Wolters Kluwer

The State of Drug Diversion 2023 Report

A Comprehensive Look at Drug Diversion from the View of Healthcare Executives, Pharmacists, and Drug Diversion Specialists

Background

The Centers for Disease Control and Prevention (CDC) defines 'drug diversion' as when someone criminally obtains or uses prescription drugs. Although some drugs are diverted for profit, healthcare workers typically divert drugs for self-use, leading eventually to a substance use disorder.[1] Often addiction is considered a victimless crime, but when it leads to drug diversion, it can potentially harm healthcare workers, patients, and employers.

Opioids, including synthetic forms, are the most commonly diverted drugs in healthcare settings. Although healthcare facilities distribute a small fraction of the nation's drug supply, the nature of these organizations provides ample opportunities for drug diversion.[2] Depending on their role, healthcare workers who divert prescription medication and controlled substances may use multiple acquisition methods like hiding patient drugs in clothing, replacing medications with similar-looking substances, diverting waste, or falsifying prescriptions.

When healthcare workers steal or use prescription drugs illegally for their own use, they pose a serious threat to patient safety[3]. Drug diversion has led to hepatitis C infection outbreaks, unnecessarily painful surgical procedures, and even death[4].

Over the past 20 years, federal and state governments introduced several regulations to prevent drug diversion. In addition, some hospitals, physician offices, and other healthcare providers adopted drug diversion programs that detect and manage controlled substances' prescribing and dispensing within their facilities.

Successfully integrating drug diversion methods and tools into healthcare facilities hinges on gaining the commitment of the departments most involved and at risk for drug diversions. Engaging nursing, pharmacy, and clinical operations, where employees have direct access to prescription drugs, is crucial for the effectiveness of a drug diversion program.

Unfortunately, engaging clinicians has become increasingly difficult due to severe burnout, causing some to abandon their medical careers or reduce their hours. As a result, hospitals and other healthcare institutions have turned to contract and travel clinicians to fill these gaps in patient care.

Relying on rotating resources also amplifies concerns about the risk of drug diversion if facilities need systems and tools to properly vet, manage, and track diverting clinicians. Therefore, healthcare institutions should invest in advanced analytics and robust machine learning (ML) and artificial intelligence (AI) tools to reduce drug diversion risk resulting from unpredictable staffing models and suboptimal legacy systems that fail to ensure patient safety.

Executive Summary

In early 2023, Invistics, part of Wolters Kluwer, collaborated with Eliciting Insights to conduct a study to assess healthcare executives' perceptions of drug diversion

programs. Surveys were administered to healthcare executives in four critical areas: pharmacy, nursing, administrative/medical, and drug diversion specialists.

The State of Drug Diversion 2023 survey report is the fourth of its kind. From 2017 to 2021, Porter Research published three studies bi-annually similar to this research study that measured healthcare executives' drug diversion knowledge, confidence, and experience with detection programs.

The 2023 survey report compares Porter's historical findings against current results while gathering additional perspectives, including qualitative data.

Consistent with the prior years' studies, almost all survey participants believe that drug diversion occurs in hospitals across the U.S. but that most incidents go unreported. Additionally, about two-thirds of participants say they are either "not confident" or only "somewhat confident" in their organization's drug diversion program's effectiveness.

TWO-THIRDS

of participants are **not confident** or **somewhat confident** in their Drug Diversion Program's Effectiveness

The COVID-19 pandemic continues to hinder drug diversion programs in 2023. Over half (54%) of respondents say their programs suffer due to staff turnover, and 69% say the increase in floating staff makes tracking drug diversion more difficult. 34% say their drug diversion budgets got reallocated due to other priorities.

