Medical Devices Expected To Change Healthcare In 2019

Connie Gilbert, SVP, Commercial Loan Officer

It's no secret emerging medical technologies have been the main driver behind major advancements in healthcare. Yet, while the rapid pace of technology is a boon to patients and healthcare in general, it can make it difficult for practitioners to stay ahead of the curve.

From less-invasive testing to groundbreaking treatments, investing in cutting-edge medical devices can benefit both your patients and your practice. To help you keep your finger on the pulse of the latest advancements, here are five devices experts say will reshape the face of healthcare in 2019:

1. Bio Printers

From joints and entire limbs to sections of living tissue and whole organs, bio printers are emerging as a feasible way to treat a variety of maladies. How do they work? Strangely enough, a lot like a 3D printer.

First, practitioners create a mold using computed tomography and magnetic resonance imaging (MRI) tools. Then, they load the bio printer with cartridges made up of "bio ink" (a mixture of living cells), "bio paper" (a dissolvable gel that protect cells during printing), and natural polymers. Finally, the device prints the model in layers—à la additive manufacturing—in a timeframe that allows the cells to fuse together and dissolve the bio paper.

While bio printers have already produced organs, sections of tissue, and entire body parts, human transplantation is a ways off (although researchers recently implanted a spinal section in a rat with success). With additional research and development, bio printing has the capacity to revolutionize how we repair damage to the human body.

2. TAP Blood Collection Device

Nobody likes to give blood samples—mainly because the most common side effect of blood withdrawals is a loss of consciousness. Yet, one piece of equipment recently emerged like a white knight for needle-nervous patients: the TAP Blood Collection Device.

Patented by Seventh Sense Bio Systems, TAP enables practitioners to draw blood for hemoglobin A1C testing in a painless, efficient way. With a push of the device's green button (a process that earned TAP the title of "the world's first push-button blood collection device"), 30 microneedles pierce the skin and retract quickly, instantly collecting approximately 100 microliters of blood.

While Seventh Sense is pursuing an at-home blood collection model to tap into the thriving direct-to-consumer lab testing market, it's already available to healthcare workers, offering them a unique value proposition in a field marred by trypanophobia.

3. Cerebrotech Visor

When it comes to detecting a stroke, the National Stroke Association's Act F.A.S.T. campaign (face, arms, speech, time) has saved countless lives. But when it comes to diagnosing a severe stroke, a neurologist's method is much more sophisticated. However, with only 40-89 percent accuracy, it's not as precise as it could be. The Cerebrotech Visor offers a unique, easy-to-use solution to that problem.

Developed by Cerebrotech Medical Systems, the visor can provide a severe stroke diagnosis within seconds. Clinicians and paramedics simply place the visor over a patient's eyes. Once on, the visor sends low-energy radio waves through the brain and brain fluid. If the visor detects an asymmetry in those waves (a stroke often causes changes in brain fluid), it indicates the presence of a severe stroke.

The procedure takes approximately 30 seconds, is easy to conduct, and has shown to be 92 percent accurate in diagnosing strokes, according to researchers at the Medical University of South Carolina. The same researchers equate the visor to a defibrillator, making this new technology a necessary piece of equipment.

4. MasSpec Pen

The MasSpec Pen could soon have surgeons saying goodbye to the days of frozen section analysis to identify cancerous tissue. This pen-sized device can detect breast, thyroid, lung, ovary, and brain cancer with 96.5 percent accuracy, according to a study by the University of Texas at Austin.

Through gentle contact, a drop of water on the tip of the pen extracts molecules from a patient's tissue and draws them through a mass spectrometer. In a mere 10 seconds, a reading indicates whether tissue is normal or cancerous and, if cancerous, what type of cancer it may be. This speedy diagnostic tool also lets surgeons know what cancerous tissue they need to cut during surgery.

Although the team at MasSpec is still testing the pen's full capabilities, they're currently looking into commercializing the device to offer cancer patients safer and more effective surgery on a much larger scale.

5. VeinViewer Vision2

The VeinViewer Vision2 is another win for the needle-wary. Developed by Christie Medical Holdings (CMH), Vision2 is a durable, head-to-toe vein scanner that works by projecting near-infrared light onto the patient. The patient's blood absorbs the light and the surrounding tissue reflects it. The device's computer captures this information and projects it in real time onto the surface of the skin, giving clinicians an accurate image of a patient's blood pattern and helping nurses locate a vein.

Sound too good to be true? It gets better. Vision2 is already approved by the FDA and available for purchase.

Investing in Your Patients

Innovations in medical technologies are changing the way we approach and practice medicine. To offer your patients the best care possible, it's important to invest in the latest devices.

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