BIÇAKCILAR
Touching Lives One Device at a Time

MARKETWATCH

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In this issue…Industry In Brief

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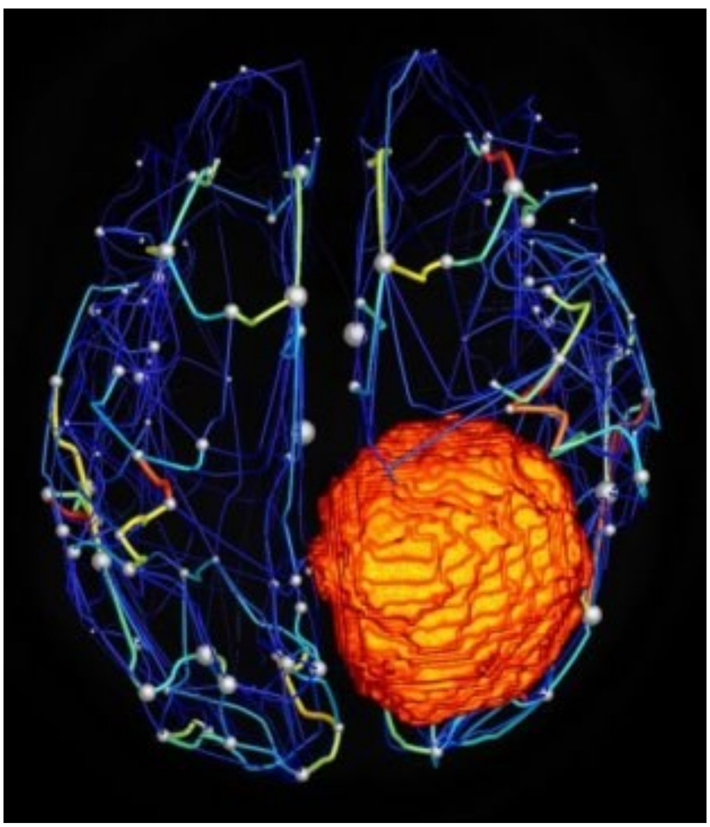
Virtual Brain Could Aid Surgical Planning

Researchers have simulated neural activity based on the unique structural architecture of individual brain tumor patients using a platform called The Virtual Brain. The findings, reported in eNeuro, are a first step toward creating personalized brain models that could be used to predict the effects of tumors and consequent surgery on brain function.

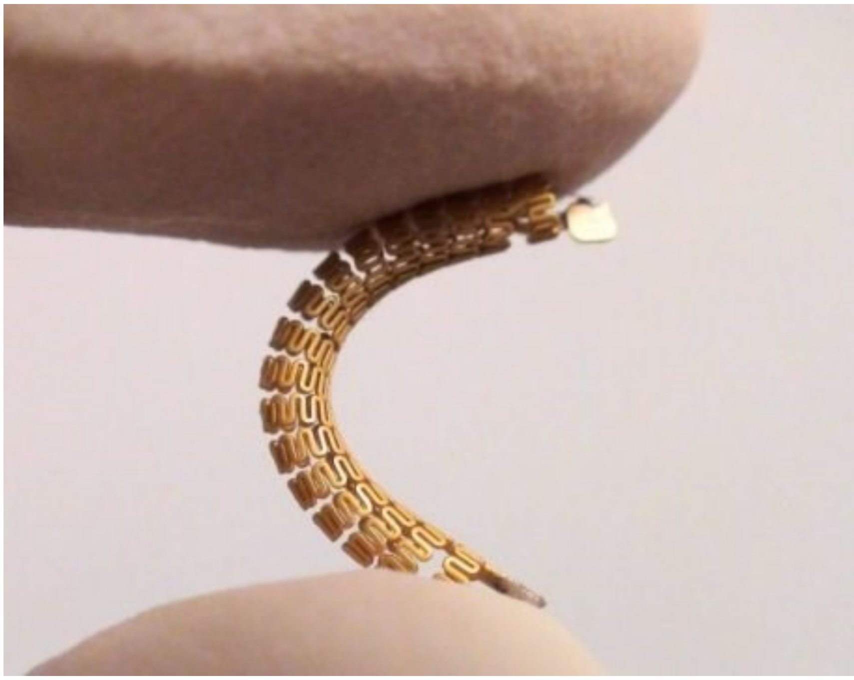


Brain surgery is delicate work that requires careful planning to maximally remove a tumor while leaving the surrounding tissue intact. Common techniques such as functional magnetic resonance imaging (fMRI) are used to map out a surgical strategy by identifying important functional areas close to the tumor. These approaches are limited, however, in their ability to predict post-surgical outcome because of the complex dynamics of the brain and the widespread modifications of brain activity.

