

Medical Training magazine

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PEDIATRIC HEALTH

Family Education Programs with Mannequin-based Training

TEAM TRAINING

Understanding Team Training - Utilizing Objective Markers



IMSH 2016: A Strong Overseas-Based Exhibitor Presence, Innovation and Sights on Patient Safety

Haldale Publisher & CEO Andy Smith, Editor Judith Riess and Group Editor Marty Kauchak filed this report from 2016 IMSH in San Diego.

Mass Casualty Offsite Event

Medical Training's sister publication *MS&T* has followed Strategic Operations' (STOPS) accomplishments through the years as a provider of high-fidelity, live military training. The company's recent expansion into the adjacent medical training space was highlighted during a realistic pre-conference workshop. The Saturday afternoon and Sunday morning event was designed to address the need for training teams to provide simulation and other enablers during a mass casualty event centered on an improvised explosive device detonation and related weapons use. The event was held at the STOPS facility on the backlot of Stu Segall Productions television/film studio.

STOPS took mass casualty training to a higher plateau in the event.

Prior to exercise start, IMSH delegates were allowed to examine the STOPS' emergency and operating rooms' CAE Caesar trauma patient simulator's capabilities, the moulage process for scenario actors, the use of "Cut Suit" human-worn surgical simulators and other medical training enablers.

The training scenario afforded individuals from California Highway Patrol, Border Patrol, US Marines, Balboa Hospital Staff, San Diego Police and other organizations the opportunity to train in an interagency context – the way they will respond to real world events.

The scenario further flexed the training audience's skill sets – from decision making through medical treatment – throughout the cycle of a mass casualty event. Indeed, Balboa Navy medical staffs and their STOPS training counterparts had the opportunity

to insert IVs, practice airway management and complete other procedures in tactical combat casualty care doctrine.

A scenario participant told the editorial staff on a condition of anonymity the Sunday morning scenario was the most realistic mass casualty training he had received in his law enforcement career.

Back at the Conference Site

Non-US companies are expanding their presence and increasing their market share in US private and public sector simulation and training (S&T) programs. Products and systems which enable health care learners in other nations are becoming prominent in US simulation centers, classrooms and other venues. Overseas companies are "sealing the deal" with their US customers with quality products, sound business models and attention to life cycle support.

SIMStation of Austria is partnering with Level 3 Healthcare to introduce the latter company's mobile and stationary audio-visual installations to the US market. Joachim Hilbrand, SIMStation's CEO, noted his products may be found primar-

Above
Airway Simulation
Limited exhibited
its ORSIM
Bronchoscopy
Simulator at the
conference.

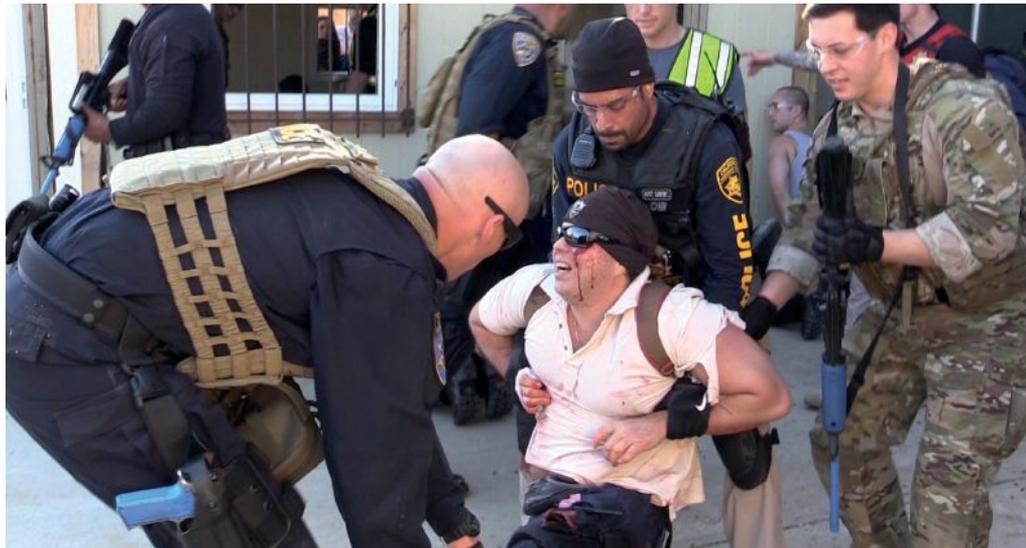
Image credit: Airway
Simulation Limited.

