AUTOMATING PROACTIVE
DIVERSION
MONITORING

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Effective diversion monitoring requires the collation of a wide variety of data points, making the process inherently complex. Every transaction from the automated dispensing cabinets (ADCs) must be compared against EMR data on administration and then checked against the orders and dispensing activity.

When diversion is suspected or anomalous practice is noted, the usual response in pharmacy is to begin printing out multiple reports and then attempt to reconcile every single transaction to determine what occurred. It is not uncommon for the event under investigation to be 30-90 days old, further complicating the investigation. Likewise, a thorough review requires comparison of practices, such
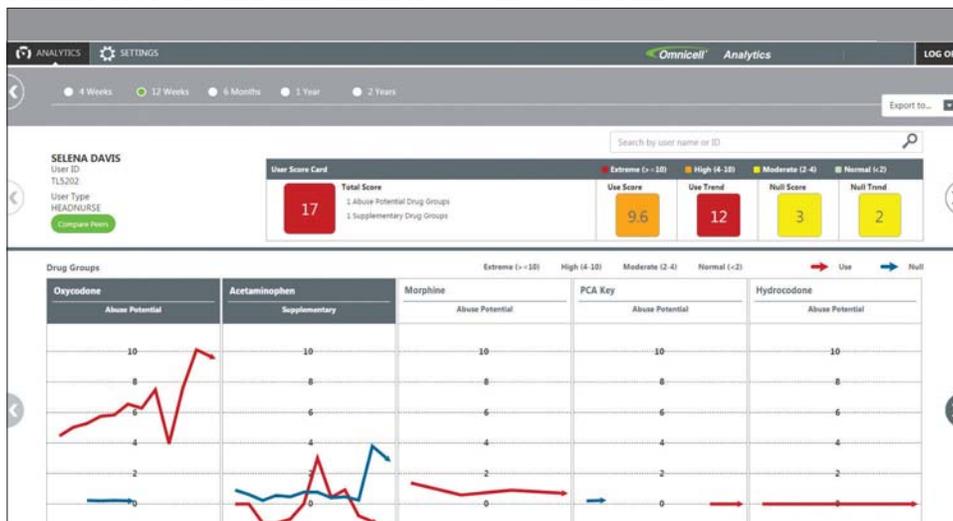
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SCREEN SHOT OF OMNICELL ANALYTICS' USER SCORECARD

The dashboard provides a graphic representation of a user's patterns, which are color coded to indicate normal, moderate, high, or extreme practices.

as comparing other administrations by the nurse under investigation, as well as administrations by other nurses on the same shift, and administrations for the same patient by nurses on other shifts. Gathering and collating this data manually can be overwhelming and it leaves pharmacy in a position of always reacting to problems, rather than proactively managing diversion risk.

Finding a Solution

At Hackensack University Medical Center located in northern New Jersey, our goal was to simplify diversion monitoring with a single tool that coalesces every data point and then analyzes the data via an algorithm to identify in a dashboard any individuals practicing outside of the norm. With Omnicell Analytics, we are able to integrate the data points between our ADCs and EHR, giving pharmacy real-time monitoring capabilities, which has led

to a significant decrease in diversion rates.

The value of real time monitoring is two-fold. First, staff is aware of the increase in monitoring. Secondly, we no longer need to wait 30 or 60 days to determine if someone is diverting; rather, we can respond in real time to a discrepancy and prevent more serious problems from developing. With Omnicell Analytics, diversion monitoring is now managed proactively at Hackensack University Medical Center; it is no longer a reactive process.

How it Works

The dashboard delivers a daily snapshot of those clinicians whose transactions fall outside of the norm, be they nurses, anesthesiologists, technicians, or pharmacists. With one click, the detailed transactions appear, revealing the associated patients, orders, clinicians, times of administration,

and any wastage data as well as detailed comparisons against other clinicians' dispensing and administration activity. A variety of comparisons can be made against other clinicians, including contrasting the activities of those on the same shift as well as clinicians treating the same patient on different shifts; likewise, comparisons can be made against those treating different patients in similar situations. Rather than spending hours gathering and analyzing this data, the system collates it all within minutes and presents it in a clear dashboard.

The algorithm can create a scorecard for a given user that summarizes any suspicious activities and determines the user's potential drug(s) of choice. When a potential diverter is identified, the dashboard will display all of their medication transactions by patient, including any wastage data or medications accessed from multiple ADCs.

Null transactions are also included in the analysis, so if a nurse completes a transaction to access Percocet, but simultaneously removes a Tylenol without recording it, there is a risk that the nurse could give the patient the Tylenol and divert the Percocet. These null transactions are recognized in the system and are included in the scoring mechanism.

Software Installation

Just as Omnicell Analytics is simple to use, the installation process is equally straightforward. Omnicell Analytics is built into the Omnicell software platform version 20.0, so it simply requires activation at the server (OmniCenter) with a license code. Once activated, the facility receives a URL to log into the reports. Roles and permissions can be

DIVERSION TIP

Diverters typically exhibit repetitive patterns with their improper drug access. Most diverters have a drug of choice, be it oxycodone or hydromorphone. As such, their suspicious transactions will revolve around access to their drug of choice.

controlled at the server level, allowing the system administrator to determine who will have access to the site.

Dedicated Resources

For too many facilities, diversion management has been an after-thought. An effective system requires dedicated resources, and ongoing management is the key to continued success. At Hackensack University Medical Center, while the nurse managers have access to the dashboard, it is overseen by a pharmacist, who is tasked with reviewing the dashboard daily. The pharmacist's job responsibilities were adjusted to allow for complete focus on diversion issues for half of each day. After reviewing the dashboard, the pharmacist follows up on any discrepancies and is in charge of conducting audits. The follow-up process is leveraged to drive practice improvements. While the vast majority of discrepancies are the result of simple mistakes, all are addressed, resolutions are documented, and the clinician in question is required to sign off on the documentation form. Because clinicians are typically asked to address discrepancies on the same day they occurred, resolution is quick and this approach inspires improved adherence to policies and procedures.

