



Connecting the dots in health-related cases since 2001

Medical-Legal Resource News

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Bar Coded Medications

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Medication errors are a widely acknowledged, major threat to patient safety. In February of 2004, the FDA made an effort to improve patient safety by issuing a rule that requires bar codes on most prescription medications and various over-the-counter medication-type products. It was felt that bar codes on drugs would help prevent medication errors when used with a bar code scanning system and computerized database.

How does the system work?

Patient admitted --> hospital issues a bar coded identification band, linking the patient to his/her computerized medical record.

Prescription drugs and certain OTC drugs would have bar code on their labels and bar

code scanners linking to the computerized system

Before the healthcare provider administers medication he/she can ensure the medication is correct by scanning the drug label and comparing it to the drugs listed in that particular patient's medical record.

Bar code medication systems are designed to ensure that the right drug is being administered via the 5-rights of medication administration.

Does it solve the problem - not necessarily. A study lead by researchers at the University of Pennsylvania School of Medicine challenged the use of these systems by evaluating the manner in which nurses used the systems. It was surprisingly found that this technology actually increased the probability of



Medication errors are a leading cause of death and injury

certain errors. Researchers discovered that nurses compensated for the imperfect technology. According to the published results found in Journal of American Medical Informatics, nurses felt the system imposed many time-wasting annoyances and demands. If the medication was late, the com-

FDA News - Heparin Recall

In January 2008, Baxter International announced a voluntary recall of certain lots of heparin sodium injection due to concerns over an increase in reported adverse patient reactions. Because heparin is so widely used the FDA and Baxter concluded that removing additional lots from the market

would be more detrimental to those who required the drug than increase the risk for potential adverse event. However, in February 2008, the FDA and Baxter International agreed to temporarily stop the manufacturing of multiple-dose-vial injectable Heparin, due to reports of serious allergic reac-

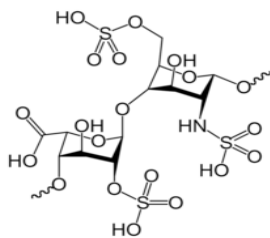
tion and hypotension in patients receiving high doses. Reported reactions included difficulty breathing, nausea, vomiting, profuse sweating and rapidly falling blood pressure.

Heparin is a blood-thinning drug and has been popularly used as an anticoagulant in this

Legal Community raises questions related to Heparin recall:

- When did heparin contamination begin?
- What is the pathology?
- What is the death toll?
- What is the full extent of outcome for survivors?

Heparin Recall [continued from page 1]



Structural Formula of Heparin Sodium [representative of sub-units].

Heparin is a heterogenous group of straight-chain anionic mucopolysaccharids a/k/a glycosaminoglycans. Oversulfated chondroitin sulfate [OSCS] is the contaminant found in tainted heparin



country since the 1930's. It is derived from the mucosal tissue of slaughtered meat animals such as porcine [pig] intestine or bovine [cow] lung and prescribed to prevent blood clots in patients with various medical conditions. It is also prescribed to patients undergoing various surgical procedures. Small amounts are also used to prevent clots from forming in various type of catheters that must be maintain over long periods of time. Heparin works as an anticoagulant by preventing the formation of clots and the extension of existing clots within the blood. While heparin does not actually break down blood-clots, it allows the body's natural clot lysis mechanisms to work by breaking down clots that have already formed. It is administered parenterally because it is degraded when taken orally. It can be injected subcutaneously or intravenously. Intramuscular injections are avoided due to potential risk of hematoma formation. Because of a short biological half-life [approximately 1 hour], it is typically given frequently or continuously [IV]. A serious side-effect of heparin is a heparin-induced thrombocytopenia a/k/a HIT syndrome. HIT results from an immune reaction that results in degradation of the platelets. This condition is usually reversed when the heparin is discontinued and can generally be avoided with use of one of the synthetic heparin products. There is also a benign form of thrombocytopenia associated with heparin. This form also will typically resolve once the medication is discontinued.

Later during the month of February in 2008, the FDA extended this recall to all multi-dose vials of Heparin as well as single dose vials. As a precautionary measure, the FDA also recall all heparin flush products. Baxter International issued a notice providing instructions to health care providers regarding identification and disposi-

tion. At this point, it was decided that the only Baxter heparin-containing products that would remain on the market would be Heparin 200 Units /100 cc and 1000 cc volume bag as no adverse events had been reported with these products. Subsequently, it was discovered that the pig intestines from China that had been used to manufacture the heparin were contaminated with oversulfated chondroitin sulfate. Chondroitin sulfate is a natural substance extracted from animal cartilage. It is also used in supplements used to treat arthritic joints. Oversulfation results from process the substance.

The FDA found a definite link between the contaminant and the patients who suffered reaction. In March of 2008, FDA issued a recall of all Heparin products.

In May 2008, Atrium Medical and Medtronic Inc. initiated voluntary recall of various products that had been coated with heparin.

According to FDA reports, it is felt that the contamination problems began in September 2007 however earlier incidents are still being questioned and investigated. Many of the reported reactions in the U. S. occurred in dialysis centers where renal dialysis patients received high initial doses of heparin. Other reported adverse reactions have been associated with patients undergoing invasive cardiovascular procedures and apheresis [blood separation] procedures. Reactions appeared to be dose responsive in that there appeared to be an associated with the amount of heparin and the likelihood of reactions. Adverse reactions ran a gamut of symptoms ranging from GI symptoms with nausea/vomiting and abdominal pain to respiratory symptoms with shortness of breath and throat swell-

ing and even cardiovascular symptoms of accelerated heart rate, low blood pressure and chest pain. Many patients developed headache, dizziness, restlessness, restlessness and fainting.

