

Healthcare Market Updates



Symbol	Change
TMX	+0.15
CHK	+2.35
AAPL	+0.14
PRTG	-0.73
AMZN	+1.08
TSLA	-0.87
AVGO	-3.00
SIRI	-0.65

Weekly Newsletter
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









Wearables

New wearable device that collects live cancer cells from blood may help avoid biopsy – April 02, 2019 (1/2)

Applicable Product Categories:

Wearables

 Technologies	Wearable (Device + App)	 Therapeutic Areas	Cancer Screening
 Applications	Remote Diagnostic Testing	 Geographic Focus	US
 Segment Focus	Clinical/Consumer Grade	 Topics (News type)	Product Innovation
 Companies	University of Michigan	 Others	NA

ANALYST TAKE:

Synopsis: A team of US engineers at University of Michigan have developed a prototype wearable device that can continuously collect live cancer cells directly from a patient's blood in an advance that could help patients avoid biopsy as well as get treatment for cancer more effectively.

Industry Challenge: For most types of cancer, a biopsy is the main way doctors diagnose it. Depending on the location of the lump, the patient may require surgery and anesthesia to help with the pain. This is often followed with post-surgery side effects and infections. For example, bleeding sometimes occurs under the skin or deep where the needle was placed, causing a black and blue mark. Additionally, emerging blood based tests (Liquid Biopsy) are required to identify and examine circulating tumor cells (CTCs), and are often limited by inconsistent CTC counts as well as the health impacts of blood removal from a sick patient.

New wearable device that collects live cancer cells from blood may help avoid biopsy –

April 02, 2019 (2/2)

Value Proposition:

- The wrist-worn prototype device — which has so far been tested in canines but likely wouldn't see human trials for another three to five years — screens patients' blood over the course of a few hours and only draws the CTCs it is seeking.
- **How it works?** According to the paper published in the journal Nature Communications - The device is comprised of four major components: a micro-controller, a peristaltic pump, a heparin injector and a CTC capture module containing a microfluidic capture chip. This system is housed in a 3D printed casing and controlled wirelessly using a custom-built app. When worn, whole blood from a patient's peripheral vein is routed into the device through an indwelling intravenous catheter, and then back into their bloodstream. This approach allows the device to screen a substantially larger volume of the patient's blood with minimal loss, and in the animal test yielded roughly 3.5 times as many CTCs per milliliter of blood compared to blood draw collection. It can also be used to grow the captured cancer cells, producing larger samples for further analysis.
- "The most challenging parts were integrating all of the components into a single device and then ensuring that the blood would not clot, that the cells would not clog up the chip, and that the entire device is completely sterile," Tae Hyun Kim, a postdoctoral scholar at the California Institute of Technology and the paper's lead author, said in a statement.
- Frost & Sullivan views this on-going innovation that leverages convergence of wearable technology, as enough to disrupt the lab testing and diagnostic testing industry. As per the researchers, a fully-realized version of their system would significantly reduce errors in determining the disease status and better allow clinicians to develop personalized therapies specific to each patient's tumor. Frost & Sullivan also notes, this innovative wearable-based biopsy testing device in making could become a critical millstone for enabling easy to use PoC tests for screening cancer , which is a need for precision medicine practices. However, there are lot of liquid biopsy tests already in the market providing a convenient blood test based cancer screening and the segment is growing rapidly. It will be interesting to keep a watch if this wearable device will live up to its promise, if so how it will differentiate against the emerging liquid biopsy space.
- **Target End-User:** PoC Lab Tests, D2C Diagnostic tests









WEBLINK: <https://bit.ly/2UsnaDy> <https://go.nature.com/2D0y21l>

FDA clears Spry Health's remote monitoring wearable for COPD patients – April 02, 2019

(1/2)

Applicable Product Categories:

Wearables

 Technologies	Wearable (Device + App)	 Therapeutic Areas	COPD
 Applications	Remote Patient Monitoring	 Geographic Focus	Global
 Segment Focus	Clinical Grade	 Topics (News type)	Competitive Intelligence
 Companies	Spry Health	 Others	NA

ANALYST TAKE:

Synopsis: The Loop System, a continuous remote monitor developed by Palo Alto-based startup Spry Health, received 510(k) clearance from the FDA last Friday, according to an update to the agency's database that was confirmed by the company.

