

How Dimensional Insight Analytics
Is Used to Help Combat the Opioid Epidemic

Introduction

The statistics are alarming. According to the Centers for Disease Control and Prevention, since 1999, the number of drug overdose deaths involving opioids has increased five-fold. More than 130 Americans die every day from opioid use. The numbers indicate a growing problem. But what if numbers could also provide the solution?

Dimensional Insight's analytics platform can enable government agencies and healthcare providers to identify trends in the data and make a difference in the battle against the opioid epidemic. Let's examine how.

Moving from trends to intervention

At the most basic level, an analytics solution can help organizations—from hospitals to health departments—look at trends in opioid use. That means that users can examine whether opioid use has increased over several quarters or several years. That information can be broken down by patient, by provider, or by dispenser. A more advanced analytics solution, such as Dimensional Insight's platform, can help users go deeper into the numbers and manipulate the data in ways that can enable interventions instead of just looking at trends.

Most states have some kind of prescription drug monitoring program, but the prescriptions they monitor can vary. If a state is monitoring Schedules II through V, covering all thoroughly controlled substances, it could be dealing with tens of thousands of records per day, and millions of records per year. A key data point is Schedule II opioids, considered to be at the highest risk for misuse or abuse. These include drugs such as opium, morphine, codeine, oxycodone, and fentanyl.



Measuring morphine milligram equivalents

One way to assess risk of misuse or abuse, or even death, is to calculate the average daily MME of drugs and see which patients exceed certain MME thresholds. MME stands for morphine milligram equivalents and it is the standardized measurement used across all opioids, since they are not the same in terms of their strength. This provides a standard that prescribers are easily able to understand instead of having to calculate the potency of specific drugs. According to the CDC, patients who are prescribed more than 50 MME per day increase their risk of overdose by at least two times the risk of those prescribed fewer than 20 MME per day.

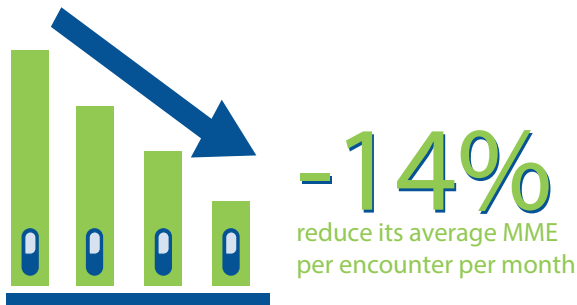
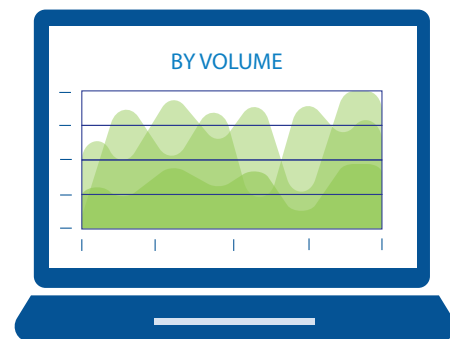
Calculating the average daily MME, though, when dealing with tens of thousands of records a day, can be complex. Dimensional Insight's analytics platform can take the millions of opioid prescriptions generated and convert the units to the average daily MMEs per day per patient. And if a certain drug product alters the MME for any reason, Dimensional Insight will allow the user to change the formula with exclusion criteria.

How can we use this data?

Opioid data can be examined at the state, hospital, and provider levels in order to enact change. Here's how users at all three levels have used Dimensional Insight analytics.

State level

Some state organizations have used analytics to see the volume of opioids that pharmacies are dispensing. They also look at the volume of opioids that healthcare providers prescribe. This enables them to spot prescribers whose volume might be far above the rest, or whose volume might not correlate with what is in line with his or her specialty. State agencies are also able to look at the data by municipality. This is helpful in terms of identifying areas in the state where there might be a larger opioid problem. Various agencies and healthcare providers can then work in tandem to provide more geographically focused programs in that area.



Hospital level

Hospitals use Dimensional Insight to examine the prescribing patterns of their physicians. They can examine which providers or specialties are prescribing the most opiates. They can also track metrics such as the average MME per encounter per month. For example, EvergreenHealth in the Seattle area was able to reduce its average MME per encounter per month by 14% due to the insights that a careful examination of the data provided.

Provider/prescriber level

Healthcare professionals can use Dimensional Insight to monitor their own prescribing patterns, and compare them to those of their peers. They can also look up whether other providers prescribed benzodiazepines (sedatives such as Valium, Xanax, and Klonopin) to patients. These drugs, when combined with opioids, lead to a higher risk of overdose. In fact, the National Institutes of Health say that 30% of all opioid overdoses involve some type of benzodiazepine.



Strong technology infrastructure required

Of course, when you're talking about tens of thousands of data points every day—equating to millions per year—you need a strong technology infrastructure to support all of this. Dimensional Insight's technology is ideal for this type of analysis because its columnar database technology processes the data quickly—in just a fraction of the time of row-based queries—and provides fast access to various manipulations of the information. It can also handle more complex calculations. For example, there are various ways of calculating MMEs, from simple (weighted average) to more complex (accounting for overlapping days), and Dimensional Insight performs both types with ease.

Organizations that have successfully implemented Dimensional Insight technology to help combat the opioid epidemic are already seeing positive results from their efforts. For example, one state agency that is a Dimensional Insight customer has been able to reduce the number of Schedule II prescriptions in its state by 17% since 2013. However, there is still a lot of work that needs to be done. Analytics can help provide the right insight into trends and concerning data, but it's up to everyone —government agencies, healthcare providers, pharmacies, patients, community services—to come together to take action to combat this growing and deadly crisis.

About Dimensional Insight

Dimensional Insight® is a leading provider of analytics, data management, and performance management solutions, offering a complete portfolio of capabilities ranging from data integration and modeling to sophisticated reporting, analytics, and dashboards. The company is a seven-time Best in KLAS winner in healthcare business intelligence and analytics, most recently ranking #1 in 2020. Founded in 1989, Dimensional Insight has thousands of customer organizations worldwide. Dimensional Insight consistently ranks as a top performing analytics organization by customers and industry analysts in its core market segments including healthcare, manufacturing, and beverage alcohol. For more information, please visit <https://www.dimins.com/>.