Many of these symptoms lead to severe or even fatal consequences. Unfortunately, most patients subjected to heparin contamination were already frail, sick individuals so what must be determined is how the contaminated heparin attributed to an already compromised situation. The reported adverse reactions are numerous and must be differentiated from other side effects of heparin. Up to this point, the default diagnosis for heparin related deaths was associated with HIT as the beginning symptoms are similar with particular bruising or blackening that can progress to gangrene. The extremities are particularly susceptible. HIT is typically reversed by discontinuation of the heparin and/or use of synthetic heparins however many of these patients worsened, which raises strong question to the possibility that instances resembling HIT are actually related to the contaminated heparin.

Learn more about Heparin recall:

[FDA Heparin and Plasma derived products](#)

[FDA Update to Healthcare Facilities and Professionals](#)

[NY Times: FDA says Heparin Contamination may have been deliberate](#)

[NEJM Contaminated Heparin](#)

[Circulation: Heparin Induced Thrombocytopenia](#)

Bar Coded Medications [continued from page 1]

puter required an explanation which many felt would reflect in poor performance reviews. To avoid these hassles, nurses learned how to “hack” the system to save time. If the bar code did not scan correctly - they manually over-rode the system by typing in the 7-digit code.

This Penn Med study concluded that the cause of these overrides were neither secret or rare but obscured by the blind-faith in technology and were an

unintended consequence of a system in need of continued evaluation.

Read more about bar coding

[US Food and Drug](#)

[Journal of American Medical Informatics Association](#)

[Penn Medicine](#)

[FDA Medication Errors](#)



Bar coded medication administration systems have been increasingly integrated into healthcare settings

The Legal Nurse Consultant

An excellent organizer and superb educator

Employment has undergone a transformational changes in most sectors of every industry. The legal industry has vigorously embraced the concept of outsourcing legal nurse consultant services as a means of grasping the medical issues in health-related cases. Many attorneys attempt the laborious challenge of learning medicine and nursing themselves while others consider the possibilities of using non-medical personnel or perhaps depend on the physician as a consultant. Frankly, medical doctors have a tendency to be too complex and non-medical people simply do not understand the terms. A legal nurse consultant can turn even the most involved case into a coherent, interesting story that you are able to follow and can easily present to a jury.

The LNC has the capability to organize a stack of complicated records, decipher the nearly illegible pieces of information and format this data into a logical, concise, easy to understand, teach and

explain pattern of facts.

The ideal LNC is an experienced nurse who have undertaken the training that teaches him/her to look at medical issues from a legal point of view. Testing is often required to ensure competence. Based on virtue of this training and extensive clinical experience, the LNC has the expertise to analyze medical records involved with any case that deals with illness or injury. LNC's can translate the terminology, elaborate and explain the “between the lines” issues, and correlate those pieces of information that may seem unrelated to a non-medical person. As nurses, we know the information that should be contained within this record and can easily identify those items that are missing.

The paralegal versus the legal nurse consultant

Paralegals are vital in assisting attorneys and their importance is not to be minimized however a knee-high stack of medical records can be daunting to one who to someone

who does not have medical training, clinical background or an insider's knowledge of the healthcare industry. The LNC can bring those valuable assets to your table by utilizing his/her understanding of medications, protocols and disease processes, which are key components to your health-related cases.

Why hire a nurse when you have a doctor?

Doctors are a must - no doubt. They are experts on medical procedural practice and authorities on disease. Physician's are known for being very focused, which is what makes them excellent in their profession. Have you ever been to a physician - complained about a system outside his/her specialty area and subsequently was referred to another physician that deals with that system. I believe most of us have. Physicians are very busy individuals who tend to concentrate within their own specialty areas, which is the biggest complaints I have heard among attorneys who given an entire chart to a physician for review.



The multifaceted capabilities of a Legal Nurse Consultant is an invaluable resource in preparing a medically-related case.... and global recruitment has never been simpler.

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The Legal Nurse Consultant?

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On the other hand, nurses are accustomed to understanding the whole clinical picture. In the clinical setting, it is the nurses responsibility to update physicians on new developments, keep tract of all disciplines in order to be an effective patient advocate. By virtue in which they are trained, nurses are adept to scanning the entire medical record and cross referencing the content in its entirety, which is the detail oriented, thoroughness you need to figure out all those fine details that win the case. Nurses know how to explain these details in terms that are easily understood. RNs trained as legal nurse consultants, know how to create reports, charts or other tools that keep this information directly at your fingertips and bottom line - a legal nurse consultant is a fraction of the cost of a physician.

Contract LNC versus In-house employed LNC

It is becoming more and more common for attorneys to employ nurses. Many attorneys

entertain in-house employment as means of cost containment. Usually a nurse can be hired in-house at an hourly rate that is less than a contract rate. However there are other factors to consider.. Let's look at office space, health insurance, medical journals, organization/ professional fees, licensing fees, holidays, sick time, and vacation days. Sounding better all the time but what happens when there is a lull in medical-legal case work or a change in attorney staff. You do the math - you may be paying for an employee with no work. So why not share these expenses with other firms that are also in need of LNC services. In a nutshell - a contracted independent LNC does charge a higher hourly rate however; it can prove to be more cost effective, in the long-rum. As an independent, we foot the bill on computers, supplies, programs, professional fees and benefits. Please keep in mind that your livelihood directly affects the independent contractor, which makes your success doubly important to him/her and limits complacency. Because of a diversified population of attorney

clients, most independent LNCs are used to going that extra mile to make sure everyone is satisfied. An independent LNC has opportunity to extend an information network by communicating with other health-care professionals in like or similar fields, which brings additional ideas and resources to your table.