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THE INFORMED PATIENT  
By LAURA LANDRO



## **Vein Attempts? Making Needles Easier to Bear March 7, 2007; Page D1**

Battling Hodgkin's lymphoma, a cancer that began in his lymph nodes, Stephen Glover also suffers from a lifelong fear of needles that sometimes causes him to faint at the sight of a syringe. So when the 59-year-old retired business consultant needs to have blood drawn or an intravenous line inserted for chemotherapy, staffers at the University of Kansas Hospital call in a nurse from a special IV therapy team with expertise in "hard stick" patients.

Hospitals are taking a stab at reducing the pain, stress and harm from venipuncture -- the medical term for sticking a needle in a vein to draw blood samples, start an intravenous drip or administer medications. In addition to creating IV teams for patients with hard-to-access veins or fear of needles, hospitals are beefing up training programs for the medical technicians known as phlebotomists and other staffers who regularly draw blood, and developing stricter protocols for monitoring patients during and after procedures to avoid complications.



Vyteris Inc.

The LidoSite device, made by Vyteris Inc., delivers fast-acting topical anesthetics to the skin using low-level electrical energy.

They are also using new devices such as Luminetx Corp.'s VeinViewer, which helps locate veins easily under the skin with the help of infrared light. And they are offering fast-acting topical anesthetics that work in as little as 10 minutes, including Vyteris Inc.'s LidoSite, which delivers the numbing agents lidocaine and epinephrine to the puncture site through a skin patch boosted by electrical current from a battery-powered device, and **Endo Pharmaceuticals'** Synera, a patch with its own heating element that warms the skin to speed absorption of the anesthetic. The Food and Drug Administration is currently reviewing another product, Zingo, developed by **Anesiva Inc.**, which uses compressed gas to push lidocaine particles into the skin and works in one to three minutes.

Behind the efforts is a growing recognition that one of the most common medical procedures, long viewed by hospital staffers as routine and easy-to-tolerate, can be terrifying and painful for many -- and that serious injury, while relatively rare, can lead to disabling injuries and costly malpractice suits for hospitals. Patients surveyed by health-care satisfaction measurement firm Press-Ganey Associates Inc. rated their lab experience, which includes blood-draw, among the least satisfactory in the hospital. And a recent survey by market research firm TVG Inc., conducted with the support of Vyteris, concluded that more than 14 million adults and five million children over the age of five suffer from high discomfort during procedures or exhibit fear of needles, known as blenophobia.

Needle safety has improved in recent years thanks to programs and devices aimed at protecting health-care workers from exposure to infectious diseases like HIV and hepatitis C. But there are still about 385,000 sharps-related injuries to hospital-based workers annually. While there are no precise statistics on patient harm, with more than one billion venipunctures performed annually, experts say that thousands of injuries can be directly or indirectly linked to botched procedures. Poorly manipulated needles can pierce a nerve instead of a vein, paralyzing a patient's arm or hand. A leaking intravenous line that isn't closely monitored can inflame surrounding tissue and lead to potentially deadly infections, and patients who faint can fall during the procedure and sustain serious head trauma. In addition, an inexpertly drawn blood sample can ruin the specimen to be tested, leading to misdiagnosis, repeated blood draws, and delays in diagnosis and treatment.

## SHARP END OF THE STICK

### Risks to patients from venipuncture

<b>Complication</b>	<b>Risk</b>
Fainting/Dizziness	Head injury/strangulation falling from phlebotomy chair
Nerve Damage	Permanent loss of movement in arm or hand
Vein Damage	Scar tissue from deep probing or multiple needle sticks
Hematoma	Blood pooling under skin; erroneous test results from specimen

*Source: Helen Ogden-Grable, DSI Laboratories/NCH Health System*

"Most people don't have a clue of the complexities involved for the person drawing blood," says Dennis Ernst, a medical technician who runs the Center for Phlebotomy Education Inc. and is coordinator of the nonprofit Coalition for Phlebotomy Personnel Standards, which is pushing for states to require that staff with blood-collection responsibilities meet minimum training standards and be certified or licensed. At present, California is the only state with minimum training and certification requirements, and many hospitals require only rudimentary experience for phlebotomists or train them on the job. "If you don't know the standards and don't perform the procedure correctly you can really hurt patients and subject them to medicines and treatments that are unnecessary," Mr. Ernst warns.

Incorrectly drawn samples can cause hemolysis -- a rupture of red blood cells that effectively ruins the specimen, rendering it useless for diagnostic tests. To improve the quality of specimen collection, Memorial Regional Hospital in Hollywood, Fla., put all staffers who draw blood through a 40-hour course at a local community college and required them to perform 30 needle sticks under the guidance of a lab supervisor. Last fall, the emergency department brought in its own dedicated phlebotomy team, which draws blood for almost 300 patients a day. Since then, the rate of hemolyzed samples has dropped to under 2% from 2.4%, and fewer blood samples are being rejected by the lab because of "short draws" that don't produce enough blood, according to Melinda Stibal, administrative director of emergency and trauma services.

At Naples Community Hospital in Florida, where phlebotomists are required to undergo a seven-week training program, patients are randomly surveyed after procedures about the quality of the experience, including how well the phlebotomist communicated with them.

"Phlebotomists are being permitted to perform an invasive procedure," says Helen Ogden-Grable, clinical educator for the DSI Laboratories unit of the hospital's parent, NCH Healthcare System. "They have to realize that they hold the happiness and satisfaction of the patient in their hands."

The special IV team at the University of Kansas Hospital in Kansas City, Kan., which includes nurses skilled in infusion therapy, created a process that allows staffers to summon the nurse on duty with the greatest expertise in accessing a patient's veins when a patient like Mr. Glover has been identified as a "hard stick," according to Tammy Peterman, senior vice president of patient care. Since the team was created last September, the hospital's scores for "skill of the person who took my blood" went from the bottom quarter to the top quarter of all U.S. hospitals, and the scores for "skill of person who started IV" rose from the bottom half to the top 20% of all U.S. hospitals.

But some patients still experience pain no matter how skilled the technician -- and asking for relief can still be a challenge. Patients may be charged a \$10 to \$25 co-pay depending on health-plan coverage for newer fast-acting anesthetic patches. But they aren't yet in wide distribution, and traditional numbing creams like Emla, which hospitals generally have on hand, take about an hour to work. "Right now, 80% of kids don't get anything, and adults are even further down the pecking order because no one thinks the pain is a big deal, and hospitals don't want to take the extra time or spend extra money" on anesthetics, says William Zempsky, associate director of pain relief at Connecticut Children's Medical Center in Hartford. (Dr. Zempsky has conducted clinical trials with new fast-acting topical anesthetics and worked as a consultant for some manufacturers.)

One strategy is to plan ahead, especially for children. Karen Porter, whose daughter Amy is being treated for a form of leukemia at Connecticut Children's, says the eight-year-old was terrified of the needle sticks required for blood draws and chemotherapy, and would scream whenever she saw a needle until the hospital gave her some topical cream to take home and apply an hour before she was due for the next procedure. "It has really decreased her fear," says Ms. Porter. "She calls it her magic cream."

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