessed 9/13/2016.

"Medicare Part D Overutilization Monitoring System (OMS) Summary," Centers for Medicare & Medicaid Services. 11/3/2015. https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2015-Fact-sheets-items/2015-11-03.html, accessed 9/13/2016.

"Medicare Part D Opioid Drug Mapping Tool," Centers for Medicare & Medicaid Services. https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/OpioidMap.html, accessed 9/13/2016.

"Best Practices for Addressing Prescription Opioid Overdoses, Misuse and Addiction," CMCS Informational Bulletin. 1/28/2016. https://www.medicaid.gov/federal-policy-guidance/downloads/CIB-02-02-16.pdf, accessed 9/13/2016.

"Fact Sheet: Obama Administration Announces Additional Actions to Address the Prescription Opioid Abuse and Heroin Epidemic," The White House Office of the Press Secretary. 3/29/2016. https://www.whitehouse.gov/the-press-office/2016/03/29/fact-sheet-obama-administration-announces-additional-actions-address, accessed 9/13/2016.

[7] "Reducing Substance Use Disorders," Centers for Medicare and Medicaid Services, Medicaid Innovation Accelerator Program. https://www.medicaid.gov/state-resource-center/innovation-accelerator-program/reducing-substance-use-disorders/reducing-substance-use-disorders.html, accessed 9/30/2016.

[8] "Opioid addiction caused by overprescribing, not recreational abuse, is key driver of painkiller and heroin overdose crisis," Heller News Brandeis University. 2/4/2015. https://heller.brandeis.edu/news/items/releases/2015/overprescribing.html, accessed 9/13/2016.

[9] "Injury Prevention & Control: Opioid Overdose," The Centers for Disease Control and Prevention. http://www.cdc.gov/drugoverdose/states/state_prevention.html, accessed 9/13/2016.

[10] "CDC Guideline for Prescribing Opioids for Chronic Pain - United States 2016," CDC Recommendations and Reports. 3/18/2016. https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm, accessed 10/18/13/2016.

[11] "Medicare Data Available," State Data Resource Center (SDRC). http://www.statedataresourcecenter.com/medicare-data-available.html, accessed 2/8/2017.

[12] "Technical Assistance Guide No. 01-13: Calculating Daily Morphine Milligram Equivalents," Prescription Drug Monitoring Program Training and Technical Assistance Center. 2/2013, Page 6 of 6. http://www.pdmpassist.org/pdf/BJA_performance_measure_aid_MME_conversion.pdf, accessed 9/13/2016.

[13] "Prescribing Opioids for Pain, Part II: Prescribing Opioids in the Acute and Subacute Phase," Washington Agency Medical Directors' Group Interagency. 6/2015. http://www.agencymeddirectors.wa.gov/Files/2015AMDGOpioidGuideline.pdf, accessed 11/15/2016.

[14] "Pennsylvania Guidelines on the Use of Opioids in Dental Practice," Pennsylvania Dental Association. 3/2015. https://www.pamedsoc.org/PAMED_Downloads/opioid_dental_prescribing_guidelines3_13_15.pdf, accessed 11/15/2016.

[15] " Evidence Based Management of Sickle Cell Disease Expert Panel Report for management of sickle cell," National Heart, Lung, and Blood Institute (NHLBI). 2014. https://www.nhlbi.nih.gov/sites/www.nhlbi.nih.gov/files/sickle-cell-disease-report.pdf, accessed 11/15/2016.

[16] "Clinical Practice Guideline on Opioid Therapy for Chronic Pain," The Veterans Administration and Department of Defense. 2010. http://www.va.gov/painmanagement/docs/cpg_opioidtherapy_summary.pdf, accessed 12/13/2016.

[17] "The American Society of Addiction Medicine National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use," American Society of Addiction Medicine. 6/1/2015. http://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf, accessed 12/13/2016.

[18] "Clinical policy: critical issues in the prescribing of opioids for adult patients in the emergency department," American College of Emergency Physicians. 10/2016. https://www.guideline.gov/summaries/summary/38439/clinical-policy-critical-issues-in-the-prescribing-of-opioids-for-adult-patients-in-the-emergency-department, accessed 11/15/2016.

[19] "Guideline for acute pain management in the perioperative setting," American Society of Anesthesiologists. 4/2012. http://anesthesiology.pubs.asahq.org/article.aspx?articleid=1933589, accessed 1/5/2017.