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When fire strikes the surgical suite

Patients ignited during surgery, other procedures

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STAFF PHOTO: BILL KLOTZ
Kathleen Flynn Peterson is bringing suit where patients are injured in operating room fires. "It's a frightening prospect that you could be ignited in an operating room. It's crazy," she says.

A fire triangle is created in an operating room when a flammable substance is used to sterilize the patient's body, the environment is oxygen-rich and it is ignited by an electrocautery tool or other medical device.

An explosion or fire may result, with the patient's body the kindling.

Fires are "never" events in medical-speak. They are just not supposed to happen, ever. But they do, albeit rarely.

"It's a frightening prospect that you could be ignited in an operating room. It's crazy," said Kathleen Flynn Peterson of Robins, Kaplan, Miller & Ciresi, who has settled one OR case and has two pending.

Chris Messerly, also of Robins Kaplan, has handled about six fire cases. "These cases are not uncommon but they are settled quickly and quietly," Messerly said. Many of them are grounded in products liability instead of or in addition to medical malpractice, he said.

Baby warmer

Messerly, Philip Sieff and David Bland represented Maverick Werth, a newborn who was burned not in surgery but in a warmer in a nursery. The device has an arm with a heating tube that extends over the baby to keep him warm. But pieces of the heating element would detach and fall on the baby, and the device had been recalled because of that. It has now been banned by the U.S. Food and Drug Administration.

Nurses were present and were able to put out the fire, but Maverick had second- and third- degree burns over about 20 percent of his body. The most serious were on his arms and on his scalp.

When he was 3 years old, he had surgery involving multiple incisions on the scalp to remove the burned skin so hair would grow. He had sufficient movement in his arms and wrist that surgery was not necessary.

After Maverick's ordeal, the Legislature considered changing the law to allow compensation for the parents, Messerly said. The mother was unable to breast-feed the baby and both parents lost special time with him, Messerly said.

Res ipsa loquitur in action

Although operating room fires are preventable — they may be the very definition of res ipsa loquitur — that doesn't make the cases easy to settle. To the plaintiff, the question is only damages. However, as in many medical

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negligence cases, a lot of players are involved. "Part of the discovery process is the defendants trying to determine (liability) among themselves," Flynn Peterson said.

Flynn Peterson has had four cases involving patient fires, and two are settled. The cases are vigorously defended, involve multiple medical providers and are subject to confidentiality agreements so the settlements the firm has achieved are not available in detail.

One case involved a man who suffered burns to his face and chest after an explosion that occurred when the man's surgeon was performing a routine procedure with an electrocautery tool.

The medical providers did not follow appropriate procedures to minimize oxygen discharge and the presence of flammable prep solution, Flynn Peterson reported. Flynn Peterson and attorney Brandon Thompson recovered $1 million from a group of providers and the case is ongoing.

Cutting and cauterizing

Two open cases are textbook examples of operating room fires and how they start, Flynn Peterson said.

One involves a fire at Fairview Lakes Health Services in Wyoming, Minn. According to the fire department report, the patient was prepped and the medical team was cutting and cauterizing when the fire occurred.

The fire started at the patient's operating mask, and after the oxygen mask hose burned off, it acted like a blow torch, the report stated. The patient had first- and second-degree burns on his face and neck and down his right side.

The state fire marshal found that the facility was not in compliance with fire codes, that the staff did not allow the flammable prep solution to dry, that it applied the surgical drapes too quickly and that it failed to take proper

precautions when electrical devices were used and oxygen is flowing.

In another case, at New River Medical Center in Monticello (now CentraCare Health-Monticello), the patient had to be airlifted to the Hennepin County Medical Center burn unit. The fire started under similar circumstances to the fire in Wyoming and the fire alarm system was not activated, according to the fire marshal's report. Investigators noted that the facility did not call 911 or the fire department at the time of the fire. The patient sustained burns over 20 percent of his body — to the scalp, face, neck, upper chest and arms.

Again the cause of the fire was a spark from a cautery instrument in an oxygen-rich atmosphere. According to the fire report, "[I]t was determined that the use of the cautery pen at a site where the oxygen was venting from created the necessary conditions needed (heat, fuel and oxygen) for a fire to ignite and spread."

Probably because many cases settle "quickly and quietly," there is scarce published information about the value of the cases. While the cases are obviously fact-specific, reported verdicts range from about $5,000 to about $1.5 million, with one $2.4 settlement in South Carolina.

Professional organizations are speaking loudly and clearly, such as this paper from the American Society of Anesthesiologists: "[A]nesthesiologists should collaborate with the procedure team for the purpose of preventing and managing a fire. … Follow local regulatory reporting requirements. … Treat every fire as an adverse event, following your local protocol."

Numbers, and some advice

A recent report from The Joint Commission estimates that there are 550 to 650 surgical fires per year. An American Society of Anesthesiologists task force report from 2008 estimates that there are 50 to 200 operating room fires per year.

OR fires account for about 1.9 percent of liability claims from surgery, according to a 2013 report from the National Institutes of Health. They usually result from the fire triangle.

The NIH report states:

"Electrocautery-induced fires during monitored anesthesia care were the most common cause of OR fires claims. Recognition of the fire triad (oxidizer, fuel and ignition source), particularly the critical role of supplemental oxygen by an open delivery system during use of the electrocautery, is crucial to prevent OR fires. Continuing education and communication among OR personnel along with fire prevention protocols in high-fire-risk procedures may reduce the occurrence of OR fires."