Confronting the Opioid Epidemic

Nine imperatives for hospital and health system executives

Look inside for:

- Update on the status and causes of the opioid epidemic
- Implications of the crisis on hospital and health system finances and operations
- Holistic framework for defining the executive’s role in leading a comprehensive opioid response strategy
- Tactics for mobilizing hospital and health system resources to prevent addiction, proactively manage pain, and increase access to addiction treatment
- Key performance indicators for evaluating the effectiveness of opioid response efforts and prioritizing interventions
Opioid crisis response

WHAT YOU’LL LEARN

• How hospital and health systems executives can build a comprehensive and proactive strategy to respond to the opioid crisis
• Where health care providers can best facilitate and support community-wide opioid response efforts
• What performance metrics executives should use to determine how to prioritize their intervention strategy

BEST FOR
Hospital and health system executives

READING TIME
45 min.
Confronting the Opioid Epidemic

Nine imperatives for hospital and health system executives
Health Care Advisory Board

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Message to the Membership

Confronting the Opioid Epidemic

Dear Reader,

Our industry stands at a pivotal moment—one unrelated to national elections or payment models or new competitors. Opioid-related misuse and abuse have swept across our country shattering the lives of millions of Americans. Hospitals and health systems have seen their emergency departments and inpatient beds flooded with patients suffering from addiction and the effects of overdose. Our patients, our communities, and our organizations are experiencing the devastating consequences of the opioid epidemic on a daily basis.

As a result of the seriousness of this crisis—and its importance to health care providers and to our country writ large—the Advisory Board has launched a concerted and robust research effort to support health care leaders in confronting the opioid epidemic. To commence the broader initiative, this research report is designed to guide hospital and health system executives in constructing an effective and comprehensive opioid-response strategy.

This publication contains three distinct sections. First, it will unpack the current status and broader context of the opioid crisis. Second, it will highlight actionable steps senior executives should be taking to prevent new cases of opioid addiction and expand access to addiction treatment options. Third, it will introduce a new data-driven framework to help you prioritize your intervention efforts based on your local market’s most pressing needs.

Beyond this executive briefing, our research teams are developing an expansive library of best practices to help frontline leaders successfully deploy opioid response efforts. Additionally, in partnership with OptumLabs (a scientific research collaborative and co-innovation center supported by over 25 different partnerships with leading health care organizations), we have created a new analytic tool to help you understand the greatest areas of need in your market—or any county across the country. Our ambition is to combine insights from OptumLabs’ data assets and Advisory Board’s best practice research to help you confront the opioid epidemic.

As the following pages will explain in more detail, providers have both a mission- and margin-driven imperative to address this epidemic. Hospitals and health systems that act—especially by collaborating with other local organizations—can make an important difference in their communities and become part of the solution to this profound crisis.

We are truly honored to support you in this critical work. Please do not hesitate to contact us if you would like more information about any of the content discussed in this briefing or if there is any other way we can be of service.

The Health Care Advisory Board
Executive Summary

**Unpacking the Opioid Crisis**

- Over the past two decades, the misuse and abuse of opioids has gradually grown to crisis proportions; it now affects every payer, every state, and every provider.
- A disproportionate share of the crisis has affected Medicaid beneficiaries, exacerbating the existing barriers to access for low-income populations.
- Federal and state government agents have taken initial steps to curb the crisis, but their actions have predominantly focused on dispersing new funds, pressuring industry stakeholders, and implementing prescribing policy guidelines.
- Health care providers have clear opportunities for direct impact; although providers were unintentionally part of the creation of this crisis, they must now be intentionally part of the solution.
- Ultimately, no single stakeholder can solve the opioid epidemic alone; health systems must engage their communities to maximize the impact of their addiction prevention and treatment strategies.

**Mobilizing an Addiction Prevention and Pain Management Strategy**

- The mandate for improving opioid prescribing behaviors must come from the C-suite; executives should establish preventing new addiction as an organization-wide priority.
- Executives should engage clinicians in improving opioid prescribing behaviors by combining existing care redesign strategies with opioid-specific education.
- Given the history of misinformation and miseducation surrounding opioids, leaders should overinvest in specialized support to help clinicians understand when to prescribe opioids and how to do so safely.
- Beyond supporting clinicians, executives should also empower patients with education, resources, and accountability mechanisms to achieve safe opioid-use behaviors.

**Maximizing Opportunities to Deploy Addiction Treatment**

- Medication-assisted treatment (MAT) is the gold standard for treating opioid-addiction; executives should make increasing access to MAT the cornerstone of an addiction treatment strategy.
- Hospitalizations present a unique opportunity to begin addiction treatment; leaders should develop and hardwire protocols for initiating treatment when patients present with opioid use disorder or overdose, and be prepared to tailor those protocols to meet the needs of high-risk populations.
- Even with minimal investments, existing outpatient clinics can substantially increase access to addiction treatment and alleviate pressure on EDs and inpatient units.
- Executives should not default to investing in new opioid treatment facilities alone; instead, they should partner with their communities, state agencies, or the federal government to fund large-scale projects.

Source: Health Care Advisory Board interviews and analysis.
Unpacking the Opioid Crisis
Opioid-Related Acute Care Needs Skyrocketed in the Past 10 Years

144% Increase in individuals treated and released from the emergency department (ED) for opioid-related care, 2006-2015

64% Increase in individuals admitted to the hospital for opioid-related care, 2006-2015

An Epidemic Two Decades in the Making

Opioid Abuse and Addiction Now Capturing National Attention

Over the past 20 years, opioid use in the United States has evolved significantly. Prior to the 1990s, opioids were infrequently prescribed to manage chronic or acute pain. From 1999 to 2014, however, the sale of prescription opioids for pain management nearly quadrupled. In 2015, the Centers for Disease Control and Prevention (CDC) estimated that opioid prescriptions per person had three times as powerful a dosage as they did in 1999. Further, the CDC determined that enough opioids were prescribed in 2015 for every American to be medicated at all times for three consecutive weeks.

Drug overdoses are now the leading cause of accidental death in the US. In 2016 alone, fatal overdoses (63,632) surpassed the number of individuals who died during the HIV/AIDS epidemic at its peak in 1995 (43,000) and in the entire Vietnam War (58,000). At this point, the consequences of opioid misuse and abuse affect communities nationwide.

Opioid-Related Costs Taking a Toll on Overall Economy

$55.6B Estimated cost of opioids in lost economic productivity, 2016

$1T Estimated total opioid-related costs to the American economy, 2001-2017

$500B Projected future opioid-related costs to the American economy, 2017-2020

Safety Net Bearing a Substantial Portion of the Burden

Medicaid Beneficiaries Disproportionately Affected by the Opioid Crisis

Although the impact of this crisis reaches across health care payers and patient populations, the surge of opioid-related deaths and hospitalizations has been particularly severe for low-income populations, especially as some individuals who became addicted to opioids eventually lost the ability to work. By the start of 2016, Medicaid provided health insurance to 19% of the US population but accounted for 44% of opioid-related ED visits. This disproportionate impact presents a challenge to providers as this population already faces more limited access to social support and specialist services (such as pain management and addiction treatment) than other payer populations.

