

CASE STUDY



The Evidence is in Numbers

Tucson Medical Center Deters Drug Diversion with RxAuditor Investigate™



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PRIMARY INTENDED OUTCOME

The mission at Tucson Medical Center (TMC) states to provide exceptional health care with compassion. In 2018, the Director of Pharmacy, Claudia Koreny, PharmD, knew the pharmacy department could do even more to uphold that pledge by creating the safest environment possible.

TMC did not have diversion analytics tools to help Koreny achieve her goal. This case study analyzes the elements involved in advancing a drug diversion program. By automating the prevention, assessments, and detection of any drug diversion, TMC could better protect patients, safeguard TMC's stellar reputation, and reduce manual labor and costs.

Tucson Medical Center is a nonprofit community hospital with more than 600 licensed beds. It has served Southern Arizona as its leading provider for medical care for 75 years. In January 2018, the leadership team took a stronger approach to drug diversion.

Koreny's strategy for broader safety and prevention initiatives entailed a systems and analytics approach. The existing method of diversion discovery by time-consuming manual audits was antiquated. The intensive time and labor, especially for nurse managers, took away from being with the team and patients. Yet, purchasing a multi-tiered analytics platform had to show value by quantifiable benefits over costs.

Value was also measured by a system that can target risk areas across TMC at any level of responsibility. Koreny worked with Medication Safety Officer, Zachary Hodges, PharmD, BCCCP, to map out the requirements for a system.

For Hodges, the approach to automating diversion prevention aids TMC's zero-tolerance mentality because this act is a life-threatening offense with multiple victims from the patient who is not administered the drug, to the employees who perform additional work, and to the hospital that could lose its reputation and community trust.

THE CHALLENGE

Drug diversion is one of the major threats occurring in hospitals today. The numbers tell an alarming story about the state of drug diversion in the United States. Statistics from both the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) and the American Nurses Association (ANA) indicate that approximately 10 percent of health care workers are abusing drugs.

Hospitals are on the frontlines of the opioid crisis in trying to solve the epidemic and addressing it in their facility. Even before COVID-19, U.S. drug overdose deaths reached a record high of 70,980 in 2019, increasing 4.6% from 2018.¹ The pandemic creates new risks to Americans impacted by substance use disorder.² These statistics are worrisome to hospital leaders who know first-hand the growing prevalence of drug diversion in healthcare facilities and diverters' savviness to prevent detection.



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“For 27 years, I've seen TMC provide exceptional care. Medications play a vital role in overall health and well-being for our patients,” said Koreny. “I feel a great sense of responsibility to ensure everything goes right for our patients when it comes to their medication needs. Integrity and accuracy must be at the center of every quality and safety initiative we undertake.”

Claudia Koreny, PharmD
Director of Pharmacy
~ Tucson Medical Center

Confidence and accuracy must be apparent when addressing drug diversion with an employee and mitigating any false positives. The best method to back up a claim is with insurmountable, quantifiable evidence of an event. Achieving that proof requires sifting through data. If performed manually, the job requires a significant amount of staff resources and time ranging anywhere from an added hour to days depending on the case.

THE DECISION

Stopping diversion is bigger than one person. TMC's drug diversion interdisciplinary team includes representatives from risk management; human resources; security; and nursing, physician, and pharmacy leadership. Koreny presented to the team that TMC needed to go beyond automated dispensing cabinet (ADC) reporting or employee screening to an advanced monitoring, surveillance, and detection platform. The team developed the following action-oriented criteria that guided the solution to choose RxAuditor Investigate from Medacist.

1. SAVE LIVES

The needs of the patient come first, and anything impeding that primary value must be addressed with swift speed. Reducing diversions prevent patients from suffering from insufficient analgesia, anesthesia, or compromised syringes stemming from impaired employees.³ Uncovering an employee diverter could help save their life.

2. DECREASE TIME AND LABOR

TMC needed to reduce time spent on manually accounting for pharmaceuticals, creating reports, and investigating employees that took up staff work hours and made for long days. Previous to RxAuditor Investigate, the manual labor produced stacks of paper for each one of the medications and lists of possible diverters that required painstaking reviews.

Moving to automation eliminates crowdsourcing investigations and provides accurate lists in a judicious manner, which can mean giving back an eight-hour day to management. Time saved equates to time to support hospital improvement initiatives, time for staff education, and, importantly, more time spent at the patient's bedside.

RxAuditor Investigate delivers this decrease by reducing the false positives associated with traditionally identified statistical outliers. The system autonomously performs previously performed manual audits and then applies over 70 levels of weighted risk scoring metrics to curate a list of "at-risk" individuals.

3. LOWER COSTS

Diversion is stealing. Hospitals bear the cost of diverted drugs, internal investigations, employee turnover, and follow-up care for affected patients are high-cost drivers. Fines for diversion events can be in excess of \$4 million for inadequate safeguards.⁴ The investment in the RxAuditor Investigate demonstrates a deeper responsibility to patient health and well-being.