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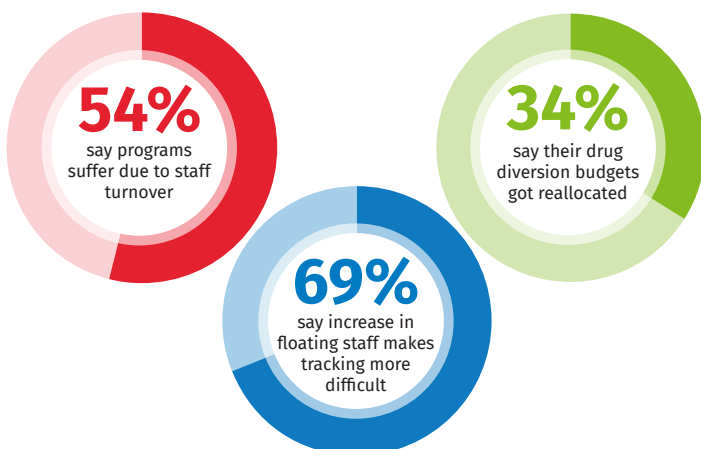
KEY TAKEAWAYS 2023

AI/ML technology increases confidence in drug diversion programs.

53% of those who use AI/ML detection tools are "very confident" in their drug diversion programs, while only 23% of those who do not use AI/ML detection tools feel the same level of confidence.

40% **87%** of hospital executives are "very familiar" with their organization's drug diversion program, yet only **40%** are "very confident" in its effectiveness.

88% **88%** of respondents ranked their program's overall performance as the "same" or "better" compared to others in the healthcare industry.

AI/ML prevention and detection tools have seen the biggest increase in adoption rates compared to other diversion program tools currently in use.

56% **56%** of respondents use AI/ML to identify and prevent drug diversion incidents compared to only **29%** of respondents in 2019.

Nearly one-third of healthcare institutions yearly investigate 11 or more drug diversion cases that rely heavily on human intervention.

8 HOURS **71%** of respondents spend 8 hours or more on each investigation.

Many drug diversion investigations still rely on personal observations. The top three methods for identifying potential diversions are coworker tips (95%), a supervisor observing behavior changes (92%), and automated systems such as third-party diversion monitoring software and reporting from other systems (e.g., ADCs) (92%).

What Remains the Same

Most survey respondents agree that drug diversion is still a significant national issue and believe most incidents go undetected.

Although most executives in pharmacy, nursing, and drug diversion are aware of their organization's drug diversion programs, their high awareness does not translate to increased confidence in their programs' effectiveness.
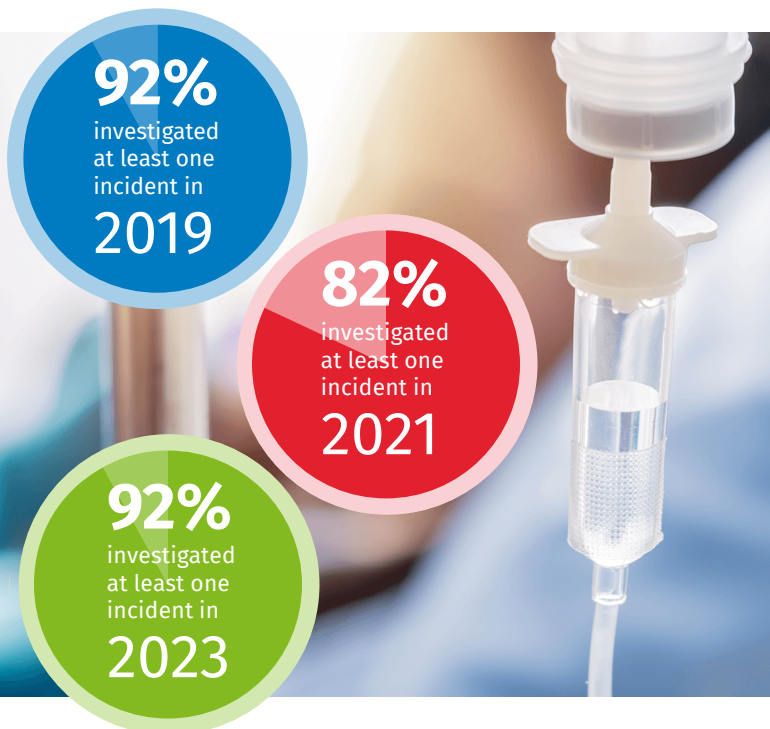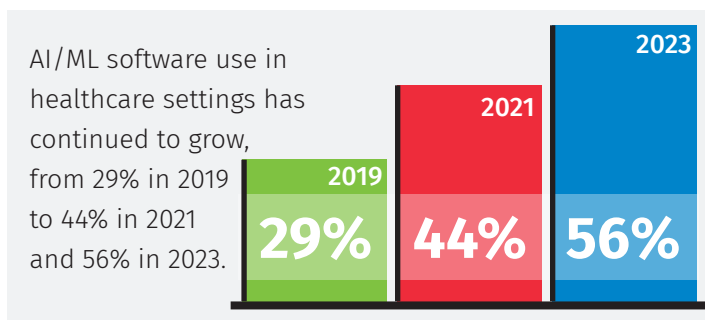
However, most participants indicate they are only "somewhat confident" or "not at all confident" in the