ily in Europe and also the Middle East. The company's control & recording and debriefing products serve single-site and multiple training venues. SIMStation's product portfolio is evolving to fully integrate real time observer and facilitator feedback for use in focused debriefing. Hilbrand added "Using the SIMStation tablet empowers the facilitator to perform more efficient debriefings and to allow the educator to take notes and complete other tasks with personal mobile devices." Level 3 Healthcare manufactures the North American version of SIMStation on behalf of SIMStation Austria. Software is developed by the SIMStation Austria team. For non-North American markets, SIMStation Austria manufactures its own hardware and software.

The Australian firm Model-med International specializes in obstetrics and gynecological models. In his capacity as its US distributor, Dan Hart of Portland, Oregon-based Paradigm Medical Systems briefly discussed his wide-ranging responsibilities. "If it's necessary, we repair them here domestically once the customer sends us the model. We'll fix it up and then send it back to them." Model-med's products are present throughout the world as well as in the US private and public sectors, in particular the US DoD. "The DoD has these located all over the world in its military hospitals. These are also used by non-governmental organizations - when they take the models into Africa and do training. These work great in rural communities as well as large teaching institutions, medical universities and other education facilities," the industry expert said.

Sophie and her mother full birth trainers are among the company's top-selling products in the US market. Model-med has several new products in development that will be introduced later in 2016.

Body Interact™ is a cloud-based immersive training platform that virtualizes acute and chronic care medical simulation cases. The product is in service in 12 nations including the US and others in Europe, the Middle East and Asia. Pedro Pinto, the CEO of Portugal-based Body Interact, noted his entity is primarily a software company and partners with hardware providers to provide the training device. Pinto pointed out the 3-D medical



simulator has evolved through the benefit of reviews by medical societies, industry and universities in US and Europe.

During a scenario observed on a multi-touch tabletop on the conference floor, the corporate executive emphasized the training platform was designed to develop and refine "clinical reasoning" skills and not hands on training. To that end, serious game-like attributes bolster scenarios to permit a full experience with the life-like virtual patient. The Body Interact product also won a "Best in Show Award" (runner-up) in the 6th Serious Games and Virtual Environments Showcase 2016. "It is an honor for Body Interact being recognized as a Best in Show in the 6th Annual Serious Games and Virtual Arcade & Showcase at the IMSH conference, the worldwide leading society in medical simulation technologies. Body Interact is a groundbreaking simulation product enabling a vibrant, engaging and real-time learning experience and this award encourages us to be even more ambitious" concluded Pinto.

"There's incredible growth potential in the US for simulated procedural skill training. The ability to provide assessment and a range of difficulty means that VR simulators can significantly improve the apprenticeship model," Dr. Margot Baker, the director of Airway Simulation Limited, observed. The Auckland, New Zealand executive leads the effort to deliver the company's ORSIM Bronchoscopy Simulator, showcased at IMSH, to clients worldwide. Being small and highly portable, the ORSIM has a wide range of applications in the US. In particular, the company sees business opportunities for ORSIM in simulation centers as well as for workshops and training in the OR. The simulator is a VR bronchoscope simulator designed to establish and enhance bronchoscopy skills. Baker reported sales in over twenty countries with many customers purchasing multiple units.