In comparison to facilities that review diversion patterns retrospectively, our approach is significantly more effective. For those facilities auditing previous orders, only a percentage of orders are reviewed and much of the effort is focused on reviewing orders without any significant problems. Conversely, we are able to address 100% of discrepant orders in real time. Because we can identify cases of diversion early, we are also able to respond rapidly and reduce the risk of significant harm resulting from the diversion. Furthermore, the diversion

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Prior to implementing Omnicell Analytics, our manual process for monitoring diversion typically consisted of following up on controlled substance counts that did not match, or investigating staff members who demonstrated a blatant problem. The data was not available in real time and it was difficult to identify emerging trends.

Given the recent reports of the increasing prevalence of opioid use in the US, addiction is no longer a rare occurrence. Colleagues within the hospital setting afflicted by this debilitating disease find themselves in the midst of a perfect storm: addiction compounded by relatively easy access to controlled drugs.

In the past, when a staff member was suffering with addiction, it often was not confirmed until their behavior became blatant or a catastrophic event occurred. At that point, their coworkers would invariably say that they had known something was wrong, but were unable to put their finger on it. With real time data from Omnicell Analytics, variances are quickly identified and nurse managers are confident in probing concerns, allowing for the identification of problems before they become catastrophic, while simultaneously ensuring patients get the care they deserve.

Recognizing addiction as a disease that should be treated therapeutically, not punitively, means we must identify colleagues in need at the outset of their problem so they can receive the necessary treatment. Early in my career, I worked with a physician who regularly offered to administer pain medications to his patients. It was only after his fatal overdose in a hospital bathroom that his diversion was confirmed. At that time, we did not have the tools to analyze his patterns. It was heartbreaking that we were unable to save his life.

Access to real-time data and the ability to track patterns provides transparency, making the magnitude of addiction immediately clear. We have learned not to overlook those who do not fit preconceived notions of who is likely a diverter. Our hope is that the sooner we can identify patterns of diversion, the more likely we will be able to offer help, allowing for the successful treatment of addiction issues through our Employee Assistance Program. Furthermore, when staff is aware that every transaction is tracked and reconciled, the temptation to divert (either for themselves or on behalf of a family member) is reduced.

With Omnicell Analytics, we remove the guesswork from diversion management to identify issues early, before we are faced with the tragedy of patient or coworker harm.

program creates a culture wherein our clinicians are aware that every transaction matters and must be reconciled.

Should the discrepancy resolution point to diversion, the investigation is turned over to the drug diversion team, which is led by HR and includes representatives from nursing, pharmacy, security, occupational medicine, and risk management.

Collaboration

While pharmacy takes the lead on diversion management, there must be a facility-wide commitment to ensuring accuracy in transactions and limiting opportunities for diversion. At Hackensack University Medical Center, we are committed to eliminating barriers between departments so that we can all contribute as members of the patient care team. When we introduced Omnicell Analytics, pharmacy demonstrated the tool in multiple nurse manager director councils, and the nurse managers signed up for education sessions on the tool.

Using the dashboard, the nurse managers can oversee the dispensing and administration habits of the nurses in their unit. Nonetheless, nurses are expected to be accountable for every transaction. On an individual basis, nurses can utilize Anywhere RN, an Omnicell application that provides remote access to the cabinet, to identify any of their transactions that are not reconciled, and we set the expectation that they will rectify any mistakes. Because every transaction will be reconciled, it is very difficult for diverters to access medications.

Future Plans

We are working with our EHR vendor to include additional data to help fine tune the analysis. For example, our vision is to incorporate the pain score from the EHR into the collated data, as this will give us a more complete picture of medication administration.

Likewise, as we expand our EHR into additional areas of the hospital, we will simultaneously expand coverage of Omnicell Analytics. Once the EHR's anesthesia module is launched, Omnicell Analytics will be incorporated into the operating rooms, allowing for the monitoring of anesthesia staff.

A longer-term goal is to expand the system into the cleanroom in order to cover compounded products. As bar code scanning and gravimetric measuring become more common in health-system pharmacy, we could realize significant value by tracking the gravimetric data as part of our diversion management program.

Ultimately, we would like to tie our wholesaler data into the system as well. That way rather than beginning medication tracking from the point of administration, we could expand the tracking process to begin at the moment medications enter the inventory. This would allow us to track controlled substances for their entire life cycle and deliver a clearer picture of controlled substance usage.

Conclusion

Monitoring and auditing for diversion rapidly devolves into an overwhelming task when technology is not used to support the endeavor. To avoid this, it is imperative that diversion monitoring transform from a retrospective process into a proactive one. It is simply too dangerous for our patients and our staff to allow issues to occur and continue to progress before we are able to identify and address them. The goal of our diversion monitoring programs should be to prevent diversion rather than identify it after it has progressed to a dangerous level. We must leverage automation to ensure all discrepancies are identified as they occur, in real time. Once a diverter is repeatedly accessing medications improperly, we are too late.

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DIVERSION TIP

The risk to patients and coworkers from a nurse diverting medications is quite clear. It is important to remember that because pharmacists and pharmacy technicians have access to larger quantities of controlled substances, they may also pose significant diversion risks. Consider the access a pharmacy technician has conducting narcotic deliveries versus a nurse who typically accesses one or two doses at a time.

Reconciliation is the key to offsetting this risk. At Hackensack University Medical Center we require all narcotic transactions to be reconciled in a timely basis.