Using the open-source software The Virtual Brain, Hannelore Aerts and a team led by Daniele Marinazzo modeled 25 individual brain networks of brain tumor patients and 11 of their partners as a control group. The researchers demonstrated that these individualized models can accurately predict the effects of the tumors on brain connectivity. This result opens the possibility of integrating neuroimaging data with virtual brain modeling to improve surgical planning and outcomes.

In this issue… *'Smart stent' detects narrowing of arteries*

For every three individuals who have had a stent implanted to keep clogged arteries open and prevent a heart attack, at least one will experience restenosis -- the renewed narrowing of the artery due to plaque buildup or scarring -- which can lead to additional complications.



Now, a team led by UBC electrical and computer engineering professor Kenichi Takahata has developed a type of "smart stent" that monitors even subtle changes in the flow of blood through the artery, detecting the narrowing in its earliest stages and making early diagnosis and treatment possible.

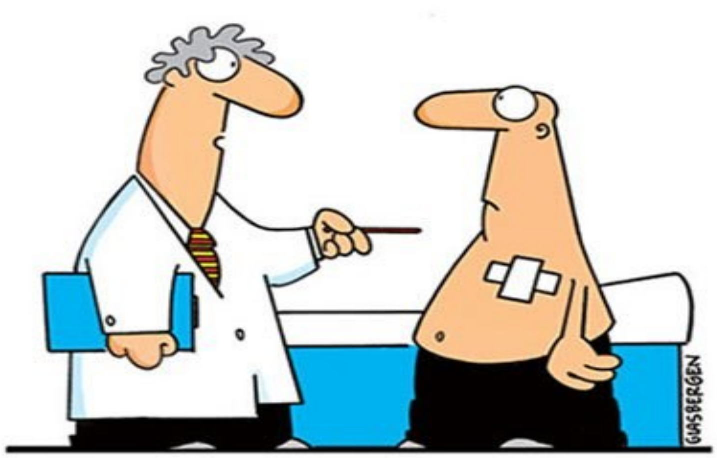
"We modified a stent to function as a miniature antenna and added a special micro-sensor that we developed to continuously track blood flow. The data can then be sent wirelessly to an external reader, providing constantly updated information on the artery's condition," said Takahata.

The device uses medical-grade stainless steel and looks similar to most commercial stents. Researchers say it's the first angioplasty-ready smart stent -- it can be implanted using current medical procedures without modifications.

Research collaborator Dr. York Hsiang, a UBC professor of surgery and a vascular surgeon at Vancouver General Hospital, noted that monitoring for restenosis is critical in managing heart disease.

"X-rays such as CT or diagnostic angiograms, which are the standard tools for diagnosis, can be impractical or inconvenient for the patient," said Hsiang. "Putting a smart stent in place of a standard one can enable physicians to monitor their patient's health more easily and offer treatment, if needed, in a timely manner."

The device prototype was successfully tested in the lab and in a swine model. Takahata, who holds patents for the technology, says his team is planning to establish industry partnerships to further refine the device, put it through clinical trials and eventually commercialize it.



"It's a pacemaker for your heart.
Plus, you can download apps for your liver, kidneys, lungs, and pancreas!"

Stryker to acquire Swiss surgical smoke firm SafeAir

JUNE 26, 2018 BY BRAD PERRIELLO

Stryker (NYSE:SYK) said yesterday that it agreed to acquire Swiss surgical smoke evacuation firm SafeAir for an undisclosed amount.

Root, Switzerland-based SafeAir's "smoke pen" device is a disposable diathermy pencil with an integrated smoke evacuation function that connects with a smoke evacuator to pull the smoke from cauterization procedures directly from its source.

Surgical smoke conveys roughly the same mutagenic and carcinogenic risks as cigarette smoke, plus the risk that it could carry bacteria or virus cells and damage the respiratory tract and the lungs.

