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Nursing Lessons From War

Frontline protocols developed during military conflicts have benefited nurses and patients at home as well.

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By Valerie Neff Newitt

Blood formed menacing puddles on a single street in Baghdad on what has been called the "deadliest day" of the war in Iraq.

Sudip Bose, MD, FACEP, FAAEM, did his best to provide care to 150 people strewn among the rubble.

It was a holiday in March 2004, the street was crowded with celebrants, and Bose was serving with a U.S. Army mechanized infantry unit, usually offering frontline care.

All of a sudden: pow, pow, pow! Three suicide bombers detonated.

"It was just a couple of medics, a PA, and myself on the scene. We had many injured and limited supplies; we had to make decisions fast," said the Odessa, TX-based doctor who is also an associate professor of emergency medicine at the University of Illinois.

Frontline Insights

Historically, for medical science to experience a sudden growth spurt, it takes an extreme circumstance. The amplitude of injuries and deaths on the war front is only tempered by the resultant lessons learned for saving lives.

Notable examples are mass inoculation against smallpox in the Revolutionary War; transporting patients by ambulance, medical records and the use of anesthesia in surgery in the Civil War; and the widespread use of penicillin in World War II.

CONDEMNED PATIENT

- Meeting with Saddam Hussein brings clarity about providers' mission.

"Important things are coming out of the wars in Iraq and Afghanistan; I've seen them with my own eyes," said Bose. "For example, we're learning how to better handle mass casualties. When a bomb went off in Baghdad, it was never just one patient; there were dozens all at once.

"We couldn't just go to the patient who was screaming the loudest; we couldn't spend all our assets on someone who was going to die anyway. We had to spend time and resources on a life that possibly could be saved. It's tough swallowing the difficult realization that some patients only will get pain meds and comfort measures. But you have to go on to the next person."

Maria Tackett, EdD, MSN, RN, CEN, CCRN, is nursing director for neuro, trauma and orthopedics at Hartford Hospital in Hartford, CT. A U.S. Army Reservist, she was deployed in 2007-2008 to Iraq where she worked at the 325th Combat Support Hospital in Anbar province.

"The environment was quite austere," she recalled, "and hot. Temperatures were typically 110-120° F."

Extreme Injuries

Far worse than the heat were the injuries.

"I've had a 30-year career in nursing, yet I've never seen burn injuries as severe as those from explosives. And high-velocity weapons injuries are much different than gunshot wounds we see in civilian life," Tackett said.

Bose noted improvised explosive devices (IEDs) and unexploded ordinances underlie the big injury pattern for soldiers in the Iraq and Afghanistan theaters.

"There are four levels to these blast injuries," he noted.

"Type one comes with the blast itself, like a huge balloon popping - you might get ruptured eardrums, hollow organs [lungs] popping, intestines rupturing. Type 2 comes from shrapnel and pieces of metal flying at you at 100 mph, piercing your body. Type 3 is when you get picked up by the blast, thrown against a wall, and break a limb. And Type 4 happens when the bomb is laced with a chemical, like cyanide."

Bose recalled the trauma suffered by one of his patients, a gunner: "An IED went off and he got penetrating injuries all over his body and a piece of shrapnel went straight through his trachea. His humvee rolled over, and amputated one of his limbs. He was also ejected, into water, so he was also hypothermic and was treated for drowning. Sadly, he eventually succumbed to his injuries."

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While such complex injuries are not uncommon, the greatest threat to soldiers wounded on the frontline is bleeding.

"In civilian life we're trained to the ABCs [airway, breathing, circulation], in that order," said Tackett. "But the military asked us to adjust; they wanted us to take care of circulation first. Most soldiers were dying from bleeding, so we had to control hemorrhage first."

Toward that end, there is a resurgence in the use of tourniquets on the front. "Many of the injured soldiers put them on themselves; if they didn't, we did. I think we'll see a reexamination of tourniquets in civilian life," declared Tackett.

Bose agreed, noting, "Tourniquets have gotten a bad rap. The number one cause of death on the battlefield is hemorrhage; tourniquets save lives out there."

Care Moves Forward

Bose also pointed to the "golden hour" following an injury - that critical time in which lives will be saved or lost. "On the frontline, we're moving care forward."

Tackett further explained the concept. "We bring care very close to where the injury happens," she said. "Medics in the field start care and with helicopter evacuation we get the injured to advanced care quickly."

Bose added, "We actually do damage control surgery right on the battlefield. The patients fly with their bellies open, unsutured, to Germany where they finish up the surgery. These new strategies are lowering fatality rates. That means patients who, years ago, would have died are now living. They're coming home."

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There are other protocols being redefined on the frontline as well. "In Iraq we had clinical practice guidelines, some of which are cutting edge and will define how we approach trauma in civilian life," said Tackett.

