

## *Who advocates operating rooms are wet locations?*

**Physicians across the U.S. from a wide array of disciplines agree that operating rooms should be designated as wet locations. Isolated power systems enhance safety to protect patients and medical staff from potential electrical hazards in these areas.**

“Modern operating rooms frequently have standing water and saline or blood on the floor. This is especially true during cystoscopic and arthroscopic procedures. The presence of a wet floor combined with the large number of electrical devices used in modern operating rooms presents a hazard to both patients and OR personnel. Because of this, I believe the additional protection provided to patients and personnel by use of isolated power or ground fault interrupted circuits is warranted.”

—Scott A. Schartel, MD, Temple University Hospital

“As an anesthesiologist that has spent thousands of hours in operating rooms, I have witnessed numerous liquid spills onto electrical wiring and wiring connections (Extension cords). I am also an engineer, and worked for EXXON for 5 years. As an engineer, I would design the OR as a wet environment.”

—Hector Vila, Jr., MD, Mobile Anesthesia Specialists

“In my experience there are many occasions when bodily fluids, saline, or cleansers are found/used in the operating room. This would be considered a “wet area.” For the safety of our profession I hope this is changed.”

—Autumn Shaffer, DO, University of Arkansas for Medical Sciences

*“Given the patient and personnel implications of electrical hazards that are present during high-acuity patient care, we must follow first principles of electrical safety and provide suitable protection.”*

—Julian M. Goldman, MD  
Massachusetts General Hospital

“During surgery, patients are especially susceptible to the effects of electrical leakage currents. Blood and saline soaked sponges and surgical drapes provide a conductive path between patients and operating room equipment which may or may not be properly grounded. Power cords are subject to pulling, twisting, and being rolled over by heavy equipment, potentially compromising the safety ground function. In addition, anesthetized patients are unable to respond to the sensation of electrical leakage currents, increasing the risk of cardiac arrhythmia. Saline, water, and blood are often spilled on the floor, and cannot be immediately removed because of ongoing surgery. Finally, the number of types of electrical equipment used in operating rooms has increased exponentially over the last 15 years. Anesthesia machines, previously pneumatic, are now electrically operated. For all of these reasons, patients in operating rooms should be afforded AT LEAST the same degree of electrical protection we require in household lavatories and kitchens!”

—Jeffrey B. Gross, MD, University of Connecticut School of Medicine

“Operating rooms increasingly have more electrical equipment. Many procedures involve using electrically conductive solutions. Most body fluids (people do bleed during surgery, after all) conduct electricity quite well. I was quite surprised to hear that there is consideration to not even require basic ground fault protection, required in my kitchen and bathrooms at home, from the operating room.”

—Edward Krempasanka, MD, Physicians Anesthesia Associates

*(Continued)*

“Standing water, often in the form of crystalloid fluids or blood or urine, can frequently be found on the floors of operating rooms during cases. This is an obvious hazard to patients and OR personnel since numerous electrical devices are utilized in the care of each patient in the OR, and electrocution risk is evident.”

—Kerry Kreidel, MD, University of Arizona Medical Center

“I have practiced anesthesia for over 20 years. My responsibilities include overseeing purchasing and maintenance of anesthesia equipment and participating in the design and construction of new operating rooms. I have participated in opening over thirty operating rooms in five different locations. The operating room is a wet environment. ... One series of events recently caused us to remind our staff on where to locate IV poles. Assorted actions caused spillage of intravenous bags onto the anesthesia machine causing water damage in one of the control modules and requiring replacement. There are numerous instances of patients bleeding onto the OR table causing the fluids to come into contact with the monitoring cables. Even more common are episodes where substantial amounts of fluid accumulate on the floor. This results in surgical team members standing in a wet environment while using electrical devices such as electrocautery or defibrillation paddles (used in most cases of cardiac surgery). It is so plain to me that the operating room is a wet environment that it amazes me that anyone would consider it not to be wet.”

—Stephen M. Robinson, MD, Oregon Health and Science University

“Operating rooms frequently have infusion or irrigation fluid leaking onto the floor during surgery. Fluid or blood on the floor can occur even without notice when room lights are turned off for some special procedures, and therefore, is a clear and present danger for the patient and OR personnel. In addition, many electrical devices in the OR create an electrically hazardous environment in which millions of patients are cared for each year in the US.”

—Gary Zhou, MD, Yale New Haven Hospital Temple Medical Center

“Water, saline, other fluids and blood are frequently found on operating room floors. This, in combination with the many electrical devices present in the OR, creates an electrically hazardous environment for patients and OR staff alike. There are modern ways to control this risk and designation of operating rooms as wet locations will help to accelerate inclusion of these procedures in the day-to-day practices of all health care facilities.”

—Katherine Marschall, MD, Yale University School of Medicine

“It is obvious to me from several decades of working in operating rooms and other anesthetizing locations, that they are indeed wet locations, so much so that sometimes water and other fluids even wick from the floor up the scrub pants of O.R. personnel. (I’ve seen this especially in arthroscopies and cystoscopies). O.R.s are filled with an increasing array of electrical equipment, with power cords and patient cables frequently on the floor and sometimes in contact with water or other fluids. This can pose a potentially hazardous environment for patients and staff.”

—Kenneth Mirksy, MD, New Jersey State Society of Anesthesiologists

“Operating rooms frequently having fluid puddles that collect at the feet of staff while providing patient care. The frequency of occurrence, volume, and electrical safety implications may be difficult to predict. Given the patient and personnel implications of electrical hazards that are present during high-acuity patient care, we must follow first principles of electrical safety and provide suitable protection.”

—Julian M. Goldman, MD, Massachusetts General Hospital

*Source: National Fire Protection Association. Report on Comments. A Compilation of NFPA® Technical Committee Reports on Comments for the 2009 Annual Revision Cycle. © 2009*