### Approximate Coverage of US Population by Payer Sector

**As of March 2016**

- Employer-Sponsored Insurance (47%)
- Medicare (17%)
- Medicaid and CHIP (19%)
- Public Exchanges (4%)
- Off-Exchange Plans (2%)
- Other (1%)
- Uninsured (9%)

- ≈63M individuals covered by Medicaid

### US National Opioid-Related Emergency Department Visits by Expected Payer

- 44% of opioid-related ED visits

- Medicare
- Medicaid
- Private insurance
- Uninsured

#### A Disproportionate Impact, Spending Within Medicaid

- **2x**: Greater chance a Medicaid enrollee will be prescribed opioids than those with private insurance
- **45%**: Of total overdose deaths accounted for by Medicaid enrollees in 2014
- **$9.4B**: Medicaid program spending on opioid-related treatment in 2013

Federal and State Governments Beginning to Respond
Offering Funding, Prescribing Policies, and Pressure on Private Companies

In light of the magnitude of the opioid crisis—its toll on human life and its considerable effect on state and federally funded health care spending—the public sector has begun to take more directed steps to combat the spread of the epidemic. The federal government, following its traditional approach, has predominantly focused on developing official prescribing guidelines and allocating funds to support state responses. As part of this effort, President Donald Trump declared a National Public Health Emergency in October of 2017 to encourage federal agencies to streamline the opioid-response process. Additionally, the Bipartisan Budget Act of 2018 included $6 billion to expand federal opioid-response grants.

Federal Agencies Offer Funding and Create General Guidelines

<table>
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<tbody>
<tr>
<td>As of Feb. 2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$699M</td>
<td>Existing federal funding directed at opioid crisis, 2017-2021¹</td>
<td>1) No longer need to prove drugs lead to complete abstinence</td>
</tr>
<tr>
<td>$6B</td>
<td>Additional funding directed by 2018 budget deal to opioid and mental health treatment, 2018-2019</td>
<td>2) Can now address a wider range of symptoms (e.g., cravings)</td>
</tr>
</tbody>
</table>

States have taken a more hands-on approach than the federal government. For example, many states have created mechanisms to fund specific, local organizations; directly pressured private payers and drug manufactures; and implemented strict requirements to guide clinician prescribing behaviors.

States Using Variety of Strategies

6 States have declared public health emergencies to allocate additional funding, resources³

37 States have pressed AHIP⁴ on pain management insurance coverage

States See Reduced Repeat Offenders⁵ After Requiring Clinicians to Use State Opioid Registries

75% Decline in New York

36% Decline in Tennessee

Examples of Private Payers Responding to Public Pressure

aetna

Goal to reduce inappropriate opioid prescriptions by 50% by 2022

Cigna

Goal to reduce opioid prescriptions by 25% by 2019

Acknowledging the Opportunity

“Opioid abuse and addiction are an urgent public health crisis…AHIP member plans are committed to alleviating the root causes that contribute…”

AHIP Letter to National Association of Attorneys General, September 22, 2017


¹) Grants awarded over 3-5 years depending on program and availability.
²) Medication-assisted treatment.
³) Arizona, Alaska, Florida, Maryland, Massachusetts, and Virginia.
⁴) America’s Health Insurance Plans.
⁵) Drop in patients seeing multiple prescribers to obtain the same drugs.
Defining the Health System’s Role

Many Providers Confront a Mission-Driven Imperative to Intervene

Hospitals and health systems also have an important role in confronting the opioid epidemic. Three major reasons motivate a mission-driven response from provider organizations.

First, many hospitals and health systems are pillars of their communities, widely respected for their commitment to the promotion of local well-being. Second, as the direct providers of care, health systems and their clinician partners are best-positioned to expand access to alternative mechanisms of pain management and addiction treatment. Third, providers, however unintentionally, contributed to the rise of opioid addiction by significantly increasing the number of opioids prescribed to control pain. A number of forces fueled the elevated use of opioids, particularly that providers did not anticipate these prescription painkillers would be so addictive for individuals suffering from chronic pain or could serve as a gateway to less expensive and more dangerous drugs, especially heroin.

Recognizing their unintentional role in fueling the opioid crisis, a range of stakeholders are taking action to help solve it. For example, the Joint Commission implemented new and revised pain assessment and management standards for hospitals, effective January 1, 2018. Additionally, CMS has removed the pain management dimension from HCAHP1 scores. Further, some pharmaceutical companies are paying large financial penalties associated with the marketing of some opioid products. Hospital and health system leaders also have an opportunity (some may argue an obligation) to actively participate in mitigating the harms of the opioid epidemic.

Provider Opioid Prescribing Patterns Undeniably Part of the Problem

- **17%** of surgical patients who were prescribed opioids were still using them three to six months later
- **5%** of opioid-naive patients who received a prescription became addicted
- **10%** of opioid-naive patients who filled a second prescription refill became addicted

Driven by Misconceptions of Necessity and Impact

- The Joint Commission classified pain as the “fifth vital sign” indicating patient well-being in 2001
- CMS used to include pain management in HCAHP1 scoring, impacting provider reimbursement
- $600M Purdue Pharma penalty for contending that OxyContin had a lower risk of addiction, abuse than other pain killers

Recognizing their unintentional role in fueling the opioid crisis, a range of stakeholders are taking action to help solve it. For example, the Joint Commission implemented new and revised pain assessment and management standards for hospitals, effective January 1, 2018. Additionally, CMS has removed the pain management dimension from HCAHP1 scores. Further, some pharmaceutical companies are paying large financial penalties associated with the marketing of some opioid products. Hospital and health system leaders also have an opportunity (some may argue an obligation) to actively participate in mitigating the harms of the opioid epidemic.


1) Hospital consumer assessment of Healthcare Providers and Systems.
Provider Margins Cannot Sustain a Worsening Opioid Epidemic

Beyond the mission-driven imperative to intervene, health systems have a clear financial rationale to address the opioid crisis. A significant portion of opioid-related health care costs are avoidable emergency department visits or ICU admissions, particularly within the Medicaid population. Health systems stand at the front lines of treatment for this care and bear much of the financial burden, especially as operating costs have increased without a corresponding increase in reimbursement. Providers cannot sustain the financial exposure of ever-increasing ED utilization from Medicaid patients.

Opioid Use Driving Up Health Care Spending…

<table>
<thead>
<tr>
<th>Percentage Change</th>
<th>Description</th>
<th>Cost Increase</th>
<th>Year Range</th>
</tr>
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<tbody>
<tr>
<td>34%</td>
<td>Increase in overdose-related ICU admissions, 2009-2015</td>
<td></td>
<td></td>
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<tr>
<td>58%</td>
<td>Increase in average cost of care per ICU overdose admission from $58K in 2009 to $92K in 2015</td>
<td>$12.2B</td>
<td>2016</td>
</tr>
<tr>
<td>34%</td>
<td>Increase in overdose-related ICU admissions, 2009-2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58%</td>
<td>Increase in average cost of care per ICU overdose admission from $58K in 2009 to $92K in 2015</td>
<td>$21.4B</td>
<td>2016</td>
</tr>
</tbody>
</table>

…However Challenging Economics Eroding Hospital Margin

- Medicaid ED Visits Deplete Health System Resources
  - $54.4B Total cost of ED use by Medicaid patients, 2014
  - (36%) Average profit margin from Medicaid ED visits

Related Resource: Preserving the Community Safety Net
Learn the must-do strategies to minimize preventable utilization and see case studies of organizations that are succeeding under Medicaid risk. Publication available at advisory.com

Health Systems Can Amplify Impact Through Community Engagement

While hospitals and health systems have a clear role to play, no single stakeholder can ultimately solve addiction alone or suddenly reverse 20 years of ingrained prescribing behaviors. Only communities working in concert will be able to fully overcome this challenge. Providers can offer the greatest assistance for this community-wide effort in two pivotal ways.

First, providers are well positioned to capitalize on the current nationwide focus on the opioid epidemic to gain access to unprecedented funding for major opioid-related initiatives. This might include soliciting philanthropic dollars, negotiating with commercial payers, or collaborating with state agencies to secure state or federal funding.

