Impact of A Retrospective Drug Utilization Program on Changing Opioid Prescribing Behavior
Jonathan Chiang, PharmD1; Phil Schwab, PhD2; Ryan McCulloch3; Phyllis Brooks, PharmD1; Clay Rhodes, PharmD, MBA1; Laura Happe, PharmD, MPH1
1Humana Pharmacy Solutions, Humana Inc., Louisville, KY; 2Comprehensive Health Insights, Humana, Inc., Louisville, KY

Background
• The opioid epidemic has reached unprecedented heights, with deaths due to opioid medications having increased by over 200% in the last 10 years.
• Federal and state drug policy efforts have focused on improving opioid prescribing practices, and managed care organizations have responded to this crisis by developing a number of strategies to impact prescribing behavior.
• However, these provider-facing strategies have not been rigorously evaluated, thus little evidence exists on how to prevent the unsafe prescribing of opioids.
• Moreover, there is mixed evidence on whether prescribing mailers have a measurable impact on behavior.

Objectives
To determine the effectiveness of a retrospective drug utilization review (DUR) program in changing prescribing behavior among a large, national health plan's top 1% of prescribers.

Methods
Study Design
This was a retrospective, quasi-experimental study measuring the pre-post impact of Humana's high-dose prescriber campaign mailing versus no mailing on prescribing behavior.

Outcome Measures
Primary
• Change in average daily morphine equivalent doses (MEDs) prescribed

Secondary
• Change in percentage of patients with concurrent claims for active ADEs
• Change in percentage of patients with an opioid

Data Source
This study utilizes administrative claims data from 1/1/16-8/31/17, with a one-year measurement period (before mailing) of 1/1/16-8/31/16, and a post-index measurement period (after mailing) of 1/1/17-8/31/17.

Statistical Analysis
All statistical testing were conducted using SAS version 9.1. Difference-in-differences analyses were conducted to evaluate differences in the magnitude of change of the outcome measures of interest.

Results
The High Dose Prescriber Campaign was a DUR mailing program launched in 2016 which aimed to change the prescribing behavior among the health plan's providers prescribing the highest volumes of opioid medications (top 1% of prescribers), and includes the following components:

Identification of Providers
Inclusion criteria
• Prescribers of opioid medications to at least 15 unique patients and who have written for a 100+ prescriptions in the pre-index period

Exclusion criteria
• Oncology and hospice specialists
• Non-opioid prescribing provider specialties
• Prescribers from Puerto Rico
• Prescribers with missing demographic information

Patient inclusion criteria
• Patients who were continuously enrolled during the study period 1/1/16-8/31/17
• Patients aged 19-89 as of the index date

Inclusion/exclusion criteria were applied, prescribers were sorted by average MEDs prescribed to establish the top 1% of prescribers based on administrative claims linked to each prescriber. Of the prescribers identified, 1,000 were randomly selected to be included in a control group for comparative purposes and did not receive the mailing intervention.

Mailing Intervention
• A customized DUR scorecard was sent to each prescriber which detailed the opioid prescribing history and benchmarked each provider against the rates of prescribing of their peers (based on specialty), other Humana-member providers, and against national rates.
• Patient-level claims data for up to 25 of each prescriber's patients were included in the scorecard to provide actionable insights to prescribers.

COC opioid prescribing guidelines were also included with the mailing.
• The mailing was sent to 6,000 prescribers

Program Description

Conclusions and Future Directions
• The effect of the DUR mailing intervention on reducing opioid prescribing was unclear when using most established and exploratory analytic measures, as there was a statistically significant effect observed for most measures.
• However, there was a statistically significant difference for the change in percentage of patients with an opioid-related ADE between groups which indicates a possible positive effect of the mailing. Additionally, there was a statistically significant difference for the change in percentage of prescriptions written for ER/LA opioids between groups which indicates a possible negative effect of the mailing.
• Rates of opioid prescribing trended downwards over time in both groups. This is likely due to the heightened publicolic awareness and response to the opioid epidemic.
• The specialty type of a prescriber may play a significant role in determining overall prescribing behavior. Further investigation is needed to explore differences among provider specialty types.
• This is the first of several prescribing-facing interventions being evaluated by Humana.

Limitations
• Baseline (pre-mailing) prescribing characteristics between the control and intervention group were not the same, so statistical matching was not used in this initial analysis. Variation among provider specialty type and prescribing behavior between groups in the intervention group indicates additional analyses, with matching, is warranted.
• Other interventions from governmental entities, health care organizations or payers could have confounded effects of the mailing program on prescribing behaviors, despite inclusion of a control group.
• This study assumed that a sufficient proportion of mailings were actually read by providers to illicit the desired effects; however, the number of providers receiving and actually reading the mailing were not measured.

References
5. The Ohio Pain Society (OPS); Pain Care Improvement Plan: the Ohio pain care improvement plan (OPCIP) was an integrated initiative of the Ohio Department of Health (ODH) and the Ohio State Medical Association (OSMA) to address the risk of opioid abuse.

The mailing was sent to 6,000 prescribers