"For example, I think we're going to see a change in how we do fluid resuscitation. We used to give people two liters of fluid right away, no matter what kind of trauma situation they were in. And we avoided using blood sometimes, due to the dangers of blood use. But the guidance in theater was to use blood earlier. Earlier blood use is being linked to higher survival rates."

Bose spoke to another frontline discovery pertaining to fluids. "We're learning that less is more, and we're leaving patients' pressure at 80 systolic. We used to give them fluids to get to 120 systolic. But data is showing when pressure is left at 80-90, patients do better."

Data collection, too, has been perfected on the warfront.

"On the battlefield you get massive amounts of data on numbers and injury patterns. By necessity, we are redefining the way we handle data collection and research," said Bose.

Critical Leadership

As officer in charge of the ED at a combat support hospital, Tackett relied on her nursing experience to "provide calm, focused leadership and set the tone for the team, many of whom were just in their 20s. I learned how important the leadership part of nursing is - it allows one to be adaptable, to avoid panic and to handle the situation at hand, no matter how extreme it might be."

Tackett also observed wartime "mindsets" that could improve the profession of nursing at home.

"In a military atmosphere, there is no horizontal violence. We were a small team - seven nurses working 12-hour shifts, 6 days a week. There is no coverage for sick time if someone is out," she recalled. "Believe me, we were very interested in supporting each others' health and mental well-being."

And maintaining that well-being, said Tackett, also translated to keeping a safe environment for herself and her team.

"Those of us who have deployed have a heightened sense of safety. We're more aware of potential for danger and violence in the ED setting. We can bring that awareness home to hospitals in the U.S. We understand the need for uncluttered exits, alarm systems to

summon security, knowing how to call for extra help. We know to position ourselves relative to the door, always mentally noting ways to exit an area. That doesn't come from nursing training necessarily, but it is an essential in military training."

Another wartime mindset worthy of replication at home, said Tackett, is attitude. "In the military, the discussion is never about whether or not you can do it; it's just a matter of how you can do it. But you *will* do it," she explained. "In civilian life there seems to be so many barriers - insurance, physician's acceptance, red tape. In the military it's streamlined; you just do it."

Bose expanded, "You get things done with what you have. And you better have ingenuity. If you don't have a cervical collar, you might have to take a soldier's boots and tie the soles against his ears to immobilize the neck. If he breaks a leg, you might have to tie an M16 to the lower extremity to function as a splint. But still, you get the job done."

The Legacy of War

Now, 9 years since the U.S. military stormed into Afghanistan and 7 years since the invasion of Iraq, the medical legacy of these wars is making itself known in the soldiers who return home.

"It's the back-end care," said Bose in trying to capture that legacy in mere words. "More people are surviving in this modern wartime. In the Korean War, if you were an amputee, statistically you were probably going to die. Now, amputees are surviving and leading extremely productive lives. This has led to advancements in occupational therapy - teaching veterans to use bionic arms, prosthetic legs."

Yet Bose said the greatest part of the back-end care will not be physical in nature.

"Soldiers may not have a scratch on their bodies, but they will have mental abrasions - post-traumatic stress disorders, traumatic brain injuries, to name two - for years to come. Maybe forever."

The doctor paused, then commented, "The battle goes on, right here. But the heroic deeds will shift home to nurses and other providers in the ED, trauma centers, OR, thousands of miles away from the battlefield. I hope they understand what heroes they can be to these returning soldiers, what a difference they make.

"Medical innovations and techniques do evolve. But one thing you learn on the battlefield is it's the people who make all the difference."

Valerie Neff Newitt is senior associate editor at *ADVANCE*.

sidebar

Condemned Patient

Meeting with Saddam Hussein brings clarity about providers' mission.

Sudip Bose, MD, said he didn't realize the immensity of the moment when he provided care to one particular Iraqi - Saddam Hussein.

The former president of Iraq was in need of care during his detention in Baghdad prior to his execution. It was a strange juxtaposition of life in the present and certain death in the foreseeable future.

Was the experience daunting for Bose? "There was no time for daunting," he retorted. "It all happened so fast. It wasn't until later that I realized the weight of the moment."

Still wishing to safeguard the confidentiality between himself and the now-deceased Hussein regarding his medical condition, Bose would only say, "His impending fate was very obviously on his mind. He did a lot of gardening right in his little cell to occupy his thoughts."

What Bose did want to share was the lesson he took from the unusual meeting.

"Sometimes in Iraq, we'd take care of a soldier, then 15 minutes later we'd have to provide care for the insurgent who shot him, kicking and spitting at us as we tried to listen to his lungs. It happened many times.

"Sometimes here at home you're in a situation where you have to take care of a criminal, a gang member, a murderer. I learned it's not our job to decide who is innocent or guilty. You just have to provide the best care you can.

"Period."