States Already Offering Grants, Applying for Federal Dollars

$500K
Arizona tapped emergency fund to increase state education, prevention, treatment options

$4M
Alaska applying for two-year, federal grant to increase MAT\(^3\) availability

$15M
Alabama applying for two-year federal grant to create comprehensive opioid response plan

Second, providers can convene and educate local stakeholders, both to train non-affiliated clinicians and to gain broader community buy-in to destigmatize addiction and establish wrap around services. This final step will be necessary to construct a comprehensive community response and cement effective addiction prevention and treatment strategies for the long term.

<table>
<thead>
<tr>
<th>Key Stakeholders</th>
<th>Sample Tactics</th>
<th>UC Davis Online Education Program Results</th>
<th>Columbia Pacific CCO’s Summits(^2)</th>
</tr>
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<tbody>
<tr>
<td>Hospitals and health systems</td>
<td>In-person workshops</td>
<td>59% Are less likely to prescribe opioids</td>
<td>• Launched annual community-wide educational meetings in 2016</td>
</tr>
<tr>
<td>Emergency services</td>
<td>Online seminars</td>
<td>66% Are working to taper patients off opioids</td>
<td>• One county voted to open a needle exchange; four clinics now interested in offering MAT(^3)</td>
</tr>
<tr>
<td>Primary care and specialist physicians</td>
<td>Toolkits</td>
<td></td>
<td></td>
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<tr>
<td>Pharmacists</td>
<td></td>
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<tr>
<th>Government officials, agencies</th>
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<tr>
<th>Commercial payers</th>
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<th>Pharmaceutical companies</th>
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Law enforcement, drug courts, DEA\(^1\)
Regional summits
Community coalitions
Brochures, advertising

1) Drug Enforcement Administration.
2) Entity owned by CareOregon, Portland, OR.
3) Medication-assisted treatment.

Prioritizing Potential Provider Interventions

A Two-Part Strategy to Guide Provider Action

Given the potentially overwhelming nature of the challenge at hand, hospitals and health systems should not assume they will be able to do everything at once. Instead, they should use a two-pronged approach to prioritize possible interventions. First, they should consider what actions lay within their immediate sphere of influence. What they can most readily and directly achieve with a modest investment of resources?

Second, to ensure resources are being directed toward the areas of highest impact, providers should also consider local market factors. What does their community need most urgently? Advisory Board, in partnership with OptumLabs (a scientific research collaborative and co-innovation center supported by over 25 different partnerships with leading health care organizations), has created a data visualization tool to help leaders understand the current state of the opioid epidemic in counties nationwide across a range of dimensions.

The example to the right displays opioid prescribing patterns for counties in Ohio. In this image, darker shading signifies that fewer clinicians in that county are following CDC guidelines for prescribing opioids. This tool helps leaders identify and understand the highest impact interventions in specific counties.

For more information and a full description of OptumLabs, see page 31 of this briefing; for access to the tool, visit advisory.com

Source: OptumLabs; Health Care Advisory Board interviews and analysis.
More Than Just a First Response
Constructing a Comprehensive, Long-Term Strategy

Although providers must prioritize their initial responses to the opioid crisis, it is critical not to lose sight of the need for a more comprehensive strategy in the long run. OptumLabs, working in concert with a board of national experts, has developed the following set of key performance indicators (KPIs) to help leaders plan their strategic response to the opioid epidemic and measure the progress of their interventions.

<table>
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<tr>
<th>Domain Areas</th>
<th>Primary Outcome Measures</th>
<th>Secondary Process Measures</th>
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</table>
| Prevention                 | • New opioid fillers per 1000 enrollees  
• Initial opioid prescription compliant with CDC recommendations  
• New opioid fillers who avoid chronic use  
• Prevalence of opioid overdose per 100,000 enrollees                                                                                                                                                                                                 | • Initial opioid prescription is prescribed while patient is not exposed to benzodiazepines  
• Initial prescription is not for methadone  
• Initial opioid prescription is for short-acting formulation  
• Initial opioid prescription is for 50 MME/day or less  
• Initial opioid prescription is for a 7-day supply or less  
• No use of opioids for new low-back pain patients  
• No concurrent opioid and benzodiazepine use  
• Appropriate contact before second opioid prescription |
| Pain Management            | • Chronic pain treatment with opioids is optimally managed  
• Avoidance of breakthrough post-surgical pain leading to ED visit and new opioid prescription                                                                                                                                                                                                 | • Appropriate contact with provider among chronic opioid users  
• No ED visit for breakthrough pain among chronic opioid users  
• Evidence of non-opioid pharmacological treatment for pain among chronic opioid users  
• Evidence of non-pharmacological therapy for pain among chronic opioid users |
| Opioid Use Disorder Treatment | • Evidence of medication-assisted treatment (MAT) among patients with opioid use disorder (OUD) or opioid overdose (OD)  
• Prevalence of OUD per 100,000 person-years                                                                                                                                                                                                 | • Evidence of MAT following OD  
• Evidence of naloxone fill among patients with OUD or OD  
• No opioid prescription following any OUD or OD diagnosis |
| Maternal, Infant, and Child Health | • Percentage of infants with neonatal abstinence syndrome (NAS) born to mothers on MAT  
• Initial opioid prescription compliant with CDC recommendations for patients under 18y age                                                                                                                                                                                                 | • Prevalence of OD per 100,000 person-years (under 18y age)  
• Cases per 1,000 live births of infants born with NAS  
• New opioid fills per 1,000 enrollees (under 18 y age)  
• Prevalence of OUD per 1,000 person-years (under 18y age) |

For a full description of the KPIs, see pages 35-38 of this briefing; for access to the tool, visit advisory.com
Focusing on the Executive’s Perspective

The Strategic Guide to Confronting the Opioid Epidemic

Leaders, clinicians, and staff members across the health system will ultimately have to work together to achieve success against all four of the domains described on the previous page; their comprehensive nature requires comprehensive involvement. The first step, however, must come from the C-suite—the individuals who bear the responsibility of setting strategic direction and defining organizational culture. The following imperatives explore three strategic areas where health system executives must play an important role and the specific tactics they should employ.

Defining the C-Suite’s Role in:

1. Mobilizing an Addiction Prevention and Pain Management Strategy
   - Imperative 1: Commit to change from the C-suite
   - Imperative 2: Harness existing clinical standardization strategies
   - Imperative 3: Create opioid-specific education and protocols
   - Imperative 4: Empower patients to become part of the solution

2. Maximizing Opportunities to Deploy Addiction Treatment
   - Imperative 5: Base treatment strategy on expansion of MAT
   - Imperative 6: Capitalize on hospitalizations to begin treatment
   - Imperative 7: Incorporate MAT into existing outpatient assets
   - Imperative 8: Catalyze broader community access to treatment

3. Prioritizing Top Provider Intervention Opportunities
   - Imperative 9: Develop response based on local needs and span of organizational control

Source: Health Care Advisory Board interviews and analysis.
Mobilizing an Addiction Prevention and Pain Management Strategy
Health Systems Must Support Clinicians and Patients to Change Behavior

Providers and patients have a tangible opportunity to limit the spread of the opioid epidemic by working together to prevent new cases of opioid addiction. By prioritizing alternative means of pain management, they can reduce the prevalence of opioids in the community. Hospital and health system executives should ensure their organizations have the motivation, tools, and support to consistently and effectively reduce the risk of new addiction. Completing the following four steps will help empower clinicians to engage in safe opioid prescribing and use behaviors.

