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RSNA 2013: New Technology From Germany

Written by Helen Gregg

Globalization has impacted all of the world's major industries, including healthcare equipment. Products developed by vendors based in other countries, such as Siemens and Sony, have become staples in American hospitals.

In Germany, many new technologies are being developed by a special initiative funded by the Federal Ministry for Education and Research focused on making the country a hub of medical innovation. Representatives from several companies funded by this initiative attended the Radiological Society of North America's 99th Scientific Assembly and Annual Meeting Dec. 1 to Dec. 6 in Chicago to debut innovations poised to be included in tomorrow's imaging technology.

3-D motion sensing. IT firm Metrilus has begun implementing 3-D motion-capture technology into medical technology. The technology, already in the U.S. in products like the Xbox Kinect video game, is being developed to allow clinical staff to interact with medical equipment without touching it, aiding in hospitals' efforts to keep operating rooms completely sterile and limit the rate of hospital-acquired infections, says CEO and Founder Christian Schaller.

Dr. Schaller, who holds the equivalent of a PhD in engineering, says he first noticed the technology being used in the automotive industry and had the idea to bring it into the medical field. Enabling surgeons and other physicians to scroll through information on a computer screen or zoom into imaging test results with the wave of a hand allows these resources to be brought into sterile areas with reduced risk of contamination. "The technology's not just cool — it adds value to the hospital," says Dr. Schaller.

Therapy response tracking. Mint Chemical has developed mint Lesion 2.0, a platform that allows radiologists and oncologists to come together to track a patient's response to cancer therapies. The cloud-based software collects, analyzes and displays imaging results to show progress made in reducing tumor size or other markers of cancer progression, says Matthias Baumhauer, PhD, CEO of Mint Chemical.

"You can see the visual metrics that show the reaction to the therapy," says Dr. Baumhauer, including automatically detected tumor size and density. The system also incorporates enhanced workflow capabilities to allow for easier collaboration and results-sharing among providers.

Molecular imaging. At the Leibniz Institute for Molecular Pharmacology in Berlin, researchers are working to improve the imaging process by finding new contrast mediums for molecular sequencing. Researcher Leif Schröder, who holds a doctorate in physics, has done extensive research on a novel imaging technique based on using hyperpolarized xenon biosensors as a contrast medium.

Current contrast mediums enable clinicians to detect tumors with a diameter of about half an inch, says Dr. Schröder. "We'd like to be able to detect a tumor that's only 100 cells in diameter," he says. He is working on a process where a patient inhales a xenon compound designed to bind like a cage to tumors on the molecular level, allowing for a clear image of the tumor with a very small dose of contrast medium.

"It will better enable doctors to see if the therapy is working," he says.