

EVIDENCE-BASED REPORT

Integration of OpioidRx-AI Decreased the Cost Impact of Opioids in a Home Builders' Association Health Plan

Program: OpioidRx-AI · Home Builders' Health Plan (6,000 Members)

Duration: 12-Month Intervention

Organization: Opioid Clinical Management Inc. (OPCM)

88%

Reduction in mean cost per
high-risk member

\$2.14M

Savings from reduced
medical claims

36–114%

Rise in provider CDC
guideline conformance



Introduction

The opioid abuse epidemic is an important global public health problem.¹ In the United States, the opioid crisis is a major public health concern; in 2019, opioids were responsible for 15.8 deaths per 100,000 individuals.¹

Overprescription of opioids by medical professionals has been proposed as one of the contributors to the opioid crisis.^{1,2} Even though opioid medications play a role in pain management, their use has been associated with risks of misuse, addiction, diversion, and overdose. Among patients treated with opioids for chronic pain, the estimated risk of misuse was 21%–29%, whereas the estimated risk of addiction was 8%–12%.²

Increased total and prescription healthcare expenditures and resource utilization were observed among 31,696,671 adults prescribed an opioid compared to 31,536,639 adults without an opioid prescription in a serial cross-sectional study (2008–2017).³ Total annual expenditures were estimated at **\$16,542** for a respondent with an opioid prescription versus **\$7,067** without, and the total annual economic burden among in-

dividuals with an opioid prescription was estimated at **\$524 billion**.³

The quality of education on opioid prescribing received by medical students and residents has been shown to vary.⁴ Moreover, exposing HCPs to opioid educational information has been associated with decreased opioid prescribing for chronic pain.⁵ Therefore, the appropriate training of HCPs on opioid prescribing and adoption of best prescribing practices should be verified, and suboptimal prescribing practices should be identified and improved in a timely manner.

To identify prescription patterns associated with a risk of opioid abuse, health plans often rely on analytic programs provided by pharmacy benefit managers (PBMs). However, the risk of opioid misuse and addiction should be detected as early as possible.

This report illustrates how OpioidRx-AI, a novel AI-based risk management tool, helps to identify HCPs potentially overprescribing opioid medications and to take action to improve these patterns in a home builders' health insurance plan.

Methods

OpioidRx-AI, an AI-based risk management tool developed by Opioid Clinical Management (OPCM), was employed to assess and manage patterns of opioid prescription in a home builders' health plan with 6,000 members over the course of 12 months.

Data Analysis

The OpioidRx-AI tool relied on deidentified healthcare data from the medical records of the plan's members to detect patterns of opioid side effects, early dependency indicators, and excess costs. Based on these data, providers who potentially overprescribed opioids were identified.

Member Cohort Tracking

Plan members classified as at-risk for opioid abuse were evaluated each quarter and subsequently classified as *still-at-risk* or *non-at-risk* based on their opioid prescription utilization during the quarter.

Each quarter, claim and enrollment data were summarized for: (1) non-identified members (without opioid prescription history); (2) identified as still-at-risk for opioid abuse members; and (3) identified as not-at-risk (no longer at risk) for opioid abuse members.

Each quarter, a new cohort of members was classified as at-risk for opioid abuse based on their utilization of opioid prescriptions and tracked separately, with cate-

gORIZATION of medical and prescription drug claims and enrollment data.

Provider Outreach

Potentially overprescribing HCPs were contacted confidentially by OPCM pharmacists — retail pharmacists with over 20 years of experience — on the plan provider's behalf. OPCM pharmacists educated the

HCPs on the adoption of CDC's best practices for opioid prescribing.

Prescribers included in the program informed plan members of the program. Plan members could be asked to sign an opioid contract, undergo a drug screen, and be referred to a pain specialist.

Results

Increased Provider Conformance with CDC Guidelines

A sample of 549 providers was tracked for 1.5 years after initial OPCM contact. The difference in mean conformance rate across all guidelines between initial contact and 1.5 years later shows high statistical significance with paired t-test: $p=1.09e-30$, $n=549$. A

threshold of $p < 0.05$ is generally used to determine statistical significance; p values of nearly zero indicate statistical significance.

PROVIDER GUIDELINE CONFORMANCE

36–114%

Increase in provider adherence to each CDC guideline for opioid prescribing after first OPCM contact.