**Establishing Cross-System Opioid-Addiction Prevention and Pain Management**

1. **Commit to Change from the C-Suite**
   - Establish clear system-wide priorities

2. **Harness Existing Clinical Standardization Strategies**
   - Apply existing mechanisms of care variation reduction to the opioid response

3. **Create Opioid-Specific Education and Protocols**
   - Augment existing clinical standardization strategies to support clinician needs

4. **Empower Patients to Become Part of the Solution**
   - Offer patients resources within the clinic and the broader community

Source: Health Care Advisory Board interviews and analysis.
Imperative 1: Commit to Change from the C-Suite

Our Leadership Moment

Establish Clear System-Wide Priorities

Every hospital and health system should have a strategy for preventing new cases of addiction, and to signal the importance of this strategy executives must establish addiction prevention as a system-wide priority. For example, Intermountain Health Care’s CEO, Dr. Marc Harrison, made clear that achieving safer opioid prescribing is a leadership priority. Since his public declaration of a personal and system-wide commitment to smarter opioid prescribing practices, Intermountain has already begun to see positive early results, even as some service-line leaders are still in the process of implementing the new protocols.

System-Wide Opioid Reduction Pathway

Surgical service line leaders conducted a survey of 7K patients; learned 40% of pills go unused

CEO established opioid reduction as a cross-system priority

System leadership teams determined goal to reduce opioid prescriptions by 40% across acute conditions by 2019

Analytics team took four months to build a cross-system opioid prescription-tracking dashboard

Service line leaders tasked with developing team-specific protocols for prescription reduction

Case in Brief: Intermountain Health Care

- 22-hospital health system based in Salt Lake City, Utah
- Recognized that Utah consistently has one of the highest rates of opioid-related overdose in the country
- Pursuing a cross-system goal to reduce opioid prescriptions across acute conditions by 40% by the end of 2018

Promising Early Results

10% Reduction in tablets prescribed in primary care

32% Reduction in tablets prescribed in women’s and newborn’s care

“It’s time for courage and leadership on our part. I’m here to ask you for your full cooperation and your courage in addressing this issue in a very proactive way. We cannot fail to act in view of all the people afflicted by this nationwide epidemic.”

Marc Harrison, MD, President and CEO
Intermountain Health Care

Source: Intermountain, “Intermountain Leaders Address Utah’s Opioid Epidemic”, Health Care Advisory Board interviews and analysis.
Imperative 2: Harness Existing Clinical Standardization Strategies

No Need to Reinvent the Wheel

Apply Existing Mechanisms of Care Variation Reduction to the Opioid Response

As prescribers, clinicians serve as central partners, and improving and standardizing their prescribing behavior is critical to an effective addiction prevention strategy. To this end, executives should make use of the same care variation reduction strategies they would apply when standardizing other care processes:

- Build a strong, data-driven foundation with engaged frontline clinicians
- Consistently design, embed, measure, and redesign care standards
- Foster an organization-wide high-reliability culture

The opioid crisis is distinctly urgent, but the approach to improving prescribing behavior does not have to be built from the ground up.

Advisory Board Framework for Minimizing Care Variation at Scale

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Related Resource: The System Blueprint for Clinical Standardization
Learn the seven common principles that are foundational to best-in-class organizations’ success in setting consistent care standards across large and often dispersed footprints. Publication available at advisory.com.
Imperative 3: Create Opioid-Specific Education and Protocols

Acknowledging a Tricky Situation

Augment Existing Clinical Standardization Strategies to Support Clinician Needs

While harnessing existing care redesign processes is an important starting point, executives need to ensure their teams do not ignore the opioid-specific context. In particular, leaders should acknowledge the medical complexity of appropriate opioid use and the associated history of clinician miseducation, which has produced dangerous misconceptions. Executives must ensure that their clinician teams understand several critical facts:

- Though opioids may be effective for short-term acute pain, **no studies have confirmed opioids are the most effective option for long-term pain management, and they may even be harmful when compared with non-opioid agents**. Clinicians should strongly consider whether long-term opioids are the most appropriate treatment for chronic pain, especially for common orthopedic conditions such as back and extremity pain.
- Research has found no correlation between increased opioid prescriptions and increased HCAHP scores. In fact, a 2017 study found that **clinicians who reduced their opioid prescriptions did not experience any decrease in HCAHP scores**.
- Clinicians cannot guarantee that the individual receiving the opioid prescription is the one who will ultimately use the opioids. **Approximately 54% of individuals taking illegal opioids reported obtaining them through a relative or friend.**

Many hospital and health system leaders are fighting an uphill battle to correct these common misconceptions, while also instilling new prescribing behaviors. Even organizations with the most robust care redesign infrastructures should ensure that they also incorporate the following components when implementing opioid-specific protocols:

1. **Standardize Clinician Education**
   - Provide clinicians with **baseline education** to clear-up misconceptions, mitigate unintentional harms
   - Ensure clinicians know and understand CDC opioid-prescription guidelines
   - Provide clinicians with information on **alternative approaches to pain management**
   - **Update EMR defaults** to help clinicians conform to CDC standards
   - **Make PDMP¹ information** easily accessible (e.g., incorporated into EMR)

2. **Strive for Addiction-Free Prescribing**
   - **Create specific goals** to reduce prescriptions, change approach to pain management
   - **Bring clinicians to the table** to help develop clear, effective, safe prescribing standards
   - **Implement targeted protocols** to guide, support physician behavior
   - **Embed accountability mechanisms** to ensure compliance

### Leverage Technology to Streamline Appropriate Prescribing

**54% Reduction in average pills per prescription, 2016-2017, at Komi Health Care’s² ED after reducing EMR defaults**


¹ Prescribed Drug Monitoring Program. ² Pseudonym.
One Example of More Specific Clinical Standards

Excerpt from the CDC’s Guidelines for Prescribing Opioids for Chronic Pain

1. Opioids should be the treatment of last resort for chronic pain and should only be used if benefits for both pain and function are expected to outweigh patient risks. If opioids are used, they should be combined with non-pharmacologic therapy and non-opioid pharmacologic therapy, as appropriate.

2. Before starting and periodically during opioid therapy for chronic pain, clinicians should establish treatment goals with all patients, including realistic goals for pain and function, and should consider how opioid therapy will be discontinued if benefits do not outweigh risks. Clinicians should continue opioid therapy only if there is clinically meaningful improvement in pain and function that outweighs risks to patient safety.

4. When starting opioid therapy for chronic pain, clinicians should prescribe immediate-release opioids instead of extended-release/long-acting (ER/LA) opioids.

5. When opioids are started, clinicians should prescribe the lowest effective dosage. Clinicians should only cautiously prescribe dosages of ≥50 morphine milligram equivalents (MME)/day, and should avoid increasing dosage to ≥90 MME/day. For acute pain, clinicians should not prescribe for more than three days at a time.

6. Clinicians should evaluate benefits and harms with patients within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. Clinicians should evaluate benefits and harms of continued therapy with patients every 3 months or more frequently. If benefits do not outweigh harms of continued opioid therapy, clinicians should optimize other therapies and work with patients to taper opioids to lower dosages or to taper and discontinue opioids.

8. Before starting and periodically during continuation of opioid therapy, clinicians should evaluate risk factors for opioid-related harms. Clinicians should incorporate into the management plan strategies to mitigate risk, including considering offering naloxone when factors that increase risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages (≥50 MME/day), or concurrent benzodiazepine use, are present.

9. Clinicians should review the patient’s history of controlled substance prescriptions using state prescription drug monitoring program (PDMP) data to determine whether the patient is receiving opioid dosages or dangerous combinations that put him or her at high risk for overdose. Clinicians should review PDMP data when starting opioid therapy for chronic pain and periodically during opioid therapy for chronic pain, ranging from every prescription to every 3 months.

10. When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs.

11. Clinicians should avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible.

12. Clinicians should offer or arrange evidence-based treatment (usually medication-assisted treatment with buprenorphine or methadone in combination with behavioral therapies) for patients with opioid use disorder.