effectiveness of their organization's drug diversion program. This is possibly due to an overall critical perception of diversion programs since survey respondents consistently rated their diversion programs "the same or better" than other healthcare facilities in all four surveys.

Respondents also acknowledge that drug diversion considerably threatens the safety of employees, patients, and their organizations.

What's Changed

Over the last five years, AI/ML technologies have become increasingly popular in preventing drug diversion.

AI/ML software use in healthcare settings has continued to grow, from 29% in 2019 to 44% in 2021 and 56% in 2023.

2019 29%
2021 44%
2023 56%

92% investigated at least one incident in **2019**

82% investigated at least one incident in **2021**

92% investigated at least one incident in **2023**

Healthcare organizations appear to have returned to similar levels of investigations as reported in 2019.

92% of the respondents reported that their facility investigated at least one incident in 2019 and 2023,

compared with only 82% of respondents in 2021. The data support this finding since fewer financial and human resources were available during the COVID-19 pandemic.

Similar to 2019 findings, 20% of respondents said that more than half of drug diversion investigations resulted in a confirmed diversion, up from 13% of respondents in 2021.

Currently, 44% of investigations at health systems lead to 10% or fewer confirmed cases, down from 48% in 2021.

This data aligns with the finding that healthcare organizations had the same number of full-time employees dedicated to drug diversion programs and investigations in 2019, with 58% reporting at least one dedicated full-time employee, up from 45% in 2021.

Other than clinical staffing shortages, the data suggests that drug diversion programs in healthcare organizations have returned to their pre-pandemic performance levels.

Labor shortages and replacement staff stemming from the COVID-19 pandemic hinder effective drug diversion detection.

Most respondents still believe the COVID-19 pandemic negatively impacts drug diversion detection and mitigation activities. But executives' concerns have shifted from budget reallocation and vaccinations to staffing constraints.

When questioned about the impact of the COVID-19 pandemic on their drug diversion programs, **69% of respondents pointed to the increased presence of floating staff or contract workers as the primary factor that made d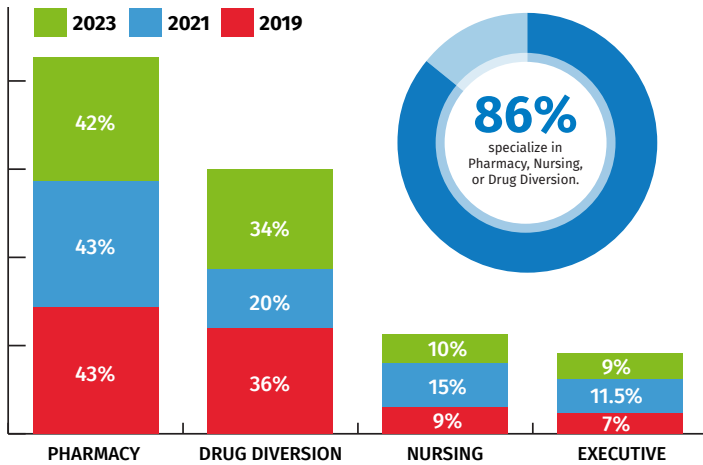rug diversion detection more challenging**. Also, over half of the respondents agreed that staff turnover made drug diversion detection more difficult.

