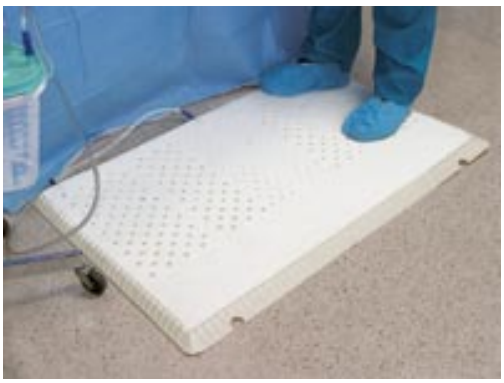
Getting a Firm Grasp on Fluid Waste

One of the unfortunate by-products of a number of surgical procedures is fluid waste. This mixture of irrigation solution, blood, and other body fluids can be quite infectious and incredibly messy. Uncontained, this fluid waste can expose the surgical staff to infection, as well as injury resulting from slip and fall accidents. It also compromises the sterility of the surgical arena.

Fortunately, there is a broad range of products and devices specially designed to help the OR staff collect, contain, and dispose of fluid waste. Absorbent mats help to keep the OR floor dry and safe for the surgical team, suction and canister systems can collect the fluid at the point of generation and hold it until it can be properly disposed of, and a variety of fluid drains and evacuation systems can dispose of the waste with minimal exposure to the staff.

Following are a selection of companies that are at the forefront of fluid waste control technology, and the innovative products they have designed to keep those in the surgical suite safe and dry.

The BASS Fluid Control System from BASS Medical, Inc. is a disposable mat that keeps the OR floor dry as it collects, contains, and eliminates the fluid produced during wet procedures. The fluid falls onto the BASS mat, is contained in the mat, and then is evacuated via suction tubing.



The contaminated fluid contains blood products, cystoscopy, hysteroscopy, and arthroscopy, and contains fluids.

Since the BASS mat keeps the floor dry, the surgical staff isn't sliding, slipping and falling in contaminated fluid on the floor. The only contact the staff has with the contaminated fluid is on the field and with regard to emptying of the suction canisters. The contaminated fluid is contained and therefore manageable. And, since the BASS mat is disposable, there is little risk of cross contamination.

Colby Manufacturing, a leader in fluid control products for over ten years, offers a few different products to collect and contain fluid waste. The WaterBug&reg Quiet Floor Suction System connects to existing wall or portable suction units and removes unlimited amounts of irrigants, blood and other body fluids from the floor during arthroscopy, cystoscopy, hysteroscopy, and other very wet procedures. Constructed of durable plastic, the WaterBug comes with 12 feet of flexible, standard-size tubing that attaches from the side. This gives it a very low profile that reduces tip and trip hazards. One feature that differentiates the WaterBug from other floor suction devices is that fluid is captured from the top as well as from the bottom, maximizing fluid containment efficiency. In addition, the absorbent material eliminates noise and guarantees an efficient operation as it glides across the floor without ever sticking.

Colby's SurgiSafe&reg Absorbent Floor Pads help protect all operating room personnel from contact with potentially contaminated substances by quickly soaking up and retaining blood and body fluids, as well as caustic agents, betadine, and irrigants. Functioning through a wicking action, SurgiSafe Pads quickly absorb up to 25 times their own weight. They conform to uneven floor surfaces, remain flat without bunching, and help prevent slipping on wet floors; and because no hookup to additional apparatus is required, there is little to trip over. SurgiSafe Absorbent Pads come in a variety of sizes and textures to meet every fluid control need.

Colby also offers a fluid solidifier to accommodate handling and disposal of infectious fluids. ViraSorb&reg Super Solidifier, available in single-use or multi-use bottles or in dissolvable pouches, gels infectious blood and body fluids by quickly penetrating the canister contents without stirring or agitation. Once gelled, the contents will not crystallize or become slippery and will remain solid throughout the disposal process to guard against spills or leaks.

DeRoyal has a very extensive waste fluid management portfolio that includes an impressive variety of canisters, fluid containers, liner systems, and a fluid waste evacuation system. The DeRoyal Crystaline&#153 Rigid Canister system and ReliaFlex&#153 Liner system are equipped with the latest technology in filter design. The hydrophobic filter prevents any fluid backflow through the vacuum port. Further, once the filter is wet, it completely blocks suction flow to the canister preventing regurgitation from any port. The filter also traps aerosolized microorganisms and particulate matter, and provides filtration of Staphylococcus aureus at 99.5% efficiency. Both the canister and liner systems feature sealing lids or locking ports that help the OR staff avoid contact with the infectious materials.

To address medical waste disposal concerns, DeRoyal offers the Aqua-Box. The Aqua-Box is a canister and liner evacuation system that quickly empties and disposes of waste fluid generated during surgery directly into the healthcare facility’s sanitary sewer system. The compact Aqua-Box works with any waste fluid containment system, and is designed to be mounted on any utility room or operating room wall, preventing waste fluid from ever having to leave the room. The Aqua-Box also offers the option to add sodium hypochlorite (household bleach) to the fluid waste as it automatically discards it into the sewer. This keeps the potentially hazardous fluid in a closed system the entire time.

AVEC Scientific Design offers two lines of products, Quick Wick and Suction. Various absorbent materials known as Quick Wick products are available in mats, booms, and pads. They absorb 5, 4, 3, or 1 liter(s) of fluid each. Among the most popular AVEC products are the super absorbent Quick Wick floor mats, which absorb fluid and can then be discarded. These mats are much safer to use than linens, and they hold the fluid when they are lifted to be discarded.