For the full list and explanation of CDC guidelines, visit [www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm](http://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm)

From Theory to Action

Case Studies in Engaging Frontline Prescribers

Gundersen Health System, based in La Crosse, Wisconsin, and Geisinger Health System, based in Danville, Pennsylvania, are two organizations that have effectively applied their existing care redesign infrastructure to build and deploy effective opioid-prescription protocols. Gundersen Health System encouraged clinician engagement by including diverse stakeholders in the protocol development process and by creating protocols that could effectively guide clinician action along every step of the care continuum.

Geisinger Health System made cross-system clinician performance more transparent, allowing clinicians to benchmark their opioid-prescribing behaviors against their peers. The system combined this data transparency with targeted provider interventions for outlier clinicians to provide more tailored education and elevate performance.

Geisinger Uses Data Transparency, Provider Education to Facilitate Culture Change

Case in Brief: Gundersen Health System
- Five-hospital health care system based in La Crosse, Wisconsin
- Identified over-prescription of opioids as a source of rising incidence of opioid misuse
- Pain clinic established committee to manage opioid efforts; eventually included other departments to develop prescription protocols and create an opioid patient registry

Case in Brief: Geisinger Health System
- 12-hospital system based in Danville, Pennsylvania
- Identified pain management prescriptions as a driver of opioid misuse and poor patient satisfaction
- Created a dashboard to track cross-system opioid prescriptions visible to all system clinicians; uses targeted interventions, offers resources to address outlier physicians

Clinicians cannot be the only actors in a successful addiction prevention strategy; patients must also play an important role. Patients, however, should not be expected to fulfill this responsibility alone. Hospital and health system executives should ensure they are facilitating collaboration among physician, nursing, and administrative leaders and charging them with the responsibility of providing patients with the education, accountability, and tools to practice safe opioid use. Gundersen Health System, for example, requires its clinicians to employ opioid-use contracts for all chronic pain patients. During the process of receiving and signing the contract, patients learn about the risks of opioids and the appropriate way to take them. It also holds patients accountable and provides clinicians with actionable steps if patients begin to demonstrate signs of opioid abuse.

Established Mutual Accountability

**Case in Brief: Gundersen Health System**

- Five-hospital health care system based in La Crosse, Wisconsin
- Identified over-prescription of opioids as a source of rising incidence of opioid misuse; created opioid-specific chronic pain management contracts

Gundersen Health Instituted Opioid Use Contracts

<table>
<thead>
<tr>
<th>Established Patient Expectations</th>
<th>Key Contract Components</th>
<th>Ensured Consequences of Noncompliance</th>
</tr>
</thead>
</table>
| Patients required to sign contract before receiving opioid treatment | - Treatment goals  
- Medication use, refill guidelines  
- Consequences of breaking contract | Providers empowered to change treatment if patients fail to meet expectations |

In addition to opioid-use contracts, Intermountain Health Care also provides patients with the tools to be successful outside the clinic. They have introduced a comprehensive “Speak Out, Opt Out, Throw Out” campaign to educate members of the community on appropriate opioid use and to provide a safe way to dispose of excess drugs.

**Case in Brief: Intermountain Health Care**

- 22-hospital health system based in Salt Lake City, Utah; owns SelectHealth insurance plan
- Pursuing a cross-system goal to reduce opioid prescriptions, including educating community members and encouraging safe drug disposal

**Intermountain Introduced Speak Out, Opt Out, Throw Out Initiative**

**Funded Drop Boxes**

Established 25 secure opioid drop boxes in Intermountain pharmacies; funded drop boxes for six nonprofit clinical partners

**Developing Disposal Bags**

Bags will be distributed to patients and include instructions on how to dispose of excess opioids and a map of drop box locations

Maximizing Opportunities to Deploy Addiction Treatment
Once providers have started the process of building an addiction-prevention program, the next step is to expand assistance for individuals already suffering from addiction. The executive’s role in this work is to identify the most effective clinical components of addiction treatment, create triage protocols that ensure the right care is being delivered appropriately throughout the system, and invest resources in expanding broader community access. This section outlines four imperatives for executives to develop a robust addiction treatment strategy.

**Establishing a Comprehensive Addiction Treatment Strategy**


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1) Medication-assisted treatment.

Source: Health Care Advisory Board interviews and analysis.
Adopting the Proven Approach

Medication-Assisted Treatment is the Gold Standard in Treating Addiction

Medication-assisted treatment (MAT) is the use of medications such as methadone or buprenorphine to wean patients off more-potent painkillers, such as oxycodone or heroin. It is a critical component of any strategy for treating opioid addiction because it eliminates withdrawal symptoms and significantly reduces the chances of relapse or overdose. It is most frequently paired with a non-pharmacological treatment, such as therapy to support psychosocial and psychological needs. Hospitals and health systems play a pivotal part in providing MAT because it must always be prescribed and must occasionally also be administered on a daily basis. Executives should, therefore, base their larger addiction treatment strategy around the prerogative to increase regular, reliable access to MAT.

Benefits of Medication-Assisted Treatment

- **50%** Reduction in mortality among addiction patients
- **29%** Lower overall annual health plan costs of those on MAT compared to those with no medication
- Reduces risk of relapse
- Helps prevent spread of infectious diseases like HIV
- Eliminates withdrawal symptoms
- Does not induce euphoria; less attractive for abuse
- Does not reduce functionality

Considerations of Medication-Assisted Treatment

- Three different methods of delivering MAT have different federal and state regulations
- Overdose and abuse still possible
- Cautious prescription practices still necessary
- Additional research necessary to determine characteristics of most effective form of MAT
- Still often faces stigma in local communities

Respected by the Scientific Community

“Medication-assisted treatment saves lives while increasing the chances a person will remain in treatment and learn the skills and build the networks necessary for long-term recovery.”

Michael Botticelli, Executive Director, Boston Medical Center’s Grayken Center for Addiction Medicine

Develop Protocols Specific to High-Need Populations

The most effective opioid-addiction treatment strategy should begin in the hospital when individuals present with opioid use disorder or after an overdose. The inpatient setting is within the health system’s direct control and already has the necessary medical and pharmaceutical capabilities. Additionally, individuals hospitalized as a result of substance abuse may be at a moment of increased emotional openness to beginning treatment and are not experiencing any of the typical environmental stressors that might otherwise interfere with their success.

Hospital and health system executives should charge their service-line leaders, often the director of the emergency department or intensive care unit, with the responsibility of establishing a set of protocols that are triggered when a patient presents with an opioid overdose or opioid use disorder to ensure that those individuals begin treatment and are not prescribed more opioids to manage their pain. Effective protocols should be flexible enough to adapt to the needs of particularly high-risk or high-need populations. For example, the care pathway for pregnant women should include follow-up care due to their higher-risk pregnancies and the probability of neonatal abstinence syndrome.

Oregon Health & Science University (OHSU) recognized the importance of the inpatient opportunity when it implemented the Improving Addiction Care Team (IMPACT) model, which is designed to get inpatients into treatment as quickly as possible. A helpful component of the model is that OHSU pairs patients with peers living in recovery. These individuals serve as a powerful force to help keep patients engaged in treatment even after they leave the hospital.

