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# Swedish doctors get Phila. lesson in gun wounds

**By John Sullivan**
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The doctors huddled over the boy, making futile attempts to save him.

He was 14, and he'd been shot in the eye.

Linda Lennstrom, a 28-year-old surgery resident from Sweden, stood off to the side at the Hospital of the University of Pennsylvania last week as doctors lifted the boy's slender limbs, looking for wounds. She was watching one of the few gunshot victims she is likely to see in her career.

In cities such as Philadelphia, where 317 people have been shot during the first 2-1/2 months of this year, gunshot wounds are so common that trauma surgeons here are considered global experts, often pioneering techniques to save lives.

But in Sweden, one of the world's safest countries with only a few dozen lethal gun assaults per year, bullet wounds are a medical oddity.

"I have seen just one shooting injury in my 15-year career," said Magnus Frostorp, 41, a surgeon visiting from Vastervik, a small town in southern Sweden.

Frostorp and Lennstrom are part of a novel exchange program launched this month by HUP and Sweden's Linkoping University's Center for Disaster Medicine and Traumatology. The goal is to teach Swedish surgeons how to better treat injuries they rarely see, such as knife and bullet wounds.

This week a team of four surgeons arrived, following six others who had come to HUP earlier this month. The teams, which are not allowed to treat patients, spend two weeks observing American doctors, who follow a well-rehearsed script for handling the worst trauma cases.

The system, known as Advanced Trauma Life Support, relies literally on the ABCs, asking surgeons to remember to secure an airway, make sure the patient can breath, check circulation, look for any neurological disability and make sure the patient does not die from exposure.

"You could be sewing up a laceration, while someone dies of something basic, like they can't breathe," said Swedish surgeon Mehmet Gozen, 51, who has treated just one gunshot wound in 23 years.

At 9:30 Monday night, an ER alarm squawked: A patient was on the way. The four Swedish surgeons draped on lead-lined smocks to protect themselves against any X-rays. They snapped on purple latex gloves and a transparent plastic guard to keep blood from spraying their eyes.

More than a dozen doctors and nurses crowded into the trauma bay.

"OK, we have a stab wound to the head coming in," said trauma surgeon Patrick Kim, 37, who has worked in the trauma bay since 1995.

As the Swedish visitors clustered around him, Kim - his running shoes stained a dark red from an earlier trauma - said he was concerned about possible neurological injury.

When the man arrived, paramedics said that he had been found wandering on the highway and that he had a slight wound near the back of the head.

The man was fortunate. Knife wounds to the back of the head are often less lethal because the brain there is protected by a thick web of muscles and the bony mass of the cranium.

Trauma doctors don't even have a classification for wounds in the back of the neck; most potential damage comes in the front, which is laced with vital airways and arteries.

The man was soon off to get a CT scan, and the Swedish doctors huddled to talk about what they had seen.

The man would not have been treated so intensely in Sweden, said Peter Anderssen, another Swedish surgeon. "But we may have missed something as a result."

On average, HUP treats one gunshot wound per day, according to C. William Schwab, chief of the division of trauma and surgical critical

care, who has helped develop violence-prevention programs. In January, the hospital treated 42.

Penetrating wounds are difficult to treat because a bullet can pass through a body without touching anything vital, or it can break into tiny fragments that slice up organs.

"We really learn more here in two weeks than we can learn anywhere else," said Lennstrom. "They are practicing all the time."

HUP surgeons have been visiting Sweden since 1998 to lecture, review lab work and give guidelines for treating trauma. But Swedish surgeons craved first-hand experience, prompting program director Benjamin Braslow to invite them here. Braslow now wants to do the same for surgeons in Portugal and Argentina.

Much of what visiting doctors learn Schwab helped to pioneer, including "damage control" surgery, where doctors perform a series of shorter surgeries rather than the marathon operations common in the 1970s and 1980s. Before the technique, surgeons would repair the wounds only to see the patients die later from clotting and organ failure.

Schwab learned trauma surgery while operating on wounded soldiers during Vietnam. In the 1990s, he started doing minimal surgery until the patient could be stabilized, often using shunts to bypass damaged blood vessels and stitching together abdominal wounds to prevent deadly infections. Surgeons would repair the remaining damage later. The technique is being used today in war zones such as Iraq.

Last week Swedish surgeons watched trauma doctors treat eight gunshot wounds. Two of the victims, including the boy shot in the eye, died. To doctors who see few violent injuries, the experience can be traumatic.

Lennstrom said she was shocked to see so many African American men shot, especially ones so young.

"The skin looked so smooth," Lennstrom said. "The rest of the body was without a scratch, so pure, and then there is this brutal injury to the head. It's so hard to match the two together."

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