In contrast, respondents are less concerned about budget reallocations and vaccination distributions. Significantly less (4%) of the respondents say they are concerned about drug diversion given the distribution of the COVID-19 vaccine, compared to 33% in 2021. Additionally, 34% of the respondents say they reallocated resources due to budget concerns, a slight decrease from 38% in 2021.

Most likely, the mass distribution and availability of the vaccine between the two survey assessments reduced respondents' concerns in 2023.

Drug Diversion Perspectives by Job Function

The 2023 survey targeted executives from four focus areas: nursing/patient services, pharmaceutical operations, drug diversion/investigation, and medical/administrative.

2023 **2021** **2019**

	PHARMACY	DRUG DIVERSION	NURSING	EXECUTIVE
2023	42%	34%	10%	9%
2021	43%	20%	15%	11.5%
2019	43%	36%	9%	7%

86% specialize in Pharmacy, Nursing, or Drug Diversion.

Successful drug diversion programs rely on close collaboration between pharmacy and nursing. These job functions provide program-level and unit-level perspectives on where drug diversion will most likely occur in a hospital setting.

Perspectives: Extent of Drug Diversion Problem (2023)

Questions were designed to ascertain participants' opinions about the drug diversion issue as a whole versus what they experience in their facilities.

Nearly all survey participants (98%) agree or strongly agree that drug diversion occurs in hospitals.

Research, news stories, and industry experts alike validate that opinion. John Burke, president of the International Health Facility Diversion Association, estimates that at least 37,000 diversion incidents occur in U.S. facilities each year, and even he says that his number is probably low.[5]

Drug theft by employees is difficult to detect.

79% of 2023 Drug Diversion Research Study survey participants agree or strongly agree that "most" drug diversion goes undetected, which has

increased since the 2017, 2019, and 2021 Porter surveys. 78% of executives surveyed say they know someone that has diverted medications.

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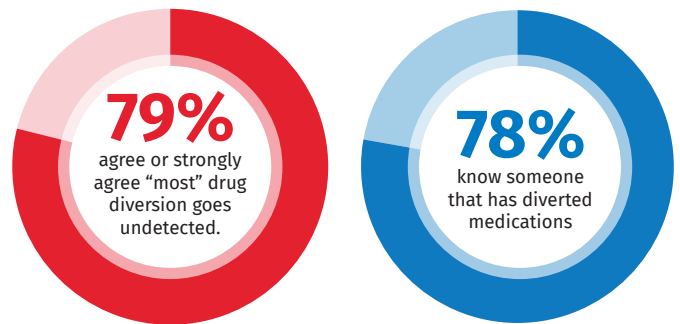
Executives surveyed believe that drug diversion negatively impacts the quality of care.

Almost all survey participants (95%+) agree that drug diversion is a risk to patient safety.

The Joint Commission concurs. In its April 2019 Quick Safety bulletin entitled "Drug Diversion and Impaired Healthcare Workers," the Joint Commission points out that drug diversion is a potential risk to every organization's patient population.

"Risks to patients include inadequate pain relief and exposure to infectious disease from contaminated needles and drugs, compounded by potentially unsafe care due to the healthcare worker's impaired performance."[6]

KEY TAKEAWAYS

Most of the surveyed healthcare executives plan to prioritize drug diversion in 2023. Almost every healthcare executive who participated in the 2023 Drug Diversion Research Study agrees that drug diversion occurs in the U.S., and the majority (67%) of executives plan to strengthen their drug diversion efforts.

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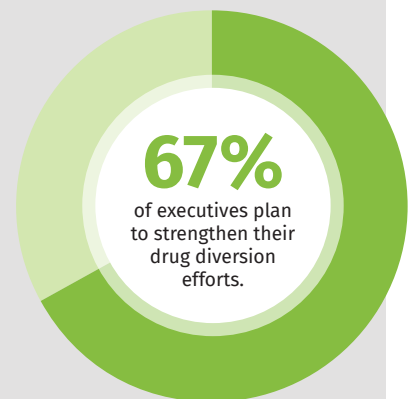
Labor shortages and staff reallocations make it easier for someone diverting drugs to go undetected without proper systems and tools like advanced analytics and AI/ML tools. Healthcare institutions must invest in robust technology tools to prevent and detect drug diversion and reduce its inherent risk to their patients, employees, and organizations.