About 10 years ago the Japanese company Kyoto Kagaku began delivery of its patient care training products to the US. In June 2015, the company established its US entity, KK America. Douglas Wise, KK America's manager for R&D and sales, explained that as he leads the company's US efforts in distribution and research and design, product manufacturing occurs in Japan. While Torrance, California-based KK America is one distributor for the parent company's products, Kyoto Kagaku America

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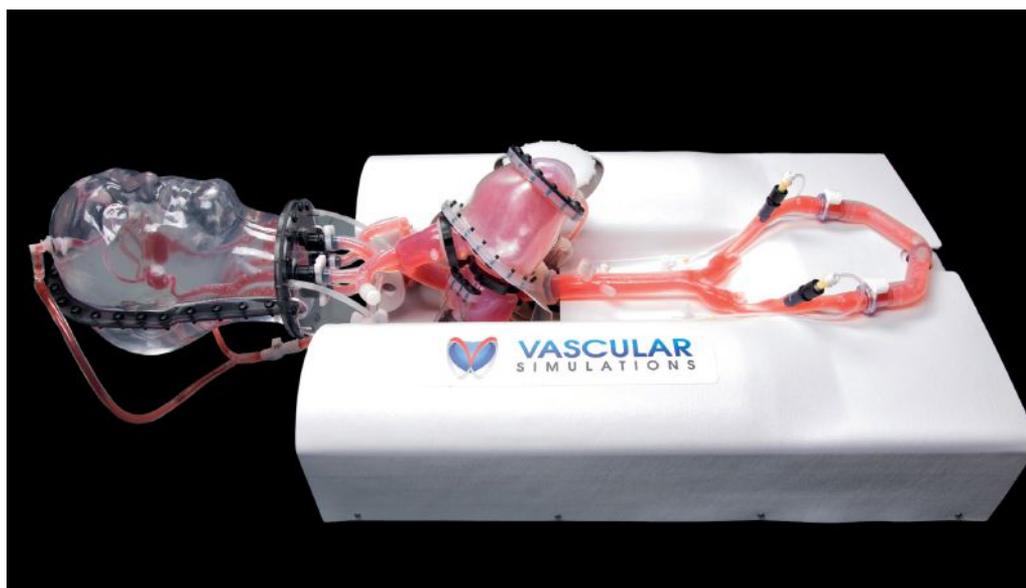
Image credit:
Strategic Operations.

products also are sold through Limbs & Things. Wise also pointed out their enhanced and new products at IMSH, several of which included the upgraded Lung Sound Auscultation Trainer "LSAT" Version 2, the new patient care simulator "Cherry" for nursing training, and the Newborn Care Baby. The Newborn care model features allow Ultrasound Guided PICC line placement and realistic IV placement using LED Vein illuminators, in either the arm or leg.

Japan-based Uchida Yoko Global Limited introduced to the US medical S&T space its PF-Note feedback support tool. The debriefing product is in service in medical simulation centers and other medical education facilities in Japan and Korea. While PF-Note typically supports debriefing sessions for five-to-ten students, it can be scaled for larger groups. Takeshi Ikoma, from the company, pointed out all students' performances and others' opinions and objective analyses – the good, the bad and even indifferent – are recorded and annotated in real time. As a result the student can see him or herself and internalize the experience. PF-Note allows the result to be exported by HTML for self-learning on the web browser. The company is looking for a US distributor to allow it to provide the full scale of support for the product in the US market. An English version of the product is available for immediate shipping.

The US has been an overseas market for about 10 years for Koken, another Japan-based company. At this conference, the Tokyo-based firm primarily exhibited its midwife and gynecological-related training products. "We're also in many other major nations around the world," Junko Iesaki, the company's general manager for International Marketing & Sales, remarked. She continued, "We see a lot of potential sales in the US market. Now we are going to be more focused on the US market." The company's business model includes providing products for its current and prospective US customers. Koken expects to unveil a new gynecological-based product in 2016.