**Case in Brief: Oregon Health & Science University**
- Three-hospital academic medical center based in Portland, Oregon
- Identified unique opportunity to improve care by beginning treatment during hospitalization
- Launched Improving Addiction Care Team (IMPACT) model in July 2015

### OHSU Care Team Identified Rare Treatment Opportunity

1. Recognized hospitalization is a reachable moment to initiate and coordinate addiction care
2. Developed capacity to begin treatment in hospital through an inter-professional hospital addictions team in collaboration with community partners

### System Implemented IMPACT Model

- Assembled an inter-professional team including peers with lived experience in recovery (2), socials workers (2), a nurse practitioner, and physicians (1.5 FTE)
- Treat 10-15 hospitalized adults at any time focusing on patients admitted to medical and surgical services with substance use disorder

### IMPACT Model Improving Patient Outcomes and Engagement

- 521 of 600 Patients seen from July 2015-September 2017 engaged with IMPACT in the hospital
- 61% Of patients initiated medications for addiction treatment in the hospital
- 68% Of patients were referred to addiction treatment in the community post-discharge
- Hospital staff reported improved morale, disease understanding, and patient care experience

Source: Englander H et al., “Planning and designing the Improving Addiction Care Team (IMPACT) for hospitalized adults with substance use disorder,” Journal of Hospital Medicine, May 2017; Health Care Advisory Board interviews and analysis.
Imperative 7: Incorporate MAT into Existing Outpatient Assets

Meeting Patients Where They Are

Mobilize Existing System Resources to Treat Opioid Addiction

Inpatient addiction treatment is an important foundation for a successful treatment strategy, but hospitals and health systems must also extend beyond the hospital setting to maximize impact in the broader community. Many individuals suffering from debilitating opioid addiction or overdose never present at a hospital. Additionally, hospital-based clinicians need to have an outpatient clinic to which they can refer patients after discharge through which they can continue the treatments initiated during inpatient stays. As an added benefit, including outpatient treatment helps decrease opioid-related ED and ICU costs and protects inpatient capacity for the highest acuity cases.

The most cost-effective approach to expanding MAT access is to incorporate it into existing outpatient care settings, especially primary care, pain management, or community health clinics. Geisinger Health System did this by upskilling existing staff, specifically training pharmacists already working in primary care clinics to become pain-management specialists. As a result, Geisinger saw a significant decrease in emergency department visits over a 12-month period.

Alternatively, Lapis Health, a pseudonymed organization, hired new staff (community addiction specialists) whom they deployed to existing local health centers and school-based clinics. This increase in outpatient options opened up capacity at Lapis’s inpatient treatment center for the most severe cases.

Geisinger Upskilling Existing Clinical Pharmacists

- Trained pharmacists embedded in primary care clinics on pain management and recognition for risk of addiction
- Now have nine pharmacist pain-management specialists able to manage patient cases collaboratively with primary care and specialty physicians
- Fewer ED visits over 12 months from patients working with a trained pharmacist

Lapis Health: Building Out Staffing at Current Community Clinics

- In the past year, staffed community addiction specialists at local health centers and school-based clinics
- Now able to transition stable patients back to the community, expanding capacity at the hospital’s central treatment center

Case in Brief: Geisinger Health System

- 12-hospital system based in Danville, Pennsylvania, with 58 existing pharmacists embedded in primary care clinics
- Implemented pharmacist pain-management training program

Case in Brief: Lapis Health

- Integrated delivery system in the West
- Staffed certified addiction counselors in four community health centers and social workers with addiction specialties in six school-based clinics

Source: Health Care Advisory Board interviews and analysis.

1) Pseudonym.
Finally, many hospitals and health systems serve markets that face a significant gap in treatment options and lack sufficient addiction treatment assets to meet local demand. Leaders in these markets, however, should not immediately act to fill in the missing services unilaterally. Instead, they should first evaluate options for capitalizing on the relative abundance of opioid-related funding from city, state, or federal governments, as well as local philanthropies. The opioid crisis is a community challenge and, just as hospitals and health systems can help the community more broadly through greater engagement and education, the community can help the health system fund the development of new clinical capabilities. This is especially true in cases where facility expansion may not be financially viable for a hospital or health system alone.

For example, Boston Medical Center observed a market gap—in this case an opioid-specific urgent care clinic—and worked with the Massachusetts Department of Public Health to expand treatment options. Boston Medical Center decided to collocate the new clinic with the existing medical center, which allows patients to be referred directly to the clinic from the hospital when presenting at the ED or after discharge. Clinic staff can also use the hospital’s resources whenever they have a patient with an acute care need.

**Boston Medical Center Established Opioid Urgent Care with State Grant Funding**

<table>
<thead>
<tr>
<th>Traditional Acute Services at Medical Center</th>
<th>Co-located Opioid Urgent Care Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED</td>
<td>MAT-Trained nurses, addiction specialists</td>
</tr>
<tr>
<td>Lab</td>
<td>Alcohol, drug counselors</td>
</tr>
<tr>
<td>Surgical care</td>
<td>$2.9M Massachusetts Dept. of Public Health funding over four years</td>
</tr>
<tr>
<td></td>
<td>1,275 Patients treated in program’s first year</td>
</tr>
</tbody>
</table>

**Case in Brief: Boston Medical Center**

- 496-bed hospital based in Boston, Massachusetts
- Launched the Faster Paths to Treatment Opioid Urgent Care Program in August 2016
- Staffed with seven state-licensed alcohol and drug counselors, five buprenorphine-waivered addiction physician specialists, three fellows, and one nurse addiction specialist
- Counselors conduct psychosocial exams to place patients in appropriate treatment

Source: Health Care Advisory Board interviews and analysis.
Prioritizing Top Provider Intervention Opportunities
Introduction to OptumLabs’ Key Performance Indicators

A Strategic Framework to Address the Opioid Epidemic

As described in the preceding two chapters, every hospital and health system should develop a strategic approach to preventing and treating addiction. Leaders, however, are unlikely to be able to deploy their full strategies to confront the opioid epidemic all at once. They will need to prioritize potential elements of their organization’s intervention strategy. The best way to do this is to take a two-pronged approach.

First, hospitals and health systems should identify the areas of greatest local need. For example, leaders might find that clinicians in a particular county are unaware of the CDC’s opioid prescribing guidelines or they might observe that a specific county has very low access to MAT. Second, provider executives should consider what actions lie within their organizations’ direct scope of control.

To help leaders effectively prioritize interventions for their local market conditions, OptumLabs, a scientific research collaborative and co-innovation center supported by over 25 different partnerships with leading health care organizations, has leveraged its de-identified commercial and Medicare Advantage claims data to create a comprehensive framework to facilitate providers’ understanding of their own regional needs and the best ways to intervene. The tool shows county-by-county data sorted into relevant measures across four major domains: prevention; pain management; addiction treatment; and maternal, infant, and child health. Executives should combine this information with their own specific scope of control to prioritize components of their opioid intervention strategy.

To facilitate a holistic understanding of this evaluative framework, this section examines early insights from this project, answers key questions surrounding the creation of this tool and the key performance indicators (KPIs), and provides specific definitions and descriptions for each of the 29 measures included in the framework.

Prioritizing Opioid-Response Interventions

1) Area of Greatest Local Need
2) Primary Initial Interventions
3) Span of Organizational Control

For more information and to access this tool, visit advisory.com
Early Insights from the KPI Measures

Initial Data Analysis Consistent with Best Practice Research Findings

Early analysis of the 2016 national OptumLabs KPI data set provides additional evidence of the lack of comprehensive addiction prevention, pain management, and addiction treatment strategies in the United States. Hospital and health system executives have a clear opportunity to improve community well-being by supporting clinician behavior change and expanding access to treatment options.

1 Dramatic Regional Variability

The clinical areas of greatest need vary significantly from region to region, especially in clinician prescribing patterns. For example, in some regions, physicians adhere to CDC guidelines for prescription duration but not dosage amount. In other markets, however, the reverse occurs; clinicians successfully meet dosage amount goals but not prescription duration. Although these prescribing patterns are influenced by state-specific regulations that set standards for prescription duration or dosage, providers should ensure they understand the specific needs of their local region when prioritizing interventions and crafting clinician communications.

