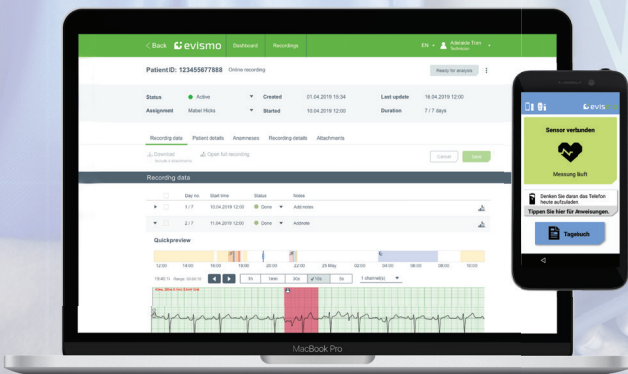# Bittium

Remote Monitoring Made Easy

Utilizing the MedicalSuite™ technology, Bittium and Swiss healthcare provider evismo jointly developed an efficient solution for 1 to 30 day ECG remote monitoring.

Healthcare systems are under strain throughout Europe. We are seeing an explosion in costs, a shortage of skilled workers and physicians while, at the same time, facing an ageing population. However, with intelligent use of new technologies and service models healthcare providers can help improve patient care and support the healthcare system.

The need for long-term ECG is increasing

According to the World Health Organization (WHO), strokes are among the three most common causes of death worldwide. They often cause long-term disabilities. This year alone, over 13 million people will suffer a stroke and around 5.5 million people will die as a result[1]. However, up to 80 percent of strokes would be preventable if the main risk factors were monitored at an early stage[2]. Patients with atrial fibrillation (AFib) have an up to five-fold increased risk of stroke. This diagnosis affects 4.5 million people in the European Union and is responsible for around a third of hospital stays for cardiac arrhythmias. In addition to these figures, the European Heart Rhythm Association (EHRA) published a classification system for AFib-associated symptoms in 2014. Atrial fibrillation is usually diagnosed on an ECG. However, if a patient's levels have returned to normal and their symptoms do not appear while they are on the exam, the doctor will not be able to make an appropriate diagnosis or initiate treatment.

In up to 90 percent of the cases, a 24/48 hour ECG Holter monitoring does not, however, provide unambiguous results. This is, of course, very frustrating and even scary. It is especially so for the patients who have to wait for a second appointment. This is why physicians are more in favor of long-term ECGs. The trouble is that in the current healthcare system they often lead to longer waiting times.

An additional challenge comes with the limitation of responsibilities among medical practitioners. In countries like Switzerland, so far only cardiologists can

evismo AG

evismo AG strives for a complete medical solution for remote monitoring and remote diagnosis of vital parameters as a service for physicians and patients - cost-efficient and patient-focused. By remotely measuring and monitoring patient's vital signs, evismo transforms diagnostic processes for ambulatory patients. evismo CardioFlex, the first evismo service, addresses unresolved diagnostic needs of patients with cardiac arrhythmias.

For more information, please visit www.evismo.com

FOR MORE INFORMATION, PLEASE CONTACT:

bbs@bittium.com

[1] https://www.world-stroke.org/world-stroke-day-campaign/why-stroke-matters/learn-about-stroke
[2] https://www.who.int/news-room/q-a-detail/what-can-i-do-to-avoid-a-heart-attack-or-a-stroke

evaluate and agree to a long-term ECG with health insurers. As the first and familiar point of contact for the patient, general practitioners often have no choice but to refer the patient to the cardiac specialist for follow-up examinations, some of which can be complex and lengthy.

Swiss-Finnish Development Partnership

Utilizing the MedicalSuite™ technology, Bittium and evismo jointly developed an efficient solution for 1 to 30 day ECG remote monitoring. The resulting evismo-Cardio-Flex is a wireless, long-term ECG service with maximum diagnostic reliability for general practitioners, cardiologists, clinics, stroke centers, hospitals, and other medical professionals. With CardioFlex the accuracy of the diagnosis is increased by around 10 times compared to the previously standard 24/48-hour Holter.

The web based Bittium MedicalSuite™, as a service platform for wireless remote monitoring of patients' biosignals, optimizes secure information exchange and information management between medical service providers, hospitals and special-

ists. The openly designed solution allows for a modular development of the components and can also be used to collect other patient data. This Bittium solution flexibility supports evismo in their effort to offer customers and patients an end-to-end service. In addition to the quality of the individual components this possibility to further develop the components modularly is a key factor for the growing success of the CardioFlex solution.

"Patients and physicians appreciate CardioFlex above all for the time-flexibility and diagnostic accuracy of the long-term ECG, the medical analysis as well as the simplicity, security and convenience. The feedback of our users is consistently positive, and the demand is growing. We are pleased that we have been able to develop a customized medical system together with Bittium, benefitting patients and doctors," says Willemien van den Toorn, Managing Partner & Founder of evismo AG.

Connected ECG Service

evismo accesses the ECG and movement data remotely every day and checks if the available information is sufficient for a diagnosis. The vital parameters, which are continuously measured by a lightweight, waterproof ECG sensor Bittium Faros™, are transmitted daily to the evismo platform. The wireless and strongly encrypted transmission of the ECG data is done via a dedicated, highly secure Bittium MedicalSuite Mobile Device with a corresponding app.

The daily data check and ECG analysis is only run until a diagnosis can be made. The ECG sensor is worn for as short a time as possible, but as long as is necessary. This reduces the need for multiple examinations. It makes diagnosis and treatment faster. As a result, patient satisfaction increases and doctors' and medical staff's workload gets lighter. It also lowers diagnostic costs. As soon as the sensor can be removed, the patient gets a notification from the special app. The data is analyzed and the referring cardiologist, or a cardiologist from the Swiss evismo ser-

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Willemien van den Toorn,
Managing Partner & Founder, evismo AG

vice center, then makes a diagnosis. The costs for such ECG examinations are covered in Switzerland by the basic insurance of the Swiss health insurance companies.

Outlook

In the future, evismo plans to expand the current set-up. The aim is to consolidate the recording and evaluation of other vital parameters, such as blood pressure, oxygen saturation, EEG, etc., on one medical platform. Based on the recorded vital parameters, the company will provide remote monitoring, e.g. for chronically ill patients, or offer medical care at home after hospitalization, whereby patients can be discharged earlier and monitored reliably. Bittium is looking forward to supporting the future endeavors of the dedicated evismo team.
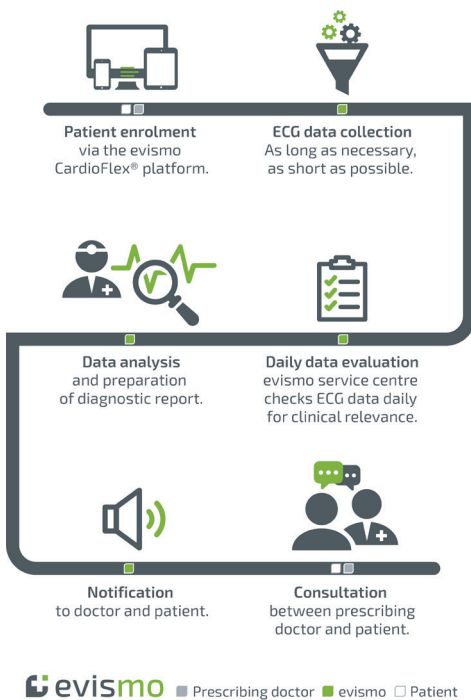
Picture: Overview evismo-CardioFlex
(Picture rights: evismo AG)