Swemac Simulation of Linköping, Sweden showcased TraumaVision, a medical VR training simulator that is advancing the state-of-the-art for simu-



lating orthopedic trauma surgery. "TraumaVision is primarily developed to train different procedures within fracture treatment with a focus area for hip fractures and it can also be outfitted with some training modules for spinal surgery and pelvis fracture treatment," Martin Sjögren, the company's CEO, said. The corporate leader further added there is a "quite huge" R&D effort occurring at his corporate headquarters that will lead to new product offerings and configurations in 2016. "We are about to launch a new training module within fracture treatment tailored to more experienced and senior orthopedic surgeons. TraumaVision is also the chosen platform on which AAOS/OTA [American Academy of Orthopaedic Surgeons/Orthopaedic Trauma Association] is developing a Hip Fracture Training Module to train basic skills of intertrochanteric hip fractures to PGY1 residents that will be launched during 2016." Sjögren further commented on one baseline technology for his products. "The problem with doing fracture treatment is you have to use the fluoroscopy and fluoroscopy is dangerous. It's hard to train using and understanding fluoroscopy. But with our simulator we offer one solution: to combine the training and education both for fluoroscopy and 2-D images, and convert all of that into '3-D thinking' and treatment of different fractures without using dangerous x-ray". Indeed, the corporate leader emphasized Swemac is the only company on the market offering this teaching and training software solution. The company's products have been validated in several published studies and the installation base is around the globe including the UK, Russia, China, the US and Scandinavia.

Scotia UK is the major player in the UK S&T industry's medical sector. Reported by the company to be present in about 120 of the nation's hospitals, it has earned an approximate 80 percent share of the market. "We're just entering the US market and see a huge opportunity," Tom Frame, the company's chief technology officer, said. The company's flagship smots™ (Scotia Medical Observation and Training System) product line was unveiled for the US market at this IMSH. The system allows for events to be recorded and fielded for instant playback and review. Further, smots allows for two-way communication between observers and operators. All told, smots has been delivered to users in about

Above
The Vascular
Simulations
Replicator is ideal
for an array of tasks
such as physician
training and research
& development,
including treatment
planning.

Image credit:
Vascular Simulations.

Right
To launch their
efforts in the medical
sector, Mursion
partnered with Scott
Compton, PhD at
Duke University,
to design several
immersive scenarios
where a health care
provider delivers
'bad news' to a
family member.

Image credit:
Mursion.



10 nations in the Middle East, Europe and now the US. Scotia UK furnishes all aspects of the product life cycle. “The biggest difference between this and other products is that we provide our software and hardware for a holistic system, together with installation,” Frame emphasized and added, “We also guarantee all of our work.”

Elsewhere on the Conference Floor

CAE Healthcare unveiled Athena, an advanced female simulator, which will help prepare healthcare learners to treat women – who comprise more than one-half of hospital admissions. Raluca Apostu, a product marketing manager for Patient Simulators at the company, pointed out Athena’s anatomically correct female body has realistic vocalization, and is fully wireless.

“This is the only product to our knowledge that has two platforms – Muse which is physiologically driven and one [Vivo] which gives full manual operation to the instructor,” she added. Further, Athena also provides training for airway management, advanced ventilation and cardiovascular skills. “The CPR/cardiovascular training is compliant with American Heart Association standards,” Apostu concluded. Athena will be available for shipping this March 1. CAE also reported the release of LearningSpace Intuity, the next generation of its comprehensive audiovisual solution for simulation center management. The fully redesigned solution offers a more intuitive user experience, greater ease of use, and expanded flexibility for mobile platforms.

Also at the 2016 IMSH CAE unveiled two partnerships. In one instance, CAE launched NeuroVR, a neurosurgery simulator that enables open cranial and endoscopic brain surgery procedures. The product was developed by the National Research Council of Canada in collaboration with clinicians from teaching hospitals in Canada and other nations. Also, CAE secured the rights to distribute Strategic Operations’ Surgical Cut Suit and other training products in the US.