Industry Need: Based on estimates, more than 4 million people die annually from chronic respiratory diseases. This make COPD, the fourth leading cause of death globally; affects over 1 billion people and 7% of all deaths annually. Earlier and optimal management can slow the progress of COPD, helping patients to live a better and longer life.




Value Proposition:





- Designed for management of COPD and other chronic conditions, the wristband wearable collects and monitors a user's pulse-oximetry, respiration, heart rate and blood pressure (although the device's webpage notes this last feature is designed for researchers). These data are automatically analyzed to identify clinically relevant signs of deterioration, with any changes highlighted for providers on an accompanying dashboard.
- Despite its watch-like design and focus on usability, CEO and cofounder Pierre-Jean "PJ" Cobut said that his company views the Loop first and foremost as a clinical remote monitoring device. The company also claims that the device design make it highly engaging with customer with autonomous feature. For example, as per the clinical validation study, people usually in their 70s, were found using/wearing the Loop pretty much every day for at least three hours, and that was in roughly 92 % of the cases.
- Frost & Sullivan views the FDA approval as a great milestone for the company's Loop System device that works out of the box and requires no inputs from the wearer, although they do have to option to view updates about their condition on the display and may receive notifications if any changes are detected. Built for patients with COPD and other chronic conditions, the Loop System continuously collects and analyzes health data to warn providers of potential deterioration. The company says it has already inked a deal with a major health system. Frost & Sullivan finds the new FDA approved Loop System a serious direct competitor to existing players such as Breathe Technologies, Inc. and Propeller Health in the COPD wearable device space and possibly as a strong contender for leading smart watch players such as Apple, Omron Healthcare and Verily among other who might be aiming at COPD as the next use case.
- **Target End-User** : Health Systems, Average Consumers

NHS diabetes team partners VR medical training firm – April 02, 2019 (1/2)

Applicable Product Categories:

Wearables

 Technologies	Wearable (Device + App)
 Applications	Patient Screening and Monitoring
 Segment Focus	Consumer Grade
 Companies	Oxford Medical Simulation

 Therapeutic Areas	Diabetes
 Geographic Focus	UK
 Topics (News type)	Competitive Intelligence
 Others	Novo Nordisk

ANALYST TAKE:

Synopsis: The NHS England diabetes team has partnered with virtual reality medical training company Oxford Medical Simulation to train doctors in a bid to improve care for patients with diabetes in the real world.

Value Proposition: As part of this partnership, a multicentre trial of Oxford Medical Simulation system will start this week in the south of England, according to the company. Around 50 doctors will be able to use Oculus Rift VR headsets to ensure they are prepared for medical emergencies in at least 100 scenarios designed by Oxford Medical Simulation, NHS doctors, and patients with diabetes. The system is being piloted through Health Education England in a multicentre trial in the South of England, with development funded by Novo Nordisk. If supported by evidence from the pilot there are plans for further roll-outs nationwide throughout 2019.

Frost & Sullivan views this as an important collaboration for Oxford Medical Simulation to not only expand its VR solution applications across care delivery workflow but also successfully carry out clinical validation studies with a leading institution such as the NHS for future use cases. This VR device is expected to augment physicians in providing more precise and error-less care to diabetes patients, which is among one of the leading chronic health conditions globally.

