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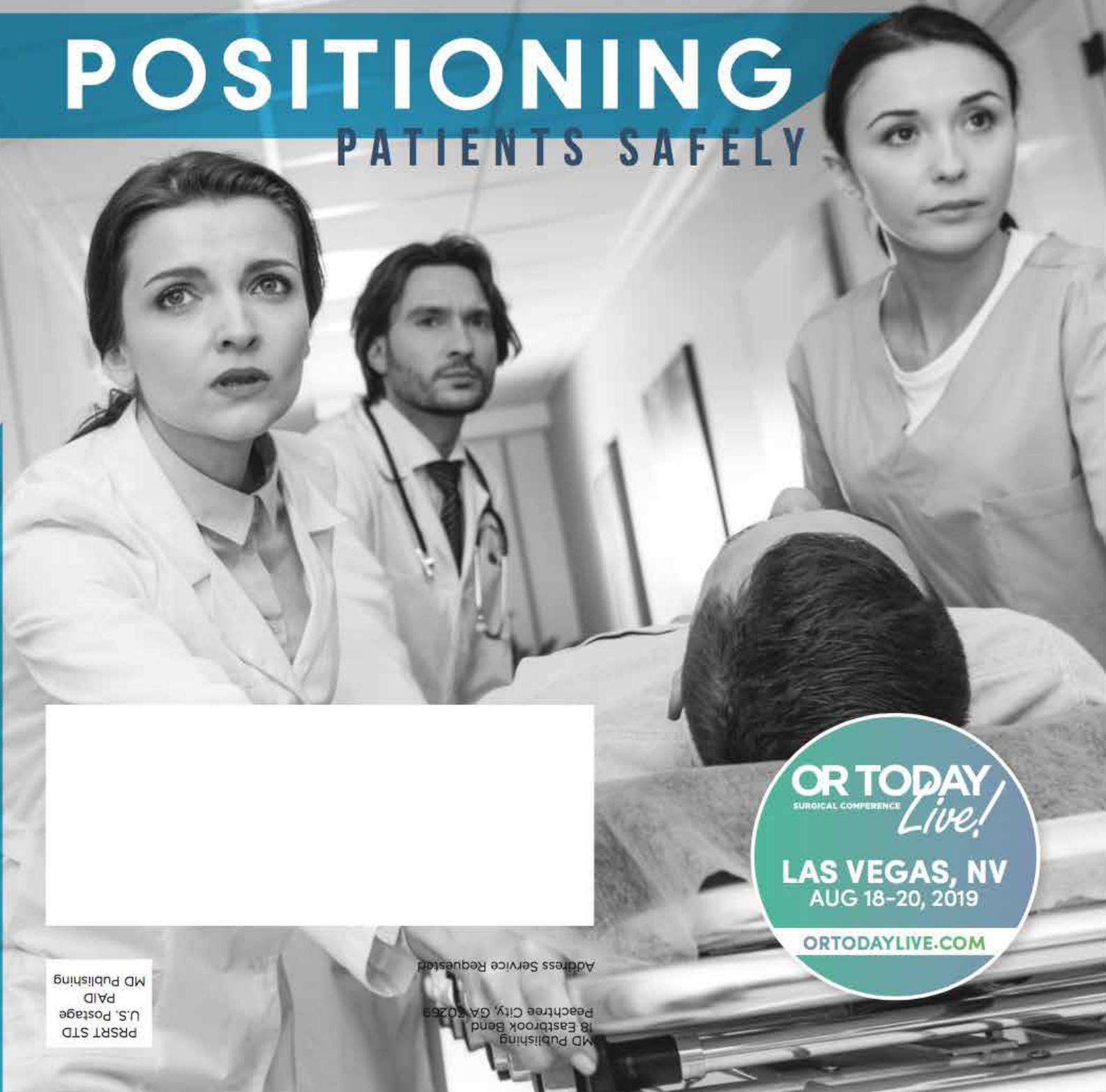


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C Change Surgical is a small, highly focused U.S. firm formed in 2004 by a core group of variously skilled and experienced medical device executives.

These executives operate a medical technology company passionately devoted to solving clinical problems and improving processes while reducing direct costs. They achieve success by developing technology that clearly delivers important, helpful improvements and costs less to use.