4. APPLY ACCURATE ANALYTICS

RxAuditor Investigate instills confidence when deciding to advance an investigation or rule out an employee. The algorithms weigh more than 70 variables and uncover that outlier that denotes failure to document or why a drug was wasted or not returned. The reports offer drill-down capability and links that provide more of the story. RxAuditor Investigate also interfaces with Electronic Health Record Systems (EHRs), automated dispensing cabinets (ADCs), and timekeeping (Time & Attendance) systems and other data enrichment sources for advanced quantitative inferencing.

This confidence gained with RxAuditor Investigate translates into saving hours, even days, spent in unnecessary investigations. The intelligence aid leaders in informed decision-making.

5. ENSURE EASE-OF-USE

TMC wanted the ease of producing a single-glance, tell-me-what-I-need-to know report for leadership. The curated list of "at-risk" individuals stems from a more extensive list of statistically



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“The investment in the platform represents TMC's commitment to patients,” said Koreny. “When we investigate ‘at-risk’ individuals, we've seen a physical reaction when they realize the thoroughness and precision of the diversion report.”

identified diversion outliers. TMC can also easily flag users with high transaction volumes for a particular class or group (e.g., all hydromorphone-containing products). The functionality of RxAuditor Investigate allowed for a 100 percent adoption rate by the interdisciplinary team.

6. OWN BEST-IN-CLASS

With RxAuditor Investigate, TMC has a legacy system bundled with more than 20 years of machine learning and diversion behavior patterns from over 2000 hospitals, backed by a U.S. patent. TMC accesses a robust, centralized diversion knowledgebase (Genesis) weighing and analyzing various diversion outcomes to produce algorithms that target a diversion activity. Medacist's Genesis knowledgebase contains 10.1 petabytes of data confirmed by actual diversion events and enriched by multiple data sources. This platform delivers the highest level of diversion analytics in the industry, which differentiates Medacist from competitive solutions and quantifies RxAuditor Investigate as "best-in-class."

Thousands of hospitals across the U.S. have relied on RxAuditor Investigate to ensure regulatory compliance, reduce liability, and ensure patient safety.

THE RESULTS

The purchase of RxAuditor Investigate provides TMC's leadership with peace of mind and the confidence that the interdisciplinary team is doing their best to keep the patient safe. Pharmacy operations has a single source of truth that can mitigate reputational risks and patient safety concerns.

The cases produced allow for centralized management with a dashboard that illuminates all aspects of the case, which streamlines work for the team. The previous need to perform time-consuming manual audits is gone. TMC now has technology that audits, evaluates scores, and ranks risk, thus reducing false positives and curating a targeted list of "at-risk" individuals.

For example, with a minimum of one FTE from each discipline (pharmacy, nursing, risk management, human resources, Anesthesia, and security) the reduction of FTE's spent per month in suspected diversion equates to a minimum of 3-4 hours savings per detailed audit for reduction of a false positive statistical outlier.

In addition, RxAuditor Investigate achieved the following for TMC:

- Improved compliance with drug usage protocols, resulting in effective processes.
- Identified otherwise unknown diverters, resulting in a safer hospital.
- Improved diversion investigation, resulting in increased efficiencies.
- Decreased demand for staff dedicated to investigating diversion, resulting in time given back to patient care.
- Improved the false positive rate of diversion detection, resulting in increased confidence.

THE CONCLUSION

In healthcare, a case of drug diversion can be that one bad incident that can harm many. The numbers indicate the opioid crisis is still growing, but advancements in technology hasten leaders' ability to prevent it in their hospital. The quantification of benefits and cost-effectiveness advantage health systems who opt for a platform approach, such as RxAuditor Investigate, to deter diversion.

Medacist offers healthcare leaders an analytics engine powering data and algorithms to identify diversion risks through pattern recognition. The bottom line, analytics offer the ability to stop a person from illegally taking drugs.

¹ <https://www.aacc.org/publications/cln/cln-stat/2020/august/20/when-a-substance-abuse-crisis-and-pandemic-intersect>

² <https://www.cdc.gov/injury/features/prescription-drug-overdose/index.html>

³ <https://www.journalofhospitalmedicine.com/jhospmed/article/202732/hospital-medicine/diversion-controlled-drugs-hospitals-scoping-review>

⁴ <https://www.journalofhospitalmedicine.com/jhospmed/article/202732/hospital-medicine/diversion-controlled-drugs-hospitals-scoping-review>



RxAuditor Investigate is the best-in-class drug diversion detection analytics solution in the healthcare industry

Drug diversion detection is challenging and requires a multidisciplinary approach to reduce overall risk. RxAuditor Investigate will eliminate the guesswork, streamline the time-consuming investigation by eliminating manual auditing, and enable collaboration with all members of your diversion risk team.

Have peace of mind and promote patient safety with RxAuditor Investigate.

Schedule a demo today! Call us at (866) 633-5393 or email info@medacist.com

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