"The acquisition of SafeAir AG is highly complementary to the surgical business of Stryker's instruments division and strengthens our smoke evacuation portfolio in both the U.S. and Europe," medsurg & neurotechnology president Timothy Scannell said in prepared remarks. "This acquisition aligns with Stryker's focus of providing solutions that result in a higher quality of care and level of safety for both healthcare professionals and patients."

Kalamazoo, Mich.-based Stryker said it expects the deal to close during the fourth quarter.

General Electric to spin out GE Healthcare

General Electric (NYSE:GE) said today that it plans to spin out its GE Healthcare subsidiary as a stand-alone, publicly traded entity to focus on its aviation, power and renewable energy businesses. GE Healthcare's vision is to drive more individualized, precise and effective patient outcomes. As an independent global healthcare business, we will have greater flexibility to pursue future growth opportunities, react quickly to changes in the industry and invest in innovation. We will build on strong customer demand for integrated precision health solutions and great technology with digital and analytics capabilities as we enter our next chapter," Murphy said in prepared remarks.

"GE Healthcare is an industry leader with financial strength, global scale and cutting-edge technology. Our talented healthcare team will continue delivering precision health solutions, building on our heritage of technology innovation that delivers patient outcomes," Flannery added.

Cardinal Health deals majority stake in NaviHealth to PE shop CD&R

Cardinal Health (NYSE:CAH) said this week it divested itself of its majority stake in NaviHealth to private equity firm Clayton, Dubilier & Rice, with Cardinal Health retaining the call right to reacquire the business.

NaviHealth provides post-acute car programs to hospital systems, health planst, physician groups and healthcare providers as part of value-based care programs, Cardinal Health said. Through the deal, CD&R will obtain a 55% ownership stake in NaviHealth, while Dublin, Ohio-based Cardinal Health will retain an approximate 45% stake in the post-acute care focused business. "This new investment structure provides NaviHealth with the resources needed to support and accelerate its growth trajectory. NaviHealth's leadership team, clinical expertise, and proprietary clinical decision support technology are key differentiators in a rapidly growing sector of the healthcare industry. CD&R's understanding of NaviHealth's business, and their relationships with current and potential customers, will help provide additional value to patients, health systems, and health plans while also allowing Cardinal Health to benefit from future success," Cardinal Health CEO Mike Kaufmann said in a press release.

After the deal closes, which Cardinal Health is hopeful to see during the third quarter of this year, current NaviHealth CEO Clay Richards will retain his role and join NaviHealth's board, joined by CD&R funds operating advisor and former Aetna CEO Ron Williams will take over as board chair. Both Cardinal Health and CD&R will appoint three additional directors to the board. "NaviHealth is at the forefront of the shift from fee-for-service to value-based healthcare delivery. With an aging population, prevalence of chronic illness, and increased hospital readmission rates, payers and providers are seeking innovative ways to improve health outcomes while reducing cost, which is exactly what NaviHealth's services deliver. The post-acute care segment of the market is especially attractive due to high levels of waste, wide variability in spend, and the complex mix of clinical, operational and technical resources required to address patient needs. For the past six years, NaviHealth has worked tirelessly to improve the way post-acute care is delivered in the U.S. CD&R's investment enables us to invest in innovative solutions, expand our capabilities, and partner with health plans and health systems in more strategic ways – with the ultimate goal of providing better care to our patients. Our leadership team believes in the future of NaviHealth and we are excited about what we can create together with Cardinal Health and CD&R," Williams said in a prepared statement.

Glaukos' iStent inject micro-bypass device gets FDA approval

Ophthalmic medical technology company Glaukos has obtained the US Food and Drug Administration (FDA) premarket approval (PMA) for its iStent inject Trabecular Micro-Bypass System.

The approval covers the use of the system to decrease intraocular pressure (IOP) in adults with mild-to-moderate primary open-angle glaucoma (POAG) and undergoing concomitant cataract surgery.

iStent inject creates two bypasses in the trabecular meshwork to enable multi-directional flow through Schlemm's canal for optimising the natural aqueous humor outflow.

"Glaukos is planning to begin preparations for the initial commercial launch of the micro-bypass system in the third quarter of this year."