Protective Container System™

During research and development for C Change Surgical's automated slush system, many clinicians expressed the need for change and improvement. And, C Change's leadership applied the guidance provided by many experienced clinicians during system development.

C Change Surgical developed an automated 21st century sterile slush system that delivers new levels of efficiency, reduces labor, increases supply output and lowers cost. C Change Surgical leaders emphasize the reduction of direct costs as a major objective when developing new technology. Listening closely to experienced cardiac, transplant and procurement clinicians paved the path of development.

OR Today interviewed C Change Surgical Managing Director/CEO Patrick Kammer to find out more about the company and what it offers health care professionals.

**Q: WHAT ARE SOME ADVANTAGES THAT YOUR COMPANY HAS OVER THE COMPETITION?**

A: C Change Surgical is leaner, faster and more focused than our large competitors. We leverage our expertise in automation and materials science. And, we designed a new system that specifically targeted improvements in certain key areas identified as vital by sterile slush users.

Cost reduction appeared near the top of their list. Our high-output, automated

freezers reduce slush equipment costs 37% to 73% per room. Our slush container system reduces costs by 30% to 50%, compared to portable slush bricks used by many transplant and procurement teams.

Clinicians asked us to design with the environment in mind. Our automated freezers utilize reusable slush containers, a green approach appreciated by clinicians concerned about our environment. And, our single-use, protective containers are recyclable and reduce waste by 30%.

Because of the increased attention and importance given to infection control, clinicians asked C Change to pay special attention to the reliability and security of the sterile barrier we designed. As a result, our system employs a locked, sealed, double-container system that confirms sterility for every liter prior to use. Clinician input helped us deliver a big step forward in terms of sterile security.

We compete against large, well-resourced but diffusely focused companies. We have to use clinical guidance and speed of execution to gain advantage. Our customers cheer for us because we invested in and focused on improving an important clinical tool used to help very sick surgical patients in highly complex surgeries. Clinicians know and appreciate when companies are working for them.

**Q: WHAT ARE SOME CHALLENGES THE COMPANY FACED LAST YEAR?**

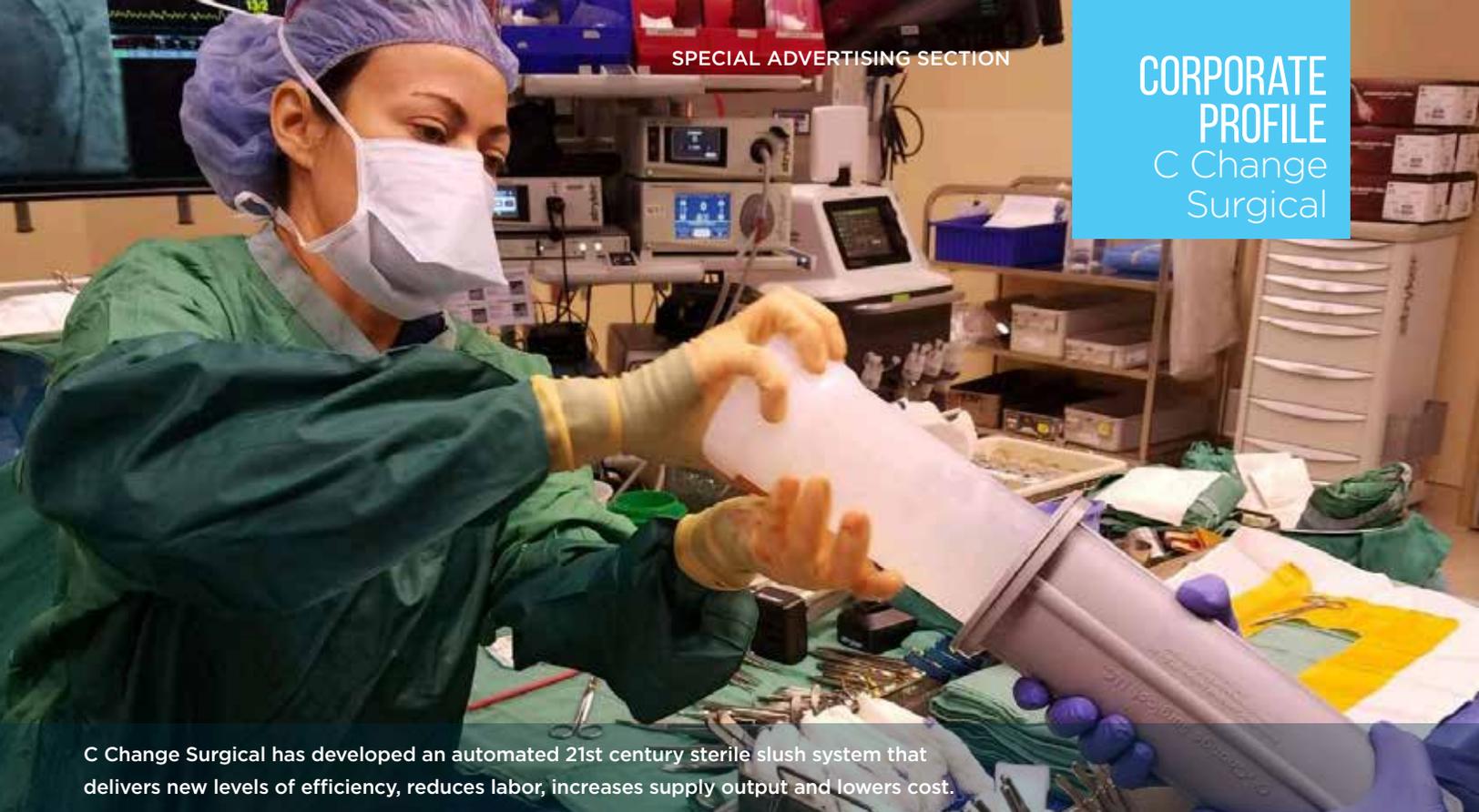
A: We battle to increase market awareness. After decades without product choice, ensuring that clinicians are aware that there's a significantly better option in sterile slush remains a focus. 2018 was our first full year providing a totally developed, high-output slush system that works well for and benefits programs of any size, large or small. Our biggest challenge continues to be increasing market awareness.