Targeted End-Users: Hospitals, Physicians

WEBLINK: <https://bit.ly/2Ux4OkF>



Mobile Phones/ mHealth

AIA and Singtel collaborate to drive wellness in Singapore

– April 04, 2019 (1/2)

Applicable Product Categories:

Mobile Phones

 Technologies	mHealth App	 Therapeutic Areas	Health and Wellness
 Applications	Wellness digital platform	 Geographic Focus	Singapore
 Segment Focus	Consumer Grade	 Topics (News type)	Business Model Innovation
 Companies	AIA Singapore, Singtel	 Others	-

ANALYST TAKE:

- **Synopsis:** In the coming months, Singtel will unveil a wellness digital platform that allows customers to earn mobile data rewards with every step they take and also offers content related to health, fitness and nutrition.
- **Industry Challenge:** With rising prevalence of chronic conditions, and an overall increasing focus on prevention, the importance of wellness – physical and mental is gradually improving. The Global Wellness Institute estimates the wellness economy to be a \$4.2 trillion market, of which healthy eating, nutrition and wellness segment comprises \$702 bn, and mind and body fitness segment makes up \$595 bn. More over, an increasing group of non-healthcare companies are trying to gain a share of the growing healthcare market, by aiming at the relatively simpler wellness areas.

AIA and Singtel collaborate to drive wellness in Singapore

– April 04, 2019 (2/2)

Value Proposition:









- In the coming months, Singtel will unveil a wellness digital platform that allows customers to earn mobile data rewards with every step they take and also offers content related to health, fitness and nutrition. The platform will sit within My Singtel app which has more than one million active users a month. At launch, customers will also be able to earn lifestyle rewards from inaugural partner, AIA.
- In addition, Singtel and AIA also plan to co-create innovative insurance products relevant to customers' increasingly digital lifestyles. This collaboration is the first of its kind between two industry leaders in communications technology and life insurance in Singapore.
- Frost & Sullivan notes that the insurance industry which traditionally has been slow to adapt to technology, is now adopting digital health tools faster than ever before. Beginning with the Discovery Group's solution in South Africa (the Vitality program), which is now available via partnerships in Europe, Singapore and variations of which are also available in the US, AIA has not been left behind. AIA partnered with MyDoc in Singapore, and is also amongst the investors that led a \$500 million funding round for WeDoctor, an online healthcare services company. In line with the healthcare industry's trend to focus on preventive care, AIA's move isn't surprising. But what is somewhat surprising is the approach taken by a communication services provider (beyond their smart connected devices or telemedicine interests), to enter the wellness space, with plans for insurance products. While the interest of non-healthcare companies in the industry is not new, the focus on wellness and insurance categories is new. The impact of this approach on members' health will be an interesting case study for the rest of the world to follow.
- **Target End-User:** AIA and Singtel's combined base of 5 million customers

WEBLINK: <https://bit.ly/2WP6Zxz>

Femtech company Advantia Health acquires maternal, infant video chat platform Pacify – April 04, 2019

Applicable Product Categories:

S Health App

 Technologies	mHealth, Telemedicine	 Therapeutic Areas	Maternal and Infant Care (Femtech)
 Applications	Support to mothers for infant care	 Geographic Focus	US
 Segment Focus	Clinical Grade	 Topics (News type)	Business Model Innovation
 Companies	Advantia Health, Pacify	 Others	-

ANALYST TAKE:

- **Synopsis:** Advantia Health, which provides in-person care with a companion care coordination platform, will now be able to offer its members video chats with lactation specialists and registered nurses for new and soon-to-be moms.
- **Industry Need:** The United States ranks the worst amongst all its OECD peers, according to a 2018 research study, as highlighted in a [CNN](#) report. Solutions that help mothers care for their babies, anytime, and from anywhere. Last year, Philips announced partnership with American Well to provide telemedicine support via its uGrow parenting app.
- Frost & Sullivan notes that femtech is a growing trend, one that is likely to grow to a \$50 bn global market by 2025. Several aspects of this market are being served with apps developed for mHealth and telemedicine. This trend is only expected to grow over the years, also demanding new design thinking principles that serve women's needs as well.