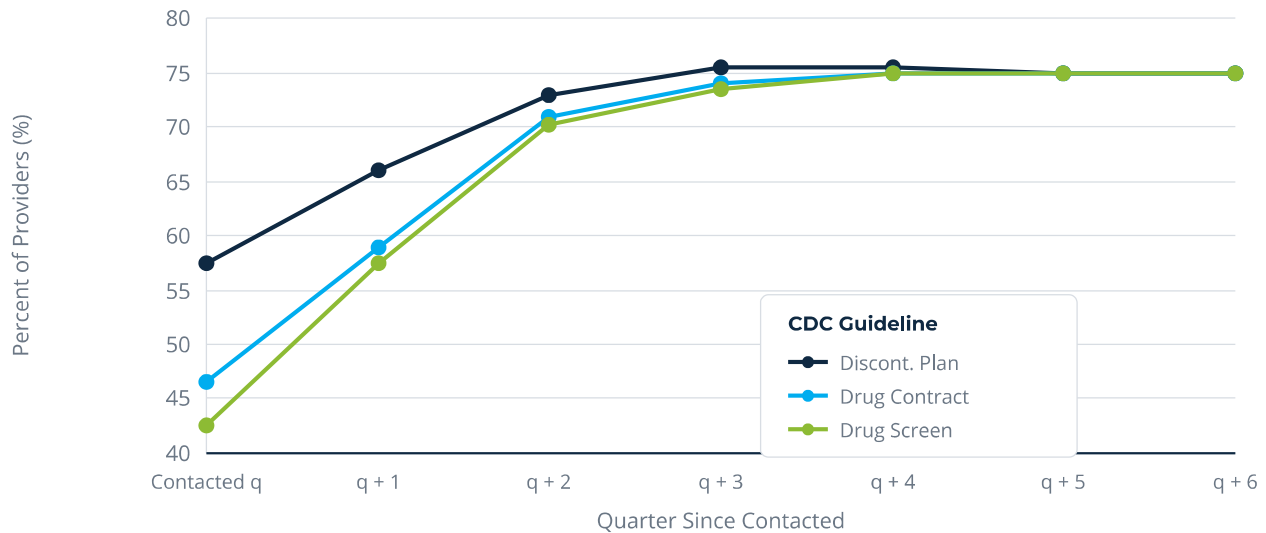


Figure 1. Rate of provider adherence to each CDC guideline for opioid prescribing increases by at least 36%–114% after first OPCM contact.

Reduced Mean Health Plan Cost per Member

During the same time period, the mean health plan cost per member with a high-risk opioid prescription decreased by **88%** — from **\$17,556** to **\$2,133**.

MEAN COST REDUCTION PER HIGH-RISK MEMBER

88%

Decrease in mean health plan cost per member with a high-risk opioid prescription, from \$17,556 at baseline to \$2,133 at 12 months.

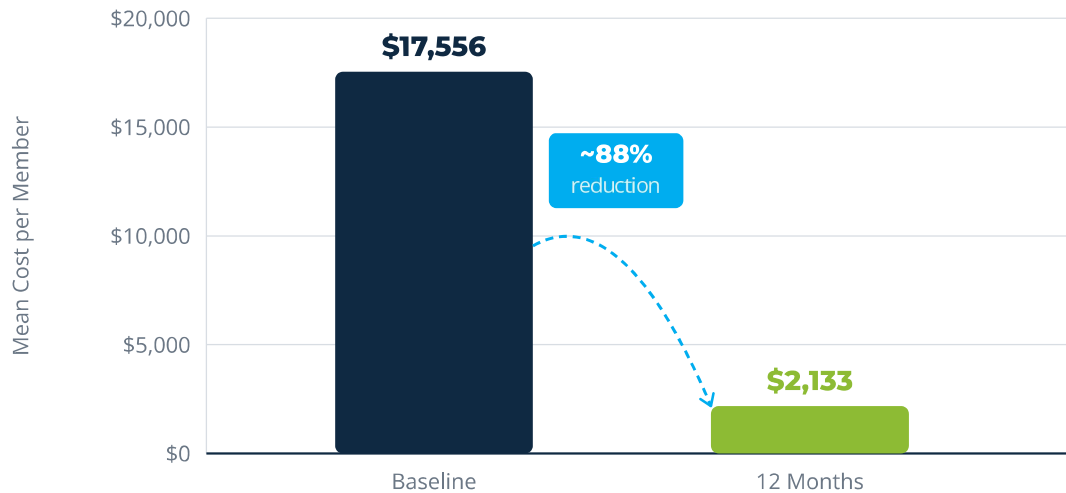


Figure 2. Mean health plan cost per member with a high-risk opioid prescription at the beginning of the program and after 12 months.

Cost Savings from Reduced Medical Claims

Throughout the course of the program, the cost of medical claims decreased by **9.2%** — from **\$23,252,187** to **\$21,114,943** — accounting for almost **\$2.14 million** in savings.

MEDICAL CLAIMS SAVINGS

\$2.14M

Reduction in total medical claims cost over the 12-month program, a 9.2% decrease from \$23.25M to \$21.11M.

Discussion

These data illustrate the potential of OpioidRx-AI, an AI-based risk management tool, to detect clinical risk patterns of opioid prescribing and to intervene with HCPs to adopt CDC best practice guidelines for opioid prescribing in a home builders' health plan.

In this plan, the adoption of OpioidRx-AI was associated with fewer plan members with high-risk opioid prescriptions, reduced health plan cost per member with a high-risk opioid prescription, high adoption of best practice guidelines for opioid prescribing, and cost savings due to reduced medical claims.

Early Detection Advantage

OpioidRx-AI relies on deidentified healthcare data to detect patterns of opioid side effects and early indications of dependency and unnecessary cost within a healthcare network.

Plan members at risk for opioid addiction may be identified months earlier than if using information from a state's drug database or PBMs — enabling timely intervention before pathological indicators emerge.

Mental Health Implications

An increased prevalence of depression, anxiety, and other mental disorders has been detected among individuals with opioid use disorder.⁶ Moreover, prolonged duration of opioid analgesic exposure was associated with an elevated risk of depression in a retrospective analysis of medical record data from 49,770 patients from the US Department of Veterans Affairs (VA) healthcare system.⁷ These findings suggest that decreasing opioid overprescription and the risk of developing opioid abuse may also help to reduce the risk of negative mental health outcomes.

Community-Wide Benefit

In the long run, minimizing opioid overprescription practices using a risk management tool may benefit not only health plan members and their families but also other members of the community, as HCPs adopting best opioid prescription practices also treat patients outside of the health plan.

Prevention-Focused Framework

OpioidRx-AI integration is an early, high-level preventive intervention that can aid the timely detection of

problematic opioid use. OpioidRx-AI can be implemented within 6 weeks and relies only on deidentified healthcare data and quarterly pharmaceutical claims from the health plan. It provides opportunities for regular monitoring and proactive education of HCPs and members, creating a prevention-focused provider network. In addition, its implementation can help decrease prescription-related risks and costs and improve outcomes for plan members and eventually for members of the community.

References

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