**Q: CAN YOU EXPLAIN YOUR COMPANY'S CORE COMPETENCIES AND UNIQUE SELLING POINTS?**

A: We develop technology with clinicians, for clinicians and their patients. Thankfully, we have experienced, talented people who can execute and produce great technology that meets or exceeds today's clinical demands. We develop and then produce both computerized automation and molded, polymer products super efficiently.

Our slush system is many levels and several iterations better in design and function than it was four years ago. That's just not possible in larger companies. Clinical teams are embracing our automated system, which demonstrates to us that our product development team aced it.

Our sales team has a lot of experience and works very well with clinical staff



C Change Surgical has developed an automated 21st century sterile slush system that delivers new levels of efficiency, reduces labor, increases supply output and lowers cost.

during evaluations. They bring a thorough, expert-level knowledge of the processes and practices of sterile slush. At C Change Surgical, we know sterile slush inside and out. That helps our clinical customers adopt and use our system efficiently.

Technology Selling Points: An automated SurgiSLUSH™ freezer frees up clinical teams by making and maintaining smooth slush on its own. Push one button and go get things done.

Our users typically produce slush before procedures when it's more efficient to do so. Our system maintains slush automatically so clinical teams deliver slush wherever and whenever it is needed.

Our protected containers save valuable sterile space and require no sterile field labor. Our users gain focus for priorities during complex cases because they do not make or maintain slush during procedures. Circulators deliver

**"Despite our relatively small size, we work hard to support our customers and will do more as we grow."**

their slush when needed.

And, one freezer supplies multiple rooms. Previously, every procedure room required an expensive slush machine in its sterile field. Producing and maintaining slush outside the sterile field and supplying multiple procedures slashes equipment costs. Clinical and financial stakeholders find that a welcome improvement.

#### Q: WHAT PRODUCT OR SERVICE THAT YOUR COMPANY OFFERS ARE YOU MOST EXCITED ABOUT RIGHT NOW?

A: In the last 18 months, we upgraded our automated freezers with touchpad controls, whisper-quiet agitation and high output supply. And, we completed development on our protected containers. We now offer all facilities a way to make slush much more efficiently, with confirmed sterility for every liter, at lower cost. That's exciting.

