A Next-Generation Approach to Drug Diversion Monitoring

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Overview & Introductions
Overview of what we’ll be discussing:

- The reputational, monetary, or patient care costs associated with drug diversion
- The evolution of clinical drug diversion programs
- How proactive, AI-powered monitoring technologies maximize results and reduce effort when it comes to detecting and preventing this sort of unwanted activity
Presenter introductions:

- Nick Culbertson - CEO, Protenus
- Jacob Smith - Assistant Director, Medication Safety & Quality, Johns Hopkins Medicine
Overview of the Drug Diversion Landscape
The theft of prescription drugs from healthcare facilities for either 1) personal use or 2) re-sale on the black market.
How common is it?

- Approximately 20% of the population ages 12 and older reports using prescription drugs for non-medical use at least once in their lifetime.

- Among health care providers, it is estimated that 15% of pharmacists, 10% of nurses, and 8% of physicians are challenged with alcohol and/or drug dependency.
No healthcare institution type is safe from diversion

- Hospitals/Medical Centers: 37.25%
- Practice: 16.67%
- Pharmacy: 13.73%
- Long-term Care: 26.80%
- Ambulance Services: 2.61%
- Other: 2.94%
What sorts of drugs are most commonly diverted?

- Commonly diverted drugs include opioids, stimulants, antiretroviral drugs, athletic performance-enhancing drugs, and non-opioid psychotropic drugs.

- However, other types of pharmaceuticals are diverted as well that one may not expect.
Number of incidents involving the most commonly diverted controlled substances

- Oxycodone
- Hydrocodone
- Fentanyl
How does drug diversion happen?

- Many health care employees have unrestricted access to controlled substances throughout the medication order filling and dispensing processes.

- Hospital pharmacy leaders report increasing instances of diversion, including thefts of unopened vials, residual drugs left in a vial or syringe, and even substitution or dilution of medications intended for patients.
How does drug diversion happen?

- In one upsetting example, a cardiac technologist, who worked in 18 hospitals in seven states, diverted narcotics for self-use and infected an estimated 46 patients with hepatitis C.
- 90% of reported theft or loss of controlled substances comes from pharmacies, and there have been over 12,000 thefts in the last three years.
Drug diversion has huge costs

- The estimated cost of controlled prescription drug diversion and abuse to both public and private medical insurers is approximately $72.5 billion a year.

- Economic cost related to drug abuse in the United States was estimated at $193 billion
In 1992, federal and state governments bore about $45.1 billion (46.2%) of the total $97.7 billion in drug abuse costs. Meanwhile, private insurance bore $3.1 billion, victims bore about $6.5 billion, and drug abusers and members of their households bore $42.9 billion.
Drug diversion has huge costs

- Approximately 100 individuals die from drug overdose daily, with opioids accounting for 75% of these overdoses.

- These incidents threaten patient and employee well-being, while also tarnishing the safety record of the hospital. Drug diversion risks patient harm if medications intended for patients are diluted or tampered. A health care provider diverting prescription drugs could even transmit pathogens, such as HIV or hepatitis C, through used syringes.
Where does monitoring fit into the whole drug diversion prevention strategies?
Drug diversion strategies

- Institutions approach this differently. Drug diversion will be held in different departments, but it’s most commonly under a drug diversion team, nursing or pharmacy.

- Drug Diversion is heavily regulated. DEA, FDA, State DoH, State Licensing Boards, HHS OIG, State Attorney Generals all have some level of oversight, reporting requirements, or licensing oversight.
Drug diversion strategies

- Complaint/concern Driven
- Report Driven
- Data Driven
Paradigm Shift

MAXIMIZE RESULTS

MINIMIZE EFFORT
A Concern-Driven Investigation
Only the tip of the iceberg.
Employee reported for absenteeism and unusual behavior.
No ADC-MAR discrepancies reported for this employee.
This employee pulled unusually high volumes of oxycontin and fentanyl.
This employee has “wasted” an unusually large amount of narcotics.
The employee “wastes” frequently with the same co-worker.
This patient’s pain scores appear appropriate, consistent, and controlled based on documentation.
What this user documents in the EMR does not match what is pulled from ADCs.
...and many more facts.
Diversion
A Report-Driven Investigation
Just a slice.
Show me all employees who have pulled a volume of narcotics three standard deviations above their peers.
Show me every discrepancy logged for a given floor’s ADCs.
All PCA key access events.
Diversion

False Positives
A Data-Driven Investigation
Check every transaction.
Ask and answer every question instantly.
Stratify on risk and suspicion.
Alert on actual diversion.
Artificial Intelligence
Artificial Intelligence $\rightarrow$ Diversion
Minimize Effort

Data Gathering
Investigation
Interviews
Maximize Results

- Traditional Investigations: 17%
- Using Protenus: 97%
Learn more about what we’re learning at info@protenus.com or follow us on Twitter @Protenus