Medical Technologies Transforming Healthcare

"JULY EFFECT" KILLING HOSPITAL PATIENTS?

RESEARCH SHOWS PATIENTS DYING AT ALARMING RATES

Wednesday, June 30, 2010 - The 2010 Patient Safety in American Hospitals study [published by HealthGrades] says **more than 99-thousand patient deaths in U.S. hospitals could have been prevented**.

Yet another new study by the University of California at San Diego [published in the latest edition of the *Journal of General Internal Medicine*] is now calling attention to the **spike in fatal hospital errors during the month of July—known as the "July Effect"**.

These two new studies spotlight an alarming national healthcare problem. More and more hospital patients are dying needlessly, often because symptoms and warning signs are not detected.

What Every American Should Know

- Each day, over 40,000 patient safety incidents occur at U.S. hospitals, costing $8.9 billion in excess healthcare costs. *Even a single incident increases the risk of death to 1 in 10.
- Deaths due to preventable errors spike during the month of July as new medical school graduates begin their residencies.
- Some hospitals are using new non-invasive, wireless medical technologies as a safety net to directly prevent these deaths and injuries.
- Find out about these patient safety nets and how they can protect you/your loved one.

Today new, noninvasive medical technologies are ***saving lives***. Recently, pain medications administered to a young hospitalized infant induced deadly respiratory failure. A new non-invasive monitoring system detected it. Instantly, help was on the way. ***It helped save the child's life!*** But, these new medical technologies are not only impacting patient care, they are transforming healthcare in three very big ways…

#1--Making Hospitals Safer

Ultimately, the two main causes of preventable deaths in hospitals today are:

1. Respiratory failure (when a patient stops breathing)
2. Failure to rescue (when a patient does not receive help in time to save their life)

Both are largely a sign of the times, the result of changing patient demographics—a sicker (due to increased prevalence of co-morbidities/chronic illnesses, including diabetes, high blood pressure, obstructive sleep apnea, etc.), more obese, and more medicated patient population—and lower nurse to patient ratios. And, both are avoidable because virtually all critical events are preceded by physiological warning signs for up to 8 hours. But, because most hospitals largely rely on the existing medical status quo of clinical examinations or rounds where a nurse or physician checks in on the patient every 6-8 hours, these early warning signs can go undetected. So, if a patient in respiratory distress stops breathing in their room and the nurse/physician is not present to recognize the signs...it may go undetected. Without oxygen, a person can die within three minutes.

Today, there's a new Patient SafetyNet system that makes it possible for hospitals to noninvasively, remotely, wirelessly monitor the physiological condition of up to 80 patients on 4 separate floors. The moment a patient's condition deteriorates, the system automatically sends wireless alerts directly to the pager/smart phone of assigned clinicians—prompting an immediate, lifesaving response at the patient's bedside. Research has shown that having a Patient SafetyNet system can not only significantly decrease traumatic critical events and costly ICU transfers, but also improve patient outcomes and reduce the cost of care.

In a recent case, Patient SafetyNet was credited with saving a baby's life when pain medications being administered caused the child to quickly spiral into severe respiratory depression. A very common, but unintended side effect of sedation medication designed to alleviate pain is that they can suppress breathing,

resulting in respiratory depression/failure. So, in essence, the medication keeping the baby comfortable and out of pain also stopped him from breathing. Unfortunately the nurse was down the hall with another patient and couldn't hear the alarms coming from the monitors in the baby's room. But thanks to Patient SafetyNet, the alarms along with specific information about the baby's condition were wirelessly routed to the nurse's pager. The nurse was able to immediately respond at the bedside and initiate lifesaving rescue efforts that revived the infant. They baby recovered fully and was well enough to go home just a few days later. Without Patient SafetyNet, this baby would have had a tragically different outcome. Of course, this is just one example of how advances in medical technologies are making hospitals safer. But, there are others that help clinicians to predict trouble sooner, so they can keep patients out of this critical danger zone altogether.

#2--Predicting Trouble Sooner

Critical events occurring during a patient's hospital stay cause care delays and recovery set-backs that place a significant burden on hospital resources and increase heath care costs. One of the earliest warning signs of an impending critical event often includes subtle changes in a patient's respiration, like the quality (shallow/deep) or rate of breathing (fast/slow). Capturing and assessing these changes have historically been difficult to identify and continuously track. However, the realities of today's changing patient demographics and general care environments are dictating the need for hospitals to find better ways to monitor these early warning signs, which can, if identified early and an appropriate caregiver is alerted, prompt lifesaving intervention before a critical event is registered.

Using a brand new state-of-the-art acoustic monitoring technology (and medical first), hospitals can for the first time continuously capture information about the acoustical quality and pattern of patient breathing to identify the first and often the earliest sign of trouble without intrusive or invasive procedures. Continuous monitoring of the dynamic acoustical respiratory changes that occur allows clinicians to spot impending danger or a lurking condition before it becomes a crisis—providing the opportunity to treat it sooner. What's unique is that all of this information is captured by a small, noninvasive adhesive sensor applied directly on the patient's neck.

#3--Delivering Faster Results

Hemoglobin testing is the most common blood test performed, with over 400 million performed each year in the U.S. alone. It is used to identify a variety of life-threatening conditions. However, traditional hemoglobin blood tests require a painful needle stick and invasive blood draw followed by a time-consuming laboratory process that provides a single snapshot of hemoglobin results at a specific point in time that has already passed.

Today, representing the latest in medical technology innovation, some hospitals are using small, portable noninvasive hemoglobin monitors that allow clinicians to immediately, conveniently, and cost-effectively measure a patient's hemoglobin blood level any time, any where—without invasive, painful needle sticks or time consuming blood lab analysis process. These noninvasive hemoglobin monitors use sophisticated blood analysis technologies (similar to those found in blood lab equipment), but they analyze blood while it's inside the finger to deliver results faster and more conveniently than traditional blood tests. Compact and lightweight enough to fit in one hand, these devices essentially put the power of a large blood lab into a clinician's hand—facilitating on-the-spot, real-time diagnosis and treatment decisions.

Noninvasive hemoglobin monitors are saving lives by immediately detecting internal bleeding in trauma, surgery and recovering hospital patients, but they are also helping to save time and money by reducing the costs associated with lab testing and unnecessary blood transfusions. Blood transfusions pose significant health risks for patients, so avoiding them or limiting the amount of foreign blood introduced to the body is exceptionally important to help guard against transfusion-related complications and deaths. Using continuous, noninvasive hemoglobin monitors, clinicians are able to more conservatively manage blood levels to reduce the number and amount (units) of blood transfusions.

Facing the staggering statistics of medical errors, preventable deaths, and the "July Effect" at U.S. hospitals today is a scary thought for every American. But, medical technologies are providing new hope…and they're helping more patients to get better faster and go home sooner. Patients should check to find out if their physician or hospital has these new noninvasive patient monitoring capabilities because they just may help to save their life, reduce a critical event, and improve their outcome. If their physician/hospital does not have access to this type of technology, patients should inquire into how they will be monitored during their hospital stay.

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