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Sensors, wearables and devices in the e-age: tomorrow's world today

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By the time this issue of EuroIntervention appears, the Apple Watch will have just started to appear in public. Of course there are other manufacturers already in the marketplace such as Peeble, Samsung and Motorola, yet Apple products seem always to dominate the news thanks to clever marketing techniques. All these smartwatch devices purport to have the potential to have a major impact on our daily lives based on their health and activity tracking capabilities. The smartwatch revolution is being hailed as seemingly parallel with the revolution and rapid adoptability of tablets and mobile devices but let's not yet throw caution to the wind as Google Glass has illustrated the flipside of hype.

However, during the recent presentation of the Apple Watch, what caught our attention was the announcement of Apple's ResearchKit. This is a software framework enabling developers to create apps to collect personal health data to improve medical research. The initial focus will be on data relating to Parkinson's disease, breast cancer, diabetes, asthma and cardiovascular diseases. Stanford Medicine and the University of Oxford have developed the cardiovascular disease app using personalised surveys and tasks to track daily activity, fitness, and cardiovascular risk. Thankfully, Alan Yeung from Stanford has confirmed that there will be an Android version to avoid excluding non-Apple users.

For interventional cardiology studies, and in particular the collection of follow-up data, this innovation could lead to a rethink in how we plan and develop studies in the near future. Valid concerns, however, have been raised regarding the security of the collected data and the requirements of regulatory bodies. While these are exciting times for new devices and new applications, one could surmise that, in essence, the next frontier for innovation, competition and productivity may not be the smartwatch or smartphone but actually "Big Data". The generation, collection and analysis of medical "big data" has led the McKinsey Global Institute to predict that "if US healthcare were to use big data creatively and effectively to drive efficiency and quality, the sector could create more than $300 billion in value every year. Two-thirds of that would be in the form of reducing US healthcare expenditure by about 8 percent."

It will take some time before we fully understand the possibilities of Apple's ResearchKit. Nonetheless, closer to home, new steps in improving efficacy and efficiency in clinical research have already been taken. Under the directorship of Marie-Claude Morice, PCR is launching its new initiative, the PCR Clinical Research Course next month in Paris, with the objective of helping meet the unmet needs of study investigators, nurses, technicians and industry.

And just as the initial thoughts in this editorial targeted personalised innovations, the second edition of the PCR Innovators Day, on the eve of EuroPCR next month, will focus on innovations for heart failure, peripheral vascular disease, mitral and tricuspid valve intervention, multimodality imaging and the interventional cathlab of the future. These topics find their roots strongly in our "here and now" and maybe the last topic – interventional cardiovascular care using sensors, wearables and devices in the e-age – will quickly be our "tomorrow's world" today.

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