2 Pervasive Underutilization of Non-opioid Approaches to Pain Management

Despite an emerging national consciousness of the potential harms of opioid over-prescription, this data suggest opioids often remains the default option for treating chronic pain. To reverse this trend, hospitals and health systems must first work to increase access to alternative forms of pain management, both pharmacological and non-pharmacological. These may include chiropractic intervention, physical therapy, yoga, acupuncture, cognitive behavioral therapy, mindfulness therapy, etc. Next, clinicians need to prescribe these alternatives to prevent new cases of opioid abuse; complement medically necessary, low-dose opioid prescriptions; and help individuals suffering from chronic pain, while also treating their opioid addiction.

3 Insufficient Implementation of Medication-Assisted Treatment (MAT)

Even as prevalence of opioid use disorder and opioid overdose has increased over the past several years, access to MAT has not correspondingly increased. Providers must make every effort to increase the number of trained staff able to administer MAT and connect patients diagnosed with opioid use disorder to medication-assisted treatment, especially following an overdose or while a patient remains in the hospital setting.

Source: OptumLabs; Health Care Advisory Board interviews and analysis.
Key Questions on the KPI Framework

1. How was the KPI framework developed?

   OptumLabs leveraged the expertise of internal leaders (from within its pharmacy; complex conditions; behavioral health organizations; and Medicare, Medicaid, and commercial insurance business) and assembled a 15-person panel of national public health experts, including representatives from the Centers for Disease Control and Prevention (CDC) and the Substance Abuse and Mental Health Services Administration (SAMHSA). The panel was chaired by Thomas McLellan, PhD, chair of the Treatment Institute's Board and University of Pennsylvania Medicine Professor Emeritus of Psychology, and by Mark Wallace, MD, Professor of Clinical Anesthesiology and Chair of the Division of Pain Medicine at University of California, San Diego Medical Center. The panel worked with OptumLabs across five months to define, develop, test, and evaluate the 29 claims-based measures.

2. How is the KPI framework organized?

   To capture the full extent of the opioid crisis, the panel identified four domains for providers to evaluate as they develop a holistic response: prevention, appropriate acute and chronic pain treatment, opioid use disorder (OUD) treatment, and maternal/child health. Across these four domains, the expert panel developed 29 key performance indicators (divided into primary outcome measures and secondary process measures). Taken together, these KPIs help providers understand the multidisciplinary approach necessary to curb the opioid epidemic and mitigate its harms. They also provide clear metrics of success, which leaders can use to prioritize potential interventions based on local market needs and measure progress once leaders deploy their selected interventions.

3. What data were used to create and evaluate the KPIs?

   The OptumLabs KPIs were developed as performance indicators for relevant populations for a calendar-year period. Population denominators vary by measure: with a few exceptions, 12 months of continuous medical and pharmacy coverage were required for reporting; for some indicators (those that involve new opioid prescriptions) continuous pharmacy coverage for the previous 12 months was required; and finally, some measures were applied to populations with particular characteristics (e.g., new-onset low-back pain or chronic opioid use). All indicators were developed using administrative claims data from the OptumLabs Data Warehouse (OLDW). This robust data set includes de-identified integrated pharmacy, medical claims, and enrollment data from a geographically diverse population of approximately 150 million United States residents currently or previously enrolled continuously for at least two years in commercial or Medicare Advantage insurance programs. Records were excluded for individuals with evidence of active cancer treatments, in long-term or palliative care, or under the age of 18 (except under the maternal/child health domain).

4. What next steps are planned for the KPI framework?

   OptumLabs plans to reconvene the same expert panel in June 2018 to further refine and amend the outcome and process measures, while maintaining the same four central domains. Future iterations on the KPIs will likely continue past 2018 as our understanding of the epidemic’s many dimensions grows and new areas are identified as important drivers of successful intervention.

Source: OptumLabs; Health Care Advisory Board interviews and analysis.
## Primary Outcome Measures

<table>
<thead>
<tr>
<th>Measure Number</th>
<th>Measure Name</th>
<th>Detailed Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New opioid fills per 1,000 enrollees (lower values are better)</td>
<td>For every 1,000 enrollees having both medical and pharmacy benefits, how many had a new opioid prescription in the calendar year (a new opioid prescription is defined as no evidence of an opioid prescription 12 months prior to the earliest detected claim in the reporting period).</td>
</tr>
<tr>
<td>2</td>
<td>Initial opioid prescription compliant with CDC recommendations</td>
<td>Composite score indicating compliance with the CDC opioid prescribing guidelines that can be codified in claims data (measures 5-9, below). Numerator includes new opioid prescriptions that are compliant on all 5 CDC indicators; the denominator includes new opioid prescriptions in the calendar year.</td>
</tr>
<tr>
<td>3</td>
<td>New opioid fillers who avoid chronic use</td>
<td>Proportion of enrollees with a new opioid fill in a calendar year who do not become chronic opioid users in that year. Chronic opioid use is defined as: 1) a supply of opioids for 90 days or more AND 2) either a supply of opioids for 120 days or more or 10 or more prescription fills.</td>
</tr>
<tr>
<td>4</td>
<td>Prevalence of opioid overdose per 100,000 enrollees (lower values are better)</td>
<td>The number of opioid overdoses for every 100,000 person-years in the reporting period. A maximum of one overdose per person-year is counted.</td>
</tr>
</tbody>
</table>

## Secondary Process Measures

<table>
<thead>
<tr>
<th>Measure Number</th>
<th>Measure Name</th>
<th>Detailed Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Initial opioid prescription is prescribed while patient is not exposed to benzodiazepines</td>
<td>Percentage of new opioid prescriptions filled that are prescribed for individuals not already exposed to benzodiazepines. The combination of benzodiazepines and opioids can be a safety risk. A component of measure 2 (compliance with CDC guidelines).</td>
</tr>
<tr>
<td>6</td>
<td>Initial opioid prescription is not for methadone</td>
<td>Percentage of new opioid prescriptions that are not for methadone. Methadone should not be first line therapy for pain because it is both a long-acting opioid and is intended for severe pain. A component of measure 2 (compliance with CDC guidelines).</td>
</tr>
<tr>
<td>7</td>
<td>Initial opioid prescription is for short-acting formulation</td>
<td>Percentage of new opioid prescriptions that are for short-acting formulations (long-acting opioids are not recommended as first-line therapy). A component of measure 2 (compliance with CDC guidelines).</td>
</tr>
<tr>
<td>8</td>
<td>Initial opioid prescription is for 50 MME/day or less</td>
<td>Percentage of new opioid prescriptions written for less than 50 Morphine Milligram Equivalents per day, a guideline aimed at encouraging lower initial dosages to manage opioid treatment risk. A component of measure 2 (compliance with CDC guidelines).</td>
</tr>
<tr>
<td>9</td>
<td>Initial opioid prescription is for a 7-day supply or lower</td>
<td>Percentage of new opioid prescriptions written for a 7-day supply or less, a guideline aimed at encouraging more frequent patient-physician interaction and managing opioid treatment risk. A component of measure 2 (compliance with CDC guidelines).</td>
</tr>
<tr>
<td>10</td>
<td>No use of opioid for new low-back pain patients</td>
<td>Percentage of enrollees with a new episode of low-back pain who do not receive an opioid prescription within the first 14 days of diagnosis. A new episode of low-back pain is defined as no claims-based evidence of low-back pain or an opioid in the 6 months preceding earliest diagnosis. The American College of Physicians recommends alternative therapies and the use of opioids only as a last option for low-back pain.</td>
</tr>
<tr>
<td>11</td>
<td>No concurrent opioid and benzodiazepine use</td>
<td>Percentage of opioid users (those who have at least 2 fills or 15 days’ supply for opioids in the calendar year), who do not also have concurrent exposure to benzodiazepines. Concurrent opioids and benzodiazepines exposure may be a safety risk. This measure is applicable to both prevalent and new opioid use, in contrast to measure 5, which applies to new opioid fills only.</td>
</tr>
<tr>
<td>12</td>
<td>Appropriate contact with provider before second opioid prescription</td>
<td>Percentage of new opioid users with a second fill during the calendar year, who had physician contact prior to this second fill. Physician contact was assumed to be related to the second opioid prescription if it occurred after the first fill date and sometime in the three days prior to the second fill date. Both in-person and telemedicine visits were included.</td>
</tr>
</tbody>
</table>
# KPI Measure Definitions: Pain Management