ECS continues to strengthen its portfolio in healthcare learning. At the Serious Game Showcase, the company displayed its VA-VMC (Veterans Affairs-Virtual Medical Center) to better allow members of the VA Health Care Team to conduct research,

obtain training, collaborate with colleges and interact with veterans. VA Health Care Professionals can conduct meetings with colleges in virtual conference rooms. Within the conference rooms presenters can display their computer screens, share presentation materials, provide training and conduct question and answer sessions. Current and prospective patients with health care issues, such as PTSD, will conceptually be able to contact and dialogue with VA facilities’ health care providers, chaplains, and other staff members 24/7 through chat rooms and other web-based protocols. While the VMC was delivered to the VA in 2015, the customer is finalizing the deployment scenario to permit provider-provider and provider-customer interaction. Ken Garrison, the company’s VMC program manager, told *Medical Training* that the VMC “is on the web. You can access it from anywhere in the world. A patient can come in and research diabetes, for example, by accessing a virtual diabetes clinic on the site. There they will be able to explore information such as how much exercise they should be doing or discuss options for prevention and treatment.” VA customers and staff will also be able to supplement their dialogue with 2D content on tablets and other add-on devices without having to access the virtual world component of the VMC. “This is a virtual world, but with real time communications between patients and staff – talking, typing chat messages and such,” Garrison emphasized. The VMC complements other ECS product deliveries to the VA customer to include Crash Cart, Goals of Care Conversations, Choosing Wisely Conversations and the Tele-ICU Trainer. These were displayed at the VA’s Serious Games Showcase booth.

Mursion of San Francisco is building upon its competency of developing virtual simulation scenarios where interpersonal skills are key and applying the concept to simulated patient service delivery. To launch their efforts in the medical sector, Mursion partnered with Scott Compton, PhD at Duke University, to design several immersive scenarios where a health care provider delivers “bad news” to a family member, explained Arjun Nagendran, one of the company’s co-founders and CTO. In a scenario viewed by *Medical Training*, a patient had a wrong kidney removed and the trainee, in the role of the responsible physician, must explain the mistake to a family member. “We specialize in addressing what learners are not used to doing, what makes them uncomfortable for example, and then see whether they have empathetic responses or if they are just being ‘procedural’. Experts in this community told us that this was a rather important and concerning area where individuals needed training,” the company executive said. While the project remains in development with its partner at Duke, Mursion is already developing partnerships with other content providers for standardized patients who are looking for a more efficient and effective way to deliver simulated patient training. “Hopefully in about three or four months we’ll have results on how effective the simulation was in comparison to human interaction as an alternative or augmenting technology,” he added. Mursion is also expanding the baseline technology of its platform to make it more compatible with other technologies – 3D goggles for instance. Nagendran concluded, “We’re building it for both virtual reality and (consequently) augmented reality systems, while keeping an eye out on companies coming out with accompanying devices.”

"This is the world's first vascular replication system" Chander Sadasivan, PhD, pointed out as he discussed the Vascular Simulations Replicator. The Stony Brook, New York-based engineer noted his product is ideal for an array of tasks such as physician training and research & development, including treatment planning. For the latter task, the attending physician would send a CAT, MR and/or rotational angiography imaging scan to the simulation site to allow them to make a physical 3-D vascular replica of that specific patient to support a rehearsal scenario. Further, the Replicator is compatible with any fluoroscopic system, and replicates the heart, aorta, cerebrovascular and peripheral vasculature. Vascular Simulations manufactures the product in house and sells the Replicator as a unit or in sub-systems.

VirtaMed showcased the ASRM (American Society for Reproductive Medicine) Embryo Transfer Module. The collaborative effort between VirtaMed and ASRM was initially declared ready for shipping last October. Rick Hoedt, the Executive Vice President for Business Development at the company, told *Medical Training* in an exclusive interview that this year VirtaMed will introduce two major upgrades to its ArthroS™ arthroscopy simulator: In March the company releases its ACL repair module, and later in the spring it will showcase an anatomic hip model, which will include fluoroscopy and access training, to complement the existing knee, shoulder and FAST models.