Early on, C Change executives saw the need at larger cardiac programs and transplant and procurement programs to supply large volumes of sterile slush more efficiently and at lower cost. C Change produced a high-output system that makes and maintains slush on its own without constant attention and labor.

C Change Surgical's automation and container system streamlines sterile slush

from beginning to end for programs of all sizes. High-volume slush users are now supplying more slush to more procedure rooms at lower cost with our system. The feedback has been overwhelmingly positive. It's a big step forward and we feel very proud of that progress.

And, we feel very excited to have upgraded our smaller, 2-liter automated freezers. They provide cutting-edge benefits for smaller programs that use lower volumes of sterile slush. Many small hospitals across the U.S. are financially challenged. They must reduce costs while maintaining or improving their clinical practice. It's a huge challenge. We feel proud to deliver great technology for smaller facilities that cuts costs and elevates their clinical practice.

#### Q: WHAT IS MOST IMPORTANT TO YOU ABOUT THE WAY YOU DO BUSINESS?

A: We treat our customers like we would want to be treated, improving technology and cutting costs. We designed great technology for slush users and we operate for their benefit.

We could have charged more for what we feel is a clearly advanced product. We chose to charge less and reduce costs for our customers. Doing so clearly demonstrates our understanding of the challenges our clinical customers face

# CORPORATE PROFILE

## C Change Surgical



and our commitment to helping them clinically and economically.

### Q: HOW DOES C CHANGE SURGICAL SUPPORT CUSTOMERS?

A: We support customers in a number of ways. First, we produce innovative technology that improves clinical practices and cuts costs and we have initiated programs for different market segments that deliver additional value.

Second, we attend clinical conferences and support clinical organizations. We have started to reach out to local AORN chapters to sponsor meetings on a more local level. Regional AORN leaders can contact us about this.

Third, we attend meetings and contribute to organizations in the organ donor, procurement and transplant space to support efforts intended to increase organ donation and expand life-saving organ transplants.

Despite our relatively small size, we work hard to support our customers and will do more as we grow.

**"Our slush system is many levels and several iterations better in design and function than it was four years ago. That's just not possible in larger companies. Clinical teams are embracing our automated system, which demonstrates to us that our product development team aced it."**

We also pride ourselves on the quality of our clinical education during evaluations and our rapid response time to support our customers with any needs they may have.

### Q: WHAT IS ON THE HORIZON FOR YOUR COMPANY?

A: At C Change Surgical, we have demonstrated that we can produce sophisticated thermo-mechanical automation with elegantly designed, highly usable polymer products made from advanced materials. And, we listen very carefully to our clinicians. We have the opportunity to use our capabilities to further address our current market and other markets where temperature and sterile fluid control matter.

### Q: CAN YOU PLEASE DESCRIBE YOUR COMPANY'S FACILITY?

A: We operate out of a 100-year-old, restored tobacco building in the Wake Forest Innovation Quarter in Winston-Salem, North Carolina. It is an old, brick building with tall, tall ceilings and beautiful wooden floors. Yet, very modern inside. I love the fact that Winston-Salem and Wake Forest Baptist Health have joined to re-purpose old tobacco buildings that now house biotech, medical technology, pharma and IT companies. We feel lucky to be here and love the energy of this beautiful, small city. Visitors simply cannot believe how nice this city is. Great place.

### Q: CAN YOU HIGHLIGHT ANY RECENT CHANGES TO YOUR COMPANY?

A: We have been steadily adding people in various roles who fit our culture of excellence and who want to grow our small company into the best medical device company on the planet. Not the biggest, just the best.

### Q: WHAT IS MOST IMPORTANT TO YOU ABOUT THE WAY YOU DO BUSINESS?

A: Our mission is simple: C Change Surgical makes life better for clinicians and patients while reducing direct costs.

We work first and foremost with talented local suppliers and vendors, then state (North Carolina) and then national (U.S.) sources to make great products. We gain tremendous efficiency and support our community with our spending. That's a win-win for our community and our company. We feel proud to operate the way we do.

### Q: IS THERE ANYTHING ELSE YOU WANT READERS TO KNOW ABOUT YOUR COMPANY?

A: There is now a 21st century technology available that automatically advances and improves the clinical production and use of sterile slush at lower cost.