## Primary Outcome Measures

<table>
<thead>
<tr>
<th>Measure Number</th>
<th>Measure Name</th>
<th>Detailed Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Chronic pain treatment with opioids is optimally managed</td>
<td>Composite indicator of how well pain is managed among chronic opioid users. Measures 15-18 must all indicate well managed pain for the composite to indicate well-managed pain overall. Chronic opioid use is defined as: 1) a supply of opioids for 90 days or more AND 2) either a supply of opioids for 120 days or more or 10 or more prescription fills.</td>
</tr>
<tr>
<td>14</td>
<td>Avoidance of breakthrough post-surgical pain leading to ED visit and new opioid prescription</td>
<td>Percentage of surgical discharges, where the patient did not have both 1) an ED or urgent care visit during the 15 days following discharge from surgery and 2) at least one opioid prescription on the date of the ED/urgent care visit AND within 15 days of surgical discharge. This measure is aimed at promoting appropriate pain treatment post-surgery.</td>
</tr>
</tbody>
</table>

## Secondary Process Measures

<table>
<thead>
<tr>
<th>Measure Number</th>
<th>Measure Name</th>
<th>Detailed Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Appropriate contact with provider among chronic opioid users</td>
<td>Percentage of chronic opioid users who saw a provider at least once every 3 months. The CDC 2016 opioid prescribing guidelines recommend patient-physician contact regarding opioid use at least every 3 months. A component of composite measure 13 (chronic pain is well-managed).</td>
</tr>
<tr>
<td>16</td>
<td>No ED visit from breakthrough pain among chronic opioid users</td>
<td>Percentage of chronic opioid users who presented at the ED with a primary diagnosis of pain. A component of composite measure 13 (chronic pain is well-managed).</td>
</tr>
<tr>
<td>17</td>
<td>Evidence of non-opioid pharmacological treatment for pain among chronic opioid users</td>
<td>Percentage of chronic opioid users who also had evidence of non-opioid pharmacological treatments for pain (e.g. NSAIDs, Lyrica). Note that over-the-counter pain remedies (e.g. aspirin, Novocain patches) are not captured in administrative claims. A component of composite measure 13 (chronic pain is well-managed)</td>
</tr>
<tr>
<td>18</td>
<td>Evidence of non-pharmacological therapy for pain among chronic opioid users</td>
<td>Percentage of chronic opioid users who also had medical claims with CPT or HCPC codes identifying non-pharmacologic treatments for pain (e.g., chiropractic care, acupuncture, physical therapy, TENS). It should be noted that patients may be accessing non-pharmacologic therapies outside the benefits of their current health insurance plans (e.g., massage therapy). A component of composite measure 13 (chronic pain is well-managed).</td>
</tr>
</tbody>
</table>

---

1) Transcutaneous electrical nerve stimulation.
# KPI Measure Definitions: Opioid Use Disorder (OUD) Treatment

<table>
<thead>
<tr>
<th>Measure Number</th>
<th>Measure Name</th>
<th>Detailed Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Evidence of medication-assisted treatment (MAT) among patients with opioid use disorder (OUD) or opioid overdose (OD)</td>
<td>Percentage of patients with a diagnosis of OUD or OD and at least one claim for MAT therapy any time in the calendar year. Evidence of MAT includes drugs used only in MAT: buprenorphine (tablets and subdermal implant only), buprenorphine/naloxone (any formulation), naltrexone extended release injection (brand name: Vivitrol); and drugs used for other indications, but identified as MAT by dose/dosage form (methadone oral, naltrexone oral).</td>
</tr>
<tr>
<td>20</td>
<td>Prevalence of OUD per 100,000 person-years (lower values are better)</td>
<td>Number of cases of opioid use disorder per 100,000 person years in the reporting period. Each enrollee contributed a maximum of one case of OUD, even if they had multiple episodes of care.</td>
</tr>
</tbody>
</table>

## Secondary Process Measures

<table>
<thead>
<tr>
<th>Measure Number</th>
<th>Measure Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Evidence of MAT following OD</td>
<td>Percentage of enrollees with evidence of MAT on the same date or immediately following OD.</td>
</tr>
<tr>
<td>22</td>
<td>Evidence of naloxone fill among patients with OUD or OD</td>
<td>Percentage of patients with evidence of naloxone on or after the earliest detected OUD or OD claim. Naloxone access is a risk-mitigation effort aimed at reducing overdose deaths.</td>
</tr>
<tr>
<td>23</td>
<td>No opioid prescription following any OUD or OD diagnosis</td>
<td>Percentage of OUD or OD patients who have not filled an opioid prescription on or after the earliest claim for OD, OUD, or evidence of MAT. Opioids that are also used in MAT therapy do not qualify.</td>
</tr>
</tbody>
</table>
### Primary Outcome Measures

<table>
<thead>
<tr>
<th>Measure Number</th>
<th>Measure Name</th>
<th>Detailed Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Percentage of infants with neonatal abstinence syndrome (NAS) born to mothers on MAT</td>
<td>Percentage of infants with NAS who are born to mothers who are on MAT. Pregnant woman who are addicted to opioids and are on MAT typically deliver babies who will be diagnosed with NAS (expected), which can be treated in the hospital.</td>
</tr>
<tr>
<td>25</td>
<td>Initial opioid prescription compliant with CDC recommendations for patients under 18</td>
<td>Composite score indicating compliance with the CDC opioid prescribing guidelines that can be codified in claims data. Identical to measure 2, but specifically for enrollees 18y age and younger. Numerator includes new opioid prescriptions that are compliant on all 5 CDC indicators; the denominator includes new opioid prescriptions in the calendar year.</td>
</tr>
</tbody>
</table>

### Secondary Process Measures

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</thead>
<tbody>
<tr>
<td>26</td>
<td>Prevalence of OD per 100,000 person-years under 18 (lower values are better)</td>
<td>The number of opioid overdoses for every 100,000 person-years in the reporting period among enrollees under 18 years of age. A maximum of one overdose per person is counted.</td>
</tr>
<tr>
<td>27</td>
<td>Cases per 1,000 live births of infants born with NAS (lower values are better)</td>
<td>Percentage of live births diagnosed with neonatal abstinence syndrome. NAS is more common in the Medicaid population; data in the OptumLabs includes commercially insured children and does not include Medicaid enrollees.</td>
</tr>
<tr>
<td>28</td>
<td>New opioid fills per 1,000 enrollees under 18 (lower values are better)</td>
<td>For every 1,000 enrollees having both medical and pharmacy benefits, how many had a new opioid prescription in the calendar year (a new opioid prescription is defined as no evidence of an opioid prescription 12 months prior to the earliest detected claim in the reporting period). Identical to measure 1, but for enrollees 18y age and younger</td>
</tr>
<tr>
<td>29</td>
<td>Prevalence of OUD per 1,000 person-years under 18 (lower values are better)</td>
<td>Number of cases of opioid use disorder per 1,000 person-years in the reporting period. Each enrollee contributed a maximum of one case of OUD, even if they had multiple episode of care.</td>
</tr>
</tbody>
</table>
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