Another new product being showcased to IMSH delegates was SonoSim® CaseBuilder, an add-on feature to SonoSim LiveScan™. "SonoSim CaseBuilder was created to meet customer demand, as ultrasound usage is rapidly accelerating and educators are demanding more effective training tools," Dan Katz, MD, SonoSim's vice president of Business Development, stated. SonoSim CaseBuilder allows ultrasound instructors to select from over 380 real-patient ultrasound data sets and create thousands of customized teaching cases that match curricular requirements. Katz further noted recent improvements to the SonoSim Ultrasound Training Solution that further its ability to track didactic performance

and ultrasound image acquisition and interpretation ability. SonoSim is taking SonoSim CaseBuilder pre-orders and anticipates shipping the product in second quarter of 2016.

Simulab showcased an attention-getting seven new or enhanced products at this conference. During a walkabout of their booth Karen Taylor, vice president of Products, and company spokesperson, noted the PacerMan™ System, with patented SimuSensor™ technology, is the first trainer of its kind and will provide learners the opportunity for training in both transcutaneous and transvenous temporary cardiac pacing using off the shelf equipment. "Everything we create at Simulab, including PacerMan, is designed to constantly challenge student learning curves, so they become skilled in a growing variety of critical procedures." Taylor remarked. The product is set to launch mid-year 2016. The new CentralLineMan™ Tissues are expected to afford learners the chance to train on obese and advanced cases with vessel anomaly. Taylor commented this product "expands the training experience by exposing learners to variations in anatomy in a safe, simulated environment." Similarly, the PICCLineMan™ System was showcased as a realistic ultrasound guided trainer with all access site in three tissue variations that allow learners to do the entire procedure. Simulab also was available to discuss their VirtualPatientMonitor, Cholecystectomy Module for TraumaMan®, SonoSkin™ Ultrasound Diagnostic Wearable for FAST/eFAST and Femoral Nerve Block Trainer with SmarTissue™.

Breakout Session Highlights

The keynote speakers at this year's conference were excellent and covered a range of topics from The Lou Oberndorf lecture by Alison Levine, the leader of the first Women's US Team to climb Mt. Everest. Levine talked about leadership and the difference between meeting your own personal goals and what others believed you should accomplish. Her two trips to climb Everest took lots of determination and training but she said the key is your own personal growth.

Kim Binsted shared new viewpoints and applications of simulation through NASA's ground-breaking work in simu-

lating life on Mars. She is the principal investigator on HI-SEAS and discussed missions, including Mission III, which concluded on June 15, 2015, and Mission IV, which began on August 4, 2015. Each mission places a six member crew in a simulated Mars environment where they eat, sleep, and work as if they were living on the "red planet". Binsted stated that exploration to Mars is not as far away as we think.

The 2016 "Pioneer in Simulation" award was given to Louis H. Oberndorf, the founder and former chairman of Medical Education Technologies, Inc. (METI), a developer of learning tools to educate healthcare professionals. Oberndorf told the audience that if they had entered medical school or nursing school 25 years ago, they would have been entering "an educational system that was 100 years old" but said "you cannot enter a professional medical education institution today anywhere in the world where you will not encounter this experiential learning so everyone here is a pioneer."

This year's conference had over 3,000 attendees, over 300 sessions encompassing assessment and outcomes, instructional methods, interprofessional development and curriculum design to developing and delivering patient centered care and the largest number of exhibitors in conference history.

Medical Training Front Office Reflection

Publisher Andy Smith reflected on his frenetic schedule at IMSH and noted the community of practitioners and their industry counterparts are making strides to develop a safety culture in healthcare and hospitals. Looking beyond the new products and enhancements in the exhibition hall, he observed "I was impressed with discussions about what the products and systems were contributing to communication protocols, debriefing, and other activities beyond classroom learning. These are excellent places to start in making a patient treatment system where it will be harder for individuals and teams to make mistakes. I look forward to my editorial staff following these developments in our 2016 *Medical Training* editorial program as well as on our new healthcare website which will launch March 1st." MTM