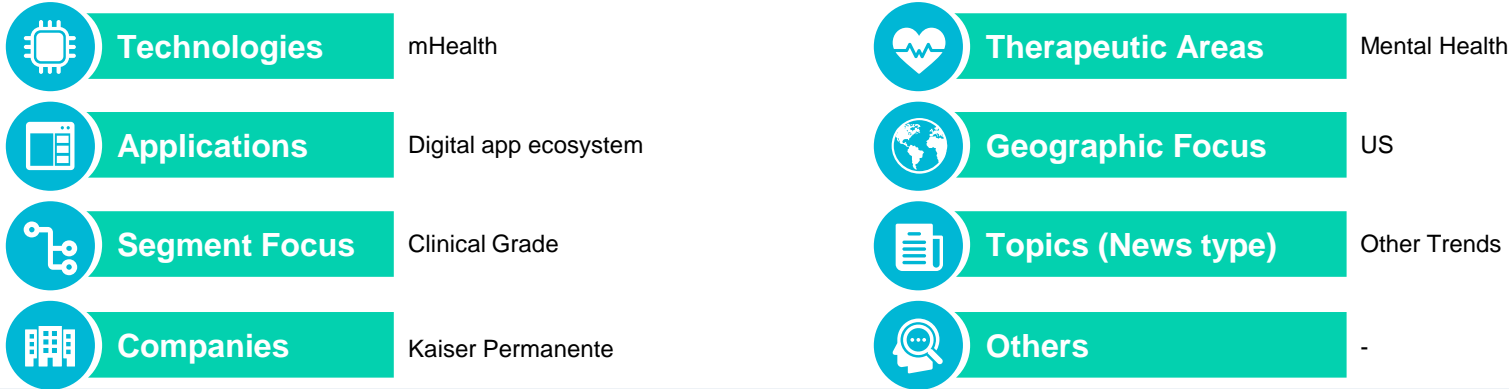
WEBLINK: <https://bit.ly/2HYZz7J>

Digital tools can help patients, but prescribing the right app is no simple feat—

April 03, 2019

Applicable Product Categories:

Mobile Phones and Apps



ANALYST TAKE:

- **Synopsis:** Tackling the issue of choosing the right app to prescribe from a sheer volume of options, is a core focus for Kaiser Permanente's Project Chamai, an internal effort launched in 2016 that is looking to address the 25 percent of patients entering the system with subclinical behavioral health symptoms. So far the app prescription ecosystem is comprised of just six mental health apps, three of which focus on mindful meditation and three of which are based on CBT. Of note, is the diversity between each of the apps — for instance, some are video based, one has a coach and another one has a navigator.
- **Industry Need:** Frost & Sullivan in its 2016 study noted that there were more than 3,500 apps for mental health on the app stores, a number which has definitely increased significantly since. Few of these apps may be clinically vetted, or provide evidence, and the app stores do not provide this information directly. Besides, different patients need different types of apps – raising a need for building an ecosystem that allows prescribers to choose the right app with confidence.
- Frost & Sullivan believes this trend will continue where larger organizations will develop ecosystems, eventually allowing other smaller entities to leverage the information, until medical associations comes up with better ways (in partnerships) to vet such apps.









WEBLINK: <https://bit.ly/2WKk3UN>

WhatsApp use in the NHS a ‘privacy and clinical safety timebomb’

– April 03, 2019

Applicable Product Categories:

Mobile Phone Apps

 Technologies	Messaging platforms	 Therapeutic Areas	NA
 Applications	Secure healthcare communications	 Geographic Focus	UK
 Segment Focus	Clinical Grade	 Topics (News type)	Other Trends
 Companies	Whatsapp, Siilo app	 Others	-

ANALYST TAKE:

- Research at St George’s University Hospital NHS Foundation Trust has found the use of WhatsApp in the NHS to be “a privacy and clinical safety timebomb”, according to a press announcement. Apps like Siilo are crucial for the healthcare industry - GDPR compliant, and can only be accessed with a pin number, touch or face ID; does not synch data with personal apps or devices.
- Frost & Sullivan notes the emergence of some new messaging platforms serving this unaddressed need such as Lua, in addition to some older options such as TigerText which are HIPAA compliant, in the US. Options such as CommonTime and Imprivata are also available in the UK. Yet, the basic convenience of already having a personal messaging app such as Whatsapp may not allow uptake of these solutions, unless there’s a policy in place to prevent use of these apps for protected health information. The article points out, “58 percent of 136 NHS trusts had no policy in place to restrict the use of consumer messaging platforms.” This will have to change to improve uptake of secure messaging platforms.