The Costs of Drug Diversion (2023)

92% said employee drug diversion negatively impacts the quality of care

95% said drug diversion adversely impacts patient safety

89% agreed or strongly agreed that employee drug diversion negatively impacts finance and billing.

92% of respondents said that employee drug diversion negatively impacts the quality of care, and 95% say that drug diversion adversely impacts patient safety. Hospital executives also believe the high cost of drug diversion affects more than just the clinical departments: 89% percent agreed or strongly agreed that employee drug diversion negatively impacts finance and billing.

The United States is estimated to spend more than **$100 billion annually on healthcare costs** related to pain management and opioid dependence[7].

Additionally, 96% of respondents believe that diversion puts their organization's compliance with regulations at risk, not to mention the disparaging public relations that often accompany diversion incidents.

Diversion Program Tools Currently in Use

We asked survey participants to share which diversion program tools their organizations use. Executives were able to pick any that apply from a list, including:

	2017	2019	2021	2023
Automated Dispensing Cabinets (ADC)	91%	89%	86%	97%
Internal Audits	90%	87%	86%	86%
Tips from Co-workers	81%	84%	80%	84%
ADC Reports (e.g., anomalous usage reports)	67%	78%	77%	80%
Diversion Awareness Training	66%	75%	63%	61%
Machine Learning (technology learns patterns of diversion and detects potential diversion automatically)	29%	29%	44%	56%
Advanced Analytics (combines data for review from multiple sources such as EMR and ADC)	54%	59%	43%	55%
Random Drug Screening	27%	28%	23%	20%
Other	4%	6%	4%	3%
None of the Above	0	0	0.5%	1%

Healthcare is doing more in 2023 than in 2021 to prevent or stop drug diversion

In 2023, the use of AI/ML and ADC reports reached record-high usage. ADCs, internal audits, and investigation tips returned to pre-pandemic usage rates. Random drug screenings and diversion awareness training are the only methods that decrease year-over-year.

Fortunately, organizations are shifting resources back to advanced analytics. The usage of advanced analytics technology to detect statistical outliers in healthcare worker behavior dropped from 59% to 43% in 2021 but jumped back to 54% in 2023.

This is a promising development because advanced analytics software can integrate data from multiple sources, such as dispensing cabinets, timekeeping systems, and electronic medical

records, to provide a multidimensional view of drug diversion and quickly identify incidents.

What takes humans hours or even days to analyze can be done in a fraction of the time with the latest technologies.

Yet there is still room for improvement to leverage advanced analytics capability. The slow growth is likely because respondents have invested more in advanced technology.

AI/ML detects patterns in data, such as increases in specific behavioral actions or inconsistencies in pain management scores, which saw a big jump in adoption from 29% in 2019 to 44% in 2021 and 56% in 2023.

More organizations have taken the next step forward in leveraging the latest cutting-edge technology to tackle their institutions' problems.

KEY TAKEAWAYS

Drug diversion programs in healthcare have improved in both quality and quantity post-pandemic. However, not all tools used in these programs are equally effective in boosting employee confidence levels. Hospital executives seem to prefer advanced AI/ML technology most likely due to its proven benefits, such as proactive assessments of their environments and early detection of drug diversions.

From Detection to Prevention: Leveraging Technology to Combat Drug Diversion

It is interesting to compare how participants say people who divert are identified versus what tools survey contributors think are effective. Human intervention triggers most investigations, such as tips from coworkers, observations from management, or discovering missing drugs.

Unfortunately, much of the damage is already done when healthcare supervisors discover someone is diverting. With the use of emerging technologies, the time to discovery will be shorter and more accurate, saving healthcare organizations from the cost of diversion and false positive investigations.

