Dear e/MTIC members,

Look back, look around and look forward are the terms that come to my mind in these times with the coronavirus strongly influencing our personal and professional lives. I hope that you and your family members are safe and will stay safe.

Looking back, I think we realise that our lives and assets are not obvious and health represents enormous value. In this newsletter, we look back on the start of the Medicaid project in late 2019, which will make a strong contribution to (preventive) healthcare in the cardiovascular domain.

Looking around, the critical value of data and data-sharing has never been so clear and e/MTIC is well prepared for data-driven healthcare, both in the Health Data Platform project as well as in many of our interesting projects featuring this newsletter. And good to see what we already achieved in a relatively short time with the TRICA study.

We are looking forward to starting our Picasso project with all our e/MTIC partners. Myrthe tells us more about this in this newsletter. Forward-looking is in my view, also the role of the clinical regulatory team as explained by Susan. Do not postpone building shared knowledge on regulations and interpretations in the registration of medical devices and treatments until you hit the virtual wall. Always look ahead and stay safe!

I trust you will enjoy reading this newsletter and contribute to next issues, building a community of e/MTICs.

Kees van der Klauw
e/MTIC

**MEDICAID**

In 2019 the MEDICAID project has started. In this multidisciplinary project 10 PhD students and 1 postdoc work on Medtech solutions for Earlier Detection of Cardiovascular Disease (MEDICAID). In October we had an inspiring kick-off meeting were all PhD students and their supervisors from all e/MTIC partners presented their plans for the coming 4 years. Read more
Early recognition of Atrial Fibrillation (AF) and Heart Failure (HF)

By Federica Sammali: We envision to identify and optimize personalized decision making for improved patient outcome in cardiovascular diseases, such as atrial fibrillation (AF) and heart failure (HF). By continuous monitoring of lifestyle behaviour, clinical deterioration will be detected timely, enabling effective treatment and improved course of the cardiovascular disease. Read more

Comorbid OSA and insomnia: Cardiovascular diagnosis and phenotyping

By Bernice Wulterkens: Obstructive sleep apnea and insomnia are the most prevalent sleep disorders. However, diagnosis and treatment are challenging in case of co-occurrence. This project focusses on identifying characteristics of this co-morbid disorder. The e/MTIC ecosystem allows to work within a multidisciplinary environment and enables her to set up a clinical study and to use and learn about innovative techniques for data acquisition and analysis. Read more

Automated analysis of abdominal aortic aneurisms by means of ultrasound

By Arjet Nievergeld: An aneurysm (AAA) is a dilation of the aorta, which in case of rupture has a mortality rate of 80%. Clinical guidelines of intervention are based on AAA diameter, which is a generic and suboptimal criterion for determining rupture risk. Personalized models based on ultrasound can be used to determine the rupture-risk in a more patient-specific way. Read more

Towards automated solutions for predictive monitoring of neonates

By Rohan Joshi: The goal of this work has been to develop a methodological framework for the automated detection of clinical deterioration in preterm infants, both acute deterioration such as those reflected by critical patient monitor alarms as well as longer-term deteriorations such as late-onset neonatal sepsis. Read more
Mechanical analysis of aortic aneurysms using 3D ultrasound

By Emiel van Disseldorp: A localized dilation of the aorta, known as aneurysm, can result in a life-threatening hemorrhage when ruptured. Rupture of the aneurysm can be avoided by preventive surgery, however this is not without risks. Within this e/MTIC framework, we are working on biomechanical metrics that can predict if and when an aneurysm should undergo surgery. See video / Read more

Project :PICASSO

By Myrthe van der Ven: In 2020 the PICASSO project will be rolled out, in which six engineering PhD students will be appointed to co-develop novel technological solutions in perinatal medicine, cardiovascular medicine and sleep medicine. All projects within PICASSO are in collaboration with Philips and at least one of the three hospitals. The engineering PhD students will work closely together with clinical PhD students. Read more

A practical e/MTIC case – TRICA Study

e/MTIC collaboration over the full healthcare chain to speed up clinical innovation. The TRICA study is based on ‘‘Healthdot’’ data for post operative monitoring of possible complications. It is one of the world’s first studies of its kind with a start in 2018. It is a collaboration of many connected professionals from the healthcare value chain including Philips, 4 Clinicians (Catharina hospital) and 4 TU/e PhDs. Read more

e/MTIC Task Force - Clinical Regulatory

By Susan Hommerson e/MTIC Clinical Regulatory: In these extraordinary times where we are confined to home, we like to keep our communication lines going. Within the TU/e and e/MTIC, we