Health Tech

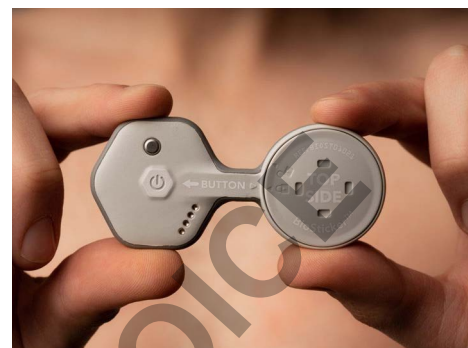## Apple Working on
PREVENTATIVE HEALTHCARE TECHNOLOGY

▶ *Trend Watch: Mobile Devices Expand Healthcare Monitoring Capabilities*

In January, Apple CEO Tim Cook announced the company is investigating in technology that could help identify health risks at an early stage, similar to heart monitoring features introduced with Apple Watch. Current Apple Watch models are equipped with sensors capable of detecting atrial fibrillation, or AFib, a common heart arrhythmia that can lead to stroke in some patients. Apple Watch Series 4 and Series 5 include an FDA-approved electrocardiogram function for more accurate readings.

As the first FDA-approved consumer device to incorporate an ECG, Apple Watch is an early entrant in what appears to be a burgeoning crossover sector that joins consumer tech with healthcare.

Apple is known to be at work on multiple health-focused initiatives, although none have been formally announced. A recent patent filing from December 2019, for example, suggests the company is developing methods of using Apple Watch to detect Parkinson's disease and diagnose tremor symptoms. Similar initiatives, such as the sound monitoring Noise app and menstrual cycle tracking Cycle app, were released with watchOS 6.

Improved Brain Chip Could Advance
CANCER PRECISION MEDICINE

A research team from the University of Houston recently reported improvements made on its microfluidic brain cancer chip, allowing for the administration of multiple drugs at the same time. This biomedical group, the Akay Lab, also enabled its device to conduct parallel testing of drug responses for glioblastoma patients. The potential impact of this feature could be profound, with the glioblastoma being the most common cancerous brain tumor. Accounting for half of all malignant brain tumor cases, glioblastomas render an average five-year survival rate of less than 6%. These findings were recently published in the IEEE Open Journal of Engineering in Medicine and Biology.

This ability to rapidly analyze how effective a cancer drug is would be a drastic improvement in comparison with the traditional way of doing so. Currently, cancer therapeutics are adminis-tered, tested for a few months and if ineffective, the patient is then switched to a new drug regimen. This trial-and-error approach is not only time-consuming and burdensome for the patient but can bring about unnecessary costs and hinder the efficacy of treatment. By moving toward a microfluidic, multiple drug administration system, the Akay Lab's device can potentially identify the ideal chemotherapy regimen in as fast as two weeks.

BioIntelliSense Secures
FDA Approval for BioSticker
ON-BODY SENSOR

BioIntelliSense has received 510(k) approval from the Food and Drug Administration for its BioSticker on-body sensor for scalable remote care that enables constant monitoring of critical signs and actionable insights of patients. The platform allows doctors to access data from patients in the home setting, leading to early detection of potentially avoidable complications. BioIntelliSense also commercially launched its medical-grade Data-as-a-Service (DaaS) platform in the United States. The DaaS platform captures vital signs every minute, as well as physiological biometrics and symptomatic events, providing an effortless experience for patients.

"We are at the inception of a remarkable new era in healthcare that will employ medical grade sensor technologies to effortlessly capture remote patient data and generate personalized clinical intelligence," says James Mault, M.D., CEO of BioIntelliSense.

With the help of the platform's advanced analytics, doctors can generate high-resolution patient trending and reporting to provide medical-grade care at homes.

BioIntelliSense entered into a strategic partnership with UCHealth and its CARE Innovation Center to show the clinical applications of the BioSticker device and medical-grade services. The partnership aims to build and validate models of data-driven care, patient-centered and designed for scale.
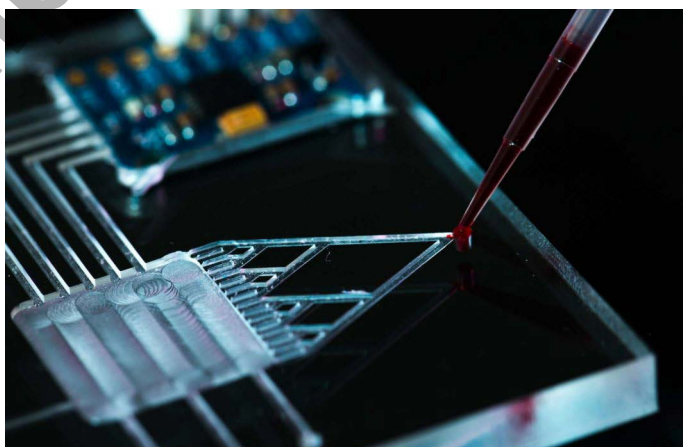
"The future of healthcare will see the lines blurred between the hospital, clinic, and home," says Dr. Richard Zane, UCHealth chief innovation officer and chair of emergency medicine at the University of Colorado School of Medicine. "The use of the BioSticker device for continuous health monitoring enables us to monitor a patient in their home and recognize when a patient may have an exacerbation of illness even before they manifest symptoms."