We are often asked about the name of our company. We selected the name C Change Surgical for several reasons. First, clinicians routinely use Celsius or Centigrade when dealing with temperature. So, C with a degree symbol honors how clinicians speak about temperature.

Second, the term "sea change" comes from Shakespeare's play, *The Tempest*. It is used now to mean a total transformation. Our technologies transform sterile fluid into sterile slush used to cool organs and give surgeons more time to work. Our system clearly transforms the way clinicians make and use slush.

So, C Change denotes Celsius and sounds exactly like the term that means "total transformation." It fits us well and we like it. But we're kind of nerdy, so...

**For more information,** visit [www.cchangesurgical.com](http://www.cchangesurgical.com) or call toll-free: 877-989-3737.

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# Temperature Management Market Growth Continues

STAFF REPORT

**T**he temperature management market is expected to register a CAGR of around 3% from 2018 to 2023, according to Mordor Intelligence.

“With the rising number of surgeries being performed in hospitals worldwide, there is a growing demand for temperature management devices, which are used to manage the human body temperature by providing regulations in inside recovery rooms, operations theaters, and other types of hospital rooms. The well-established healthcare infrastructure with the high adoption rate of new technologies and increasing surgical centers, would help North America dominate the market share,” according to Mordor Intelligence.

A MarketWatch press release also indicates continued market growth.

The global patient temperature management market will experience substantial growth from 2017 to 2024, according to the press release. The industry will witness significant growth due to increased number of surgeries along with soaring geriatric population base globally. Rising prevalence of cancer and cardiovascular diseases will drive the patient temperature management market size. According to WHO data, cardiovascular disease is the leading reason for mortality globally. Nearly 17.7 million people died worldwide due CVD in the year 2015.

MarketsandMarkets also reports

growth in coming years.

“The global temperature management market is projected to be valued at \$2.40 billion in 2017 and is expected to grow at a CAGR of 2.5% during the forecast period to reach \$2.72 billion by 2022. Base year considered for the report is 2016. Some of the key factors driving the growth of this market include the increase in the incidence of chronic conditions, development of technologically advanced intravascular systems, large number of awareness campaigns/conferences for physicians and growth in research funding.”

The rising number of surgical procedures is one of the primary drivers for the temperature management market, according to Mordor Intelligence. According to Eurostat 2017, a high number of surgeries were performed in European countries, including cataract surgery and colonoscopy. With that, a large increase in recent years has been observed in appendectomies and hysterectomies using keyhole surgery. Also, globally cardiovascular along with musculoskeletal operations are done majorly in most of the regions. This raises the demand for temperature management device usage in hospital rooms, intensive care units (ICUs) and other areas.

Other driving factors for this market are rising prevalence of cancer and cardiovascular diseases, development of technologically advanced intravascular systems and growing medical tourism,

according to Mordor Intelligence.

The Mordor Intelligence report adds that the high cost associated with temperature management systems is one of the major restricting factors for the market. The surgical procedure becomes expensive due to the use of temperature management systems such as endovascular methods. The cost per treatment for single-use components also increases.

“For example, Arctic 5000 and its related consumables are costly and require a team of specialists to handle the medical device. Thus, the price pressure and lack of availability of trained professionals impede this market,” according to Mordor Intelligence.

Other factors impeding this market include product recalls and failures of temperature management devices, according to Mordor Intelligence.

Mordor Intelligence also indicates that the Asia-Pacific region is expected to show attractive growth during the forecast period due to the presence of high growth opportunities for the unmet needs of the target population in this region. Due to growing medical tourism, countries such as Malaysia, India, China, Thailand, and Japan are gaining growth in this market. With that, the North American region is expected to dominate the market share in the forecast period due to the well-developed health care infrastructure, health care facilities and high adoption of new technologies. ■

## C Change Surgical SurgiSLUSH™ Automated Sterile Slush

SurgiSLUSH™ technology elevates your slush practice automatically. At the push of a button it produces and maintains smooth slush in locked, tamper-evident containers, freeing staff to focus on priorities. High-output freezers supply multiple procedures simultaneously, slashing equipment costs. Innovative containers lock in sterility and protect slush until use and replace draped, open-basin machines in each sterile field. •