The next-generation trabecular micro-bypass device features two heparin-coated titanium stents that are preloaded into an auto-injection system.

This capability is said to facilitate precise implantation of stents into two trabecular meshwork locations via only one corneal entry point with a click-and-release motion.

Glaukos president and CEO Thomas Burn said: "The approval of iStent inject represents another major Glaukos milestone in the pursuit of our mission to transform glaucoma therapy and further strengthens our position at the forefront of micro-scale innovation.

"Given its clinical performance and enhanced procedural elegance, we believe the iStent inject will be an attractive, two-stent solution for US ophthalmic surgeons to reliably manage glaucoma patients' IOP in a straightforward and effective manner."

The FDA decision comes after a review of results from a randomised, multi-centre clinical trial conducted in 505 patients with mild to moderate POAG at 41 clinical sites.

Findings indicated a statistically significant decrease in unmedicated diurnal IOP in subjects undergoing cataract surgery, with the iStent inject at 24 months.

Glaukos is planning to begin preparations for the initial commercial launch of the micro-bypass system in the third quarter of this year.

Currently, the device is commercially available in the European Union, Australia, Canada, Brazil, Armenia, Singapore, Hong Kong and South Africa.

"Glaukos is planning to begin preparations for the initial commercial launch of the micro-bypass system in the third quarter of this year."

The world’s biggest healthcare companies in 2018

The healthcare companies that achieved high revenue in 2017 focused on providing innovative healthcare services and products. Mergers and acquisitions of smaller healthcare companies were also one of the key strategies adopted. Medicaldevices-technology.com lists the world’s biggest healthcare companies based on 2017 revenues.

McKesson Corporation – $208.3bn

McKesson Corporation posted a year-on-year revenue growth of 4.9% in 2017, which is thought to be a result of price increases, increased drug utilisation, business acquisitions and continued relationships with existing customers within its North America pharmaceutical distribution businesses. The company operates through its distribution solutions and technology solutions divisions.

UnitedHealth Group – $201bn

UnitedHealth Group registered a year-on-year revenue growth of 9% in 2017. The company operates through UnitedHealthcare and Optum units, which achieved revenue growth of 13% and 11% respectively. Based in Minnesota, US, UnitedHealth Group is a provider of medical benefits to people in the US and 130 other countries. It processes more than one trillion transactions a year and employs 285,000 people worldwide.

CVS Health – $184.7bn

Pharmacy innovation company CVS Health’s revenue in 2017 witnessed a year-over-year growth of 4.1%, which was driven primarily by growth in the company’s pharmacy network, prescription volumes and pharmacy benefit management (PBM) product introductions. Headquartered in Rhode Island, US, the company owns more than 9,800 retail stores and up to 1,100 MinuteClinic medical facilities. It employs approximately 246,000 people.

AmerisourceBergen Corporation – $153.1bn

The growth of AmerisourceBergen Corporation’s pharmaceutical distribution services segment helped increase the company’s revenue by 4.3% year-over-year. The firm’s customers, including Walgreens Boots Alliance and Express Scripts, contributed to 45% of the revenue. AmerisourceBergen Corporation is a sourcing and distribution services company engaged in providing pharmaceutical products to healthcare providers, veterinary practices and livestock producers. Headquartered in Chesterbrook, Pennsylvania, AmerisourceBergen employs 20,000 people in 50 countries worldwide.

Cardinal Health – $129.9bn

Based in Dublin, Ohio, US, Cardinal Health is involved in providing medical products, pharmaceuticals and solutions to hospitals, pharmacies, healthcare systems, clinical laboratories, ambulatory surgery centres and physician offices. With a workforce of 50,000, the company serves its customer’s needs in 60 countries worldwide.

Express Scripts Holding – $100.06bn

Express Scripts Holding is one of the biggest pharmacy benefit managers in the US. Its revenue in 2017 was derived from the delivery of prescription drugs, which accounted for 98.2% of the total revenue. Headquartered in Missouri, US, Express Scripts offers a range of services, including home delivery pharmacy care,

Anthem – $89.06bn

Based in Indiana, US, Anthem is a health benefits company involved in providing medical and speciality products. The commercial and speciality business segment includes local groups, national accounts, and individual speciality businesses, while the government business unit comprises Medicaid and Medicare businesses, a federal employee programme, and the national government services.