We also know that lacking staff to handle diversion detection programs may negatively impact outcomes: 92% of hospital respondents reported that investigations take four or more hours to complete. In comparison, 41% said their organization has less than one full-time employee dedicated to drug diversion.

Technology solutions can help hospitals reduce drug diversion program costs while producing better results.

Survey participants agree; the most cited diversion-detection technologies that are

"effective" or "very effective," include advanced analytics solutions (84%) and AI/ML (68%).

Considering the resource constraints posed by COVID-19, it is even more critical to adopt technology that can streamline the investigation process and ensure that it is as efficient and effective as possible. Shifting from a person-dependent model to an automated-driven model will enable organizations to use drug diversion resources more consistently and efficiently.

Taking Action

95% of respondents "strongly agree" or "agree" that drug diversion incidents occur in hospitals with 78% also agreeing that most of these occurrences go undetected.

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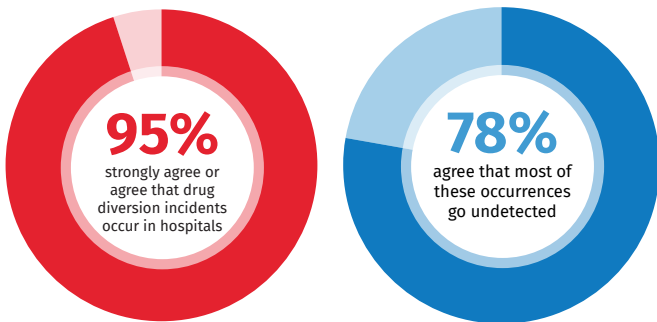
Given the current labor shortages, preventing and detecting drug diversion has become increasingly challenging. Therefore, hospitals must prioritize protecting both their healthcare workers and patients, while also avoiding financial and reputational harm.

The surveys underscore the urgency of expanding drug diversion programs, reporting mechanisms, and other technologies.

As one of our respondents commented, "If you do not have any drug diversion, then you are not looking hard enough."

More specifically, hospitals need to allocate resources to develop and manage diversion programs based on the time required to complete investigations.

Healthcare organizations can tackle these issues in two ways:

1. Increase the number of staff dedicated to drug diversion detection by hiring more full-time employees.

2. Use robust technology, like AI/ML, ADCs, advanced analytics, and more, to reduce investigation time and improve accuracy.

With the advent of generative and predictive artificial intelligence technology, data interoperability, and other technology solutions, healthcare facilities can predict and prevent diversion incidents before they occur.

Survey Methodology

100 healthcare employees participated in the survey. Survey participants included directors of pharmacy (42%), nursing executives (10%), executives (9%), and drug diversion specialists (34%).

Endnotes

1. Centers for Diseases Control and Prevention. https://www.cdc.gov/injectionsafety/drugdiversion/, Centers for Diseases Control and Prevention.

2. Berge, Keith H., et al. "Diversion of Drugs Within Health Care Facilities, a Multiple-Victim Crime: Patterns of Diversion, Scope, Consequences, Detection, and Prevention." Mayo Clinic Proceedings, no. 87(7), 2012, pp. 674-682. National Library of Medicine, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3538481/.

3. U.S. Department of Justice Drug Enforcement Agency. "Nurse Who Stole Painkillers, Replacing Them with Saline and Putting Surgical Patients at Risk, Sentenced to Four Years." DEA.gov, 22 May 2023, https://www.dea.gov/press-releases/2023/05/22/nurse-who-stole-painkillers-replacing-them-saline-and-putting-surgical. Accessed 13 June 2023.

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5. Briers, Stuart, and Lilly Chapa. "The Dirty Secret of Drug Diversion." www.asisonline.org, ASIS International, 1 August 2017, https://www.asisonline.org/security-management-magazine/articles/2017/08/the-dirty-secret-of-drug-diversion/. Accessed 15 June 2023.

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7. Dydyk, Alexander M., et al. "NP Safe Prescribing of Controlled Substances While Avoiding Drug Diversion." PubMed, National Library of Medicine, 29 January 2023, https://pubmed.ncbi.nlm.nih.gov/33232099/. Accessed 15 June 2023.