Valley Health System Taps Mount Sinai Spinoff
TO PRESCRIBE DIGITAL THERAPEUTICS

Valley Health System has partnered with Rx.Health to offer patients access to digital therapeutics and care plans. Rx.Health, a startup founded as a spinoff from New York City-based Mount Sinai Health System, allows physicians to prescribe the use of apps, wearable devices, and other tech-based services through a platform integrated directly into their EHR systems. In the first 45 days of the partnership, Valley Health System has already begun to offer digital support to patients undergoing electrophysiological studies and procedures, with plans to expand the program in 2020 to support the use of telehealth services and remote patient monitoring devices for cardiovascular care.

Healthy.io Launches
DIGITAL WOUND MANAGEMENT SOLUTION

Healthy.io, known for turning smartphone cameras into clinical-grade medical devices, has launched its second product line, a digital wound management solution. The solution is an extension of Healthy.io's clinical grade color recognition products and helps healthcare professionals objectively assess chronic wounds and track their progress over time through a repeatable process. The solution was successfully registered with FDA in December 2019.

Using a smartphone app and two calibration stickers placed around a wound to track dimensions, nurses can now scan the wound and get a measurement quickly and effectively. Healthy.io's technology builds a 3D image, enabling more comprehensive documentation. The app measures wounds and captures standardized visual records over time, eliminating human error and discrepancies that are common in today's methods due to subjective analysis and inaccurate measurement.

Chronic wounds affect 6.5 million people in the United States, costing more than $25 billion annually. The aging population and an increase in chronic disease, such as obesity and diabetes, will further compound the chronic wound problem.

The product, which is also CE marked, is currently being used at Care City and Modality Partnership's Wokingham Medical Center in the United Kingdom.


Fitbit First to Activate
BLOOD OXYGEN MONITORING FEATURE

Also in January, Fitbit activated its blood oxygen monitoring feature on its Versa, Versa Lite, Versa 2, Ionic, and Charge 3 wearables, beating Apple to the punch. Apple holds patents for blood oxygen monitoring but has yet to activate the feature in any devices. Back in 2018, Garmin introduced Pulse Ox with its Vivosmart 4 activity tracker, allowing users to gauge their blood oxygen saturation levels on the spot, or periodically as they sleep.

Sensors on the back of the devices give users an estimate of the variability of oxygen levels in their bloodstream. This information is useful for detecting variations in breathing while you sleep, which could indicate sleep apnea.

French health tech company Withings recently unveiled its new ScanWatch, which also has similar monitoring capabilities. However, it is still undergoing FDA clearance, and the company has yet to announce when the watch will be available to purchase.
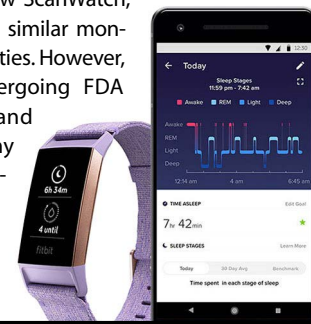
Express Scripts Selects Tech Tools TO INCLUDE ON NEW DIGITAL HEALTH FORMULARY

Express Scripts selected the first 15 technology tools to include in its new digital health formulary. The initial selection of tools on the formulary focuses on plan members with diabetes, hypertension, asthma or chronic obstructive pulmonary disorder, and mental health conditions such as depression and anxiety. As the formulary evolves, the PBM intends to also include tools targeting other conditions, such as musculosketal conditions, immunological diseases, cancer, and women's health needs.

The formulary includes preferred options for diabetes, cardiovascular, and pulmonary care management, but allows for alternatives as well.

In addition to making it easier for health plans to contract with digital health companies, Express Scripts is providing support to partners that select a program on the formulary to ensure that members are using the technology correctly.

According to Express Scripts, additional solutions will be announced later in 2020.