The Suction line consists of the Black Hole, the Suction Mat, and the Black Hole FLASH. These products utilize AVEC Scientific’s patented wicking action, which eliminates the slurping noise common to most suction devices and keeps the products from sucking themselves to the floor. These products are also designed to wick in only fluid and not solids. This helps to avoid clogged pipes, weakened suction power, and potential and costly damage to the suction unit’s compressor. AVEC’s latest offering, the Black Hole FLASH is highly automated and very inexpensive. When stepped on it still functions, and since the tubing is smaller in diameter, it uses half the suction power of all other fluid management products.

Designed to absorb all water-based liquid, the Super Absorbent Pad from Health Care Logistics retains materials and does not drip, due to a polymer that forms a gel when it soaks in liquid. Designed to replace suction devices that leave liquid behind and require lengthy cleanup, this pad is ideal for procedures such as endoscopy-based diagnostics and surgery, labor and delivery, and in urology and arthroscopy procedures. The pad, which measures 15 3/8 inches by 29 inches, holds up to 1 1/2 gallons and offers a simple, inexpensive way to collect and hold liquid hygienically and safely without drips.

Cardinal Health provides a total fluid management solution from collection to disposal. The core of their system is their line of suction canisters. Designed for safety, economy, and convenience, Cardinal’s canister line includes the Guardian&#153 hard canister that provides an easy set up and a locking lid, the Flex Advantage&reg flexible liner system with a lightweight liner to minimize storage space and reduce disposal costs, the semi-rigid CRD&#153 canister that is lightweight and easily compacted, and a large volume hard canister (LVC) that provides a way to better collect waste in fluid-intensive procedures.

To complement the canisters, Cardinal Health offers a full line of yankauers and suction tubing that provides for optimal control, maneuverability, and visibility with minimal tissue trauma in removing fluids from the surgical field. For optimal convenience, as well as to provide time and money saving solutions, Cardinal also offers standard and customized suction kits.

To complete their fluid management offerings, Cardinal's SAF-T Pump provides a closed disposal system to quickly and safely dispose of liquid waste into the sewer with no pouring required. When the valve on the SAF-T Pump is opened, water flows through the pump. This water flow creates suction that draws the contents of the suction canister through the dip and pump tube. The combined liquid stream then flows directly to the sanitary sewer, thus eliminating the risk of exposure to splashing waste or aerosol droplets that can form when canisters are emptied into open sinks. Since the system is powered entirely by tap water and does not require motorized or electrical components, it is extremely reliable and virtually maintenance-free.

Promethean Medical Technologies's Fluid Control Island&reg family of products are fluid capture devices designed for several surgical specialties that utilize endoscopic and resectoscopic instrumentation, requiring high fluid volumes for visualization, distention, and irrigation. The Island products proactively capture, contain, and continuously evacuate fluids to existing canisters or suction recovery systems for immediate measurement, without the need of a person to operate or maintain it. The Island products are all based around a low profile capture basin that evacuates on a constant basis. They all have an anti-splash surface material and, on the larger stand-on units, an anti-slip component is incorporated. Once a procedure is completed, the Island products are designed to fold onto themselves for disposal, thus reducing staff exposure to contaminated fluids.

Dornoch Medical Systems' Transposal product line is designed to safely serve the entire hospital from ER to OR. The Transposal utilizes reusable 1800 cc or 2800 cc canisters, which can eliminate as much as 25 percent of facility red bag waste. Optional 24- and 48-liter capacity High Fluid Carts simplify fluid collection during arthroscopy and cysto cases.

During a procedure, Transposal's rigid canister and reservoir design prevents splash-back common with flexible liner systems. After a surgical procedure is complete, canisters and reservoirs are securely transported to the Transposal processing equipment in decontamination or central sterile processing areas in purpose-built closed transport carts. The Transposal system then empties, cleans, and disinfects all fluid collection equipment for the ultimate in patient and employee safety. Transposal's patented disposal process is completely enclosed, and unlike competitive canister based systems, Transposal is the only system that cleans and disinfects reusable components in accordance with AORN and APIC standards.

The Environ-mate™ DM6000 Series Suction-Drain™ Systems from MD Technologies offer low-cost, practical solutions to fluid waste management concerns. The compact, wall-mounted units collect fluid directly from the suction field and dispose of it directly into the sanitary sewer. The healthcare staff is isolated from exposure to suctioned fluids, and cost is minimized due to reduced requirements for disposable supplies. Three different Environ-mate units are available. The DM6000 is used in SPD/Utility Rooms and is offered with an optional footswitch. The DM6000-2 is intended for use in Endoscopy and has two independent suction inputs for EGD, ERCP, and Bronchoscopy procedures, or to offer a back-up suction source in single-field procedures such as colonoscopies. The compact DM6000-2A has an unlimited fluid capacity, and is ideal for use in the operating room during Arthroscopy, Urology, and Cystoscopy procedures. An optional fluid totalizer records fluid volume aspirated.

Each surgery presents its own difficulties and obstacles. In procedures that produce a high volume of fluid waste, the potential for infection and the ensuing mess are a major concern. Using the right combination of fluid control products throughout the procedure can mean the difference between a safe and successful surgery and a potential disaster. So, it is a comfort to know that there are so many options available.

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