



AMPS-QT is a quarterly journal dedicated to all the people and organizations involved in the world of cardiac safety. Published by AMPS LLC, it covers all aspects of methodology and software technology related to clinical trials and Thorough QT studies.

Editorial

In this last 2015 issue of AMPS-QT we would like to present our readers with the results of our attempt to port to the healthcare world some of the technology developed by AMPS for the CRO/Pharma industry, namely CalECG. After so many years where CalECG has been successfully used either for research or, more commonly, in the context of pharmaceutical trials, we decided that the tool was easily adaptable to be used in the day-to-day care and monitoring of patients, and in particular in the context of a tele-medicine service. We launched a pilot service in Italy to test the concept in 2013 and now, almost 2 years later, we asked Paolo Verzeletti, the CEO of CardioCalm, the Italian company offering the service, to provide our readers with a summary of the experiment. Enjoy the report and accept our best wishes for a happy and non-violent new year.

A Noteworthy Contribution:

CardioCalm srl: technological innovation in the Italian market promoted by AMPS-llc

Paolo Verzeletti, MS, CEO of CardioCalm.

"To transfer to the Italian healthcare market the know-how gained from AMPS-llc in the world of pharmaceutical research": this is the mission of CardioCalm, a telemedicine company based in Montichiari (Brescia, Italy), specializing in the analysis of cardiovascular signals. Founded in 2010 by AMPS-llc, CardioCalm seeks to leverage the wealth of knowledge acquired over the years by its US parent company and applying it to the healthcare arena in innovative ways. One such application is a system of

telecardiology that allows remote electrocardiogram diagnostic. *"Our system - explains Paolo Verzeletti, CEO of the company - performs an electrocardiogram that is fully compliant with the guidelines of the international regulatory bodies: the 12-lead ECG is recorded simultaneously and the acquired signal is transmitted digitally to a central repository, without any loss of information and / or distortion, where it is then viewed by qualified cardiologists"* It is an innovative approach in a sector where the presence of systems that are based on analog transmission and on recordings of derivations "in groups of 3-4" is still very widespread. *"The challenge is to create the technological conditions that allow a hospital's cardiological unit to safely and reliably reach out to the local community - continues Verzeletti - becoming true centers of telemedicine."* The system developed by CardioCalm is characterized by the fact that the centers reading the ECGs are proper cardiology units associated with a hospital, a crucial aspect to ensure the quality of the service offered and to allow hospitals to network with their local community. Nursing homes, GPs, pharmacies, Spas, are just a few of the outlets where the local community can benefit from this service. The system was successfully tested in the city of Brescia, located in northern Italy, in partnership with the Cardiovascular Department of Fondazione Poliambulanza, directed by Claudio Cuccia, MD. *"The cooperation with hospital based cardiology units is strategic for us - says Verzeletti. One of the goals of our system is indeed to put our technology at the service of prevention, promoting projects such as screening some of the major cardiovascular diseases. Possible applications in this context are very numerous, with a significant impact in terms of both social and economic consequences: I quote, for example, screening activity of atrial fibrillation for stroke prevention"*. In order to

We are pleased to offer you the journal free of charge for research and personal reflection. Feel free to download an article, or even an entire issue. These are available in PDF format for your convenience. All the articles are copyrighted, so we ask that you not publish or distribute for profit any of the articles without express written permission from AMPS. Please contact AMPS-QT@amps-llc.com for any inquiry.

consolidate and expand the relationship with the hospital cardiology units and implementing a policy of constant improvement of the services offered, CardioCalm will launch in 2016 a new ECGs reading system, which will be entirely web-based. *"It is a new product that complements and enhances the existing system - explains Verzeletti - and that, together with a system of remote signature, will allow cardiologists to read ECGs from any location connected to the Internet, saving time for both reporting and ensuring a high level of flexibility. The features in this new product will make it easier for more hospital cardiology units to join the already existing network as well as enable hospitals, concerned with the costs of adopting a digital ECG reading system, to join at an affordable cost"*. Another application of the AMPS know-how implemented by CardioCalm is a system for measuring stress through the analysis of cardiovascular signals related to the autonomic nervous system. In this arena, the company intends to promote an innovative approach, which aims to find applications in the field of occupational and sports medicine, providing analysis tools supported by extensive literature.

Products News

Looking forward

In the first months of 2016 AMPS is planning to release:

- A new version of our 12-leads measuring algorithm, BRAVO, taking advantage of the benchmark study we have performed between Q4 2014 and Q2 2015.
- A new version of CalECG, Fat-QT and TrialPerfect with the latest version of BRAVO algorithm.
- A new version CSPER (Command line Suite for Processing ECG Recordings) for customizable PDF report and image generation.
- A new version of CER-S, including the following revised platforms:
 - Continuous ECG beat detection and classification
 - ECG beat editor
 - Arrhythmia detection and Arrhythmia editor
 - aECG Generator

AMPS Notebook

Fabio Badilini attended the **American Heart Association**, Scientific Session held from November 7th to 11th in Orlando, FL and the **CSRC Annual Meeting**, held in Washington DC on December 2nd and 3rd.

Fabio will be attending the “2nd Annual Think Tank: Prevention of Sudden Cardiac Death in the Young” organized by CSRC which will be held in Miami, FL on February 18th, 2016.

Treating heart diseases? We need to use our head! Comparison across the board between Fabio Badilini and Claudio Cuccia on cardiovascular topics.

Montichiari, hometown of Fabio Badilini, Chief Scientist of AMPS-llc, has recently been the scene of an evening devoted to the subject of cardiovascular prevention which is destined to leave a mark. On stage, a cardiologist and a biomedical engineer: Fabio Badilini, the biomedical engineer with years of experience researching and analyzing the heart from an engineering perspective and Claudio Cuccia, the cardiologist director of the Cardiovascular Department of Fondazione Poliambulanza. The two have created a real “intellectual ping-pong game”, played between friends with strokes of valuable information and curious anecdotes, borrowed from a personal and professional history that rotates around the heart. And right from the start they were able to gain the sympathy and esteem of the large audience, honoring in full the commitment of removing that threatening halo that usually accompanies cardiovascular diseases. Between recurring applause and hearty laughter, the "game" soon took the

form of a "talk show", one hundred and eighty minutes that literally "flew" and that ultimately provided the audience with a new understanding of the complexities of the heart. To act as a guiding compass to the evening was Cuccia's new book: "*The heart attack. A Small Guide on avoiding it or, if it happens, how to survive happily thereafter*". The event promoters had promised an original evening, able to combine profit and pleasure: judging by the smiles on the faces of many of the participants, we could say that the objective was achieved in full.



Picture taken at the cardiovascular prevention evening held by Fabio and Claudio Cuccia in Montichiari.

Advertisement

**Achieve high precision and quality, save time and money,
use the right ECG tools!**

CalECG

Measure ECG intervals quickly, precisely, and automatically

ECGScan

Convert paper ECGs into XML for FDA submission

Antares

Extract meaningful ECG strips from Holter traces

CER-S

Continuous aECG FDA XML generation for FDA submission,
ECG Beat Detection , Arrhythmia Analysis and Holter Editing