WEBLINK: <https://bit.ly/2WQqohL>



Smart Home Devices & Appliances

'Smart homes' will help seniors live more independently

– March 29, 2019

Applicable Product Categories:

Smart Homes and Devices

 Technologies	IoT, AI	 Therapeutic Areas	Elderly Care
 Applications	Aging-in-Place	 Geographic Focus	US
 Segment Focus	Consumer Grade	 Topics (News type)	Technology Innovation
 Companies	Cox Communications, Manuel Builders	 Others	-

ANALYST TAKE:









- This is yet another example of an aging-in-place smart home demonstration, this time again by Cox Communications, but with a partnership with Manuel builders. The objective this time is to actually sell such smart homes for independent living (priced at \$272,000), versus the previous version last year which was only a demonstration. Demonstrations included a virtual reality platform to help seniors to combat isolation, telemedicine technology that allows patients to connect with their doctors remotely, and a variety of voice-activated, hands-free devices to make life easier.
- Frost & Sullivan notes the use of telemedicine solutions, a change in Cox's approach to provide a comprehensive aging-in-place solution. This smart home still provides point solutions however, being a 'connected home'. As technology advances with more artificial intelligence pervading smart home technologies, we will see truly 'smart homes'. But this is an encouraging first step.

WEBLINK: <https://bit.ly/2l0aYUw>

Amazon Alexa celebrates HIPAA-compliant data transfer with six new healthcare skills – April 04, 2019

Applicable Product Categories:

Smart Speakers

 Technologies	IoT, Virtual Assistants, AI	 Therapeutic Areas	All
 Applications	Voice assistant support versus portal or app usage for convenience	 Geographic Focus	US / Global
 Segment Focus	Clinical Grade (HIPAA compliant)	 Topics (News type)	Technology Innovation
 Companies	Amazon	 Others	-

ANALYST TAKE:

- Amazon highlighted the launch of six new Alexa skills built by healthcare providers and other stakeholders. Each is designed to help members, patients and caretakers manage care at home with easy-to-use voice commands. The six new skills are pediatric post-surgery recovery (Boston Children's Hospital), latest or weekly average blood sugar lookup (Livongo), find nearest express clinic and book appointment (Swedish Health Connect), check in on wellness goals (Cigna), find info on local care facilities (Atrium Health), track home deliveries of prescriptions (Express Scripts). The Alexa platform now supports the development of software that communicates HIPAA-protected health information through an invite-only Alexa Skills Kit program.
- Frost & Sullivan notes the initial six skills as an interesting mix of clinical and non-clinical use cases, and agrees with the view that voice virtual assistants avoid the need for uptake of patient portals / apps and training – voice as an interface is much easier to interact for most age groups, especially the younger ones.

WEBLINK: <https://bit.ly/2UIFclf>

Other Interesting Articles

When available, other interesting articles will be covered here in short.

News Title	Link	Remarks
New research predicts smart homes set to increase to 59% in the UK	https://bit.ly/2FMljjn	By 2020, 59% of UK households are expected to own a smart home device, up from the current 26%. But the question is, how many of these smart devices will continue to be used, and will integrate with other smart systems, without which, their true potential is not achieved.
Security Experts: Whopping 217.5% Increase in Cyber Attacks on 'Smart Home' Connected Devices in 2018	https://bit.ly/2FVGP5k	With increasing penetration of smart devices, the potential vulnerabilities are also increasing, resulting in a need for a smart home cybersecurity solutions, akin to a computer's anti-virus software, but way more advanced.
Walmart taps Google's smart-home assistant for customers	https://bit.ly/2TYN0dS	While Amazon has provided the ability via its Echo devices for a while now, Walmart, in its eCommerce strategic play to counter Amazon, is offering the same functionality with Google Home. Worth noting, that Amazon Echo devices lead the US smart speaker market currently. With small functionalities like these, adoption and continued use of smart speakers seems likely.
Tenants worry smart-home tech could be abused by landlords	https://cnet.co/2G31p5b	Privacy with smart home devices will remain a top concern, especially when the control lies with the landlord – an issue that could be addressed with rules of access and control.