Diversion Detection and Prevention in Hospitals

RFID can prevent health-care personnel from covertly accessing opioids—which could, in turn, stop them from becoming addicted.

By Gordon Krass

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Jul 21, 2019—Drug diversion in operating rooms is an alarming issue. Nearly one in 10 hospital-based doctors, nurses and anesthesiologists is addicted to controlled substances, and more than 18.5 million medications were lost in 2018 due to drug diversion (see First Half of 2018 Sees 18.7M Pills and $164M Lost Due to Drug Diversion). According to a recent study, almost one third of these events occur at hospitals and medical centers. What's worse is that these facilities rely largely on manual paper-based tracking tools to monitor the use and disposal of their controlled substances. These outdated methods leave room for myriad failure points in the chain of custody of drugs.

One must ask why drug diversion is such a growing problem when we have cutting-edge technology at our disposal, like RFID-enabled drug inventory systems that can precisely track and trace medications throughout the supply chain to ensure they never fall out of the chain of custody. More than two-thirds of procedural areas (operating rooms, outpatient clinics and so forth) have manual, antiquated and ineffective tracking processes in place. These failing procedures typically track narcotics in groups, not at an item level. This makes investigations difficult when diversion does occur, and it can cause problems for hospitals when they report to regulatory bodies that oversee controlled substance use and disposal.

The reality is that until recently, there haven't been any technologies available to deter diversion events. What exists now are tools that mitigate diversion once it has already happened—and by that time, it's too late. The drugs are already in the wrong hands, and the damage has been done.

Diverters in hospitals are smart people, and they will find clever ways to divert drugs. What are needed are better detection, prevention and deterrent methods, in order to make diversion extremely difficult to pull off. Unfortunately, almost one-third of hospitals throughout the United States that aren't using manual, paper-based systems rely on ineffective diversion tools driven by decades-old barcode technology, which was designed for grocery stores, not procedural areas in hospitals.

Patient Safety

Patient safety is a major consideration when diversion occurs, as the drugs patients require may not be available when they need them. This is a frightening proposition, especially when you consider critical, life-threatening situations and procedures. Here are a couple recent cases:

Drug diversion has been linked to patient infections, including a bacterial outbreak at a Wisconsin hospital tied to syringes that a nurse tampered with to divert narcotics (see Intermountain Healthcare to Pay $1M to Settle Drug Diversion Case). Other drug thefts involved registered nurses who diverted controlled substances from UMHS for months and, in some instances, years. Some of these nurses diverted vials of fentanyl, then refilled the vials with saline before returning them to the medication storage area for administration to patients for whom fentanyl had been prescribed (see UM Health System Pays Record $4.3 Million Settlement in Drug Diversion Case).

Radio Frequency Identification

There is a technology that exists already, RFID, which most likely would have prevented the above cases. Unlike barcode technology, which provides very limited data about a type of product, network-connected RFID tags can be affixed to individual medications and provide a wealth of intelligence regarding a specific vial or syringe, not just the type of drug. Each item has its own unique RFID tag, which tells doctors and pharmacists when the medicine was dispensed, where it resides, who administered it, how much was given and so on. RFID tags are intelligent devices which connect to a hospital's centralized network to provide drug inventory accountability at the item level.

What's more, automated notifications of par levels can be automatically sent to pharmacies, nurses and anesthesiologists, for instance, so that the correct drugs are always in the right place at the proper time. This is what precise drug inventory tracking at the item level can do for a medical facility and its patients.

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RFID is currently being used by hospitals (in operating rooms, in pharmacies and throughout the enterprise) to deter diversion events, and with great success. This precise inventory-management technology is the only tool available that can automate the tracking and tracing of medications at the item level—and this is where it must occur. If you aren't managing diversion at the item level, you'll leave too many opportunities for drugs to fall out of the chain of custody.

Diversion Mitigation

RFID technology has the potential to dramatically reduce drug diversion in hospitals. Once deployed in the pharmacy and procedural areas, RFID can provide c-suite medical executives with the enterprise-wide, up-to-the-second drug supply tracking visibility required to thwart diversion. Clinicians will know where their medication came from, where it currently resides and who handled it.

Perhaps the best aspect of RFID in drug inventory management is its ease of use. Unlike barcode technology, no line of sight is required to scan medications. In fact, hundreds of controlled substances could be scanned simultaneously within seconds. If diversion did occur, management and clinicians would be instantly alerted. Clinicians, pharmacists and anesthesiologists would have full responsibility for the medications under their control. Narcotics which fall outside the chain of custody would have full audit trails and trigger alerts so the culprits could be identified, and workflows could be improved to prevent diversion in the future.

Just Like Open Cash Drawers in a Convenience Store

To illustrate the senselessness of not having RFID in place to manage controlled substances in procedural areas, suppose a convenience store were to have open cash drawers placed all around their premises for anyone to access. This would not be smart, as customers could easily and covertly take money. Fortunately, convenience stores don't run their business this way. Hospitals do, however—and to addicts, opioids are perhaps more precious than cash itself. Medical facilities around the country leave their narcotics largely unprotected, especially in procedural areas, for addicts to easily and anonymously steal them—just like open cash drawers in a convenience store.

The Future

Hospitals across the country have an opportunity to stop drug diversion dead in its tracks, with the adoption of new technologies like RFID. The technology could radically overhaul how diversion is handled by empowering hospitals to detect potential diversion events immediately, before it's too late. This would institute a failsafe of sorts to protect controlled substances from ever falling out of the chain of custody. The benefits would be tremendous, as patients would have the medications they need, right when they need them, and offending staff members could be identified in real time.

At a time when opioid addiction is running rampant in our society, the use of RFID in hospitals would be a great step in cutting off access to these drugs, right at the source. If, as corporations and organizations, we can use RFID to prevent even one provider, pharmacist, clinician or nurse from accessing opioids and possibly becoming an addict, we are doing our part.

Gordon Krass is the president and CEO of IntelliGuard, a provider of enterprise-wide, intelligent, RFID-enabled, automated inventory-management solutions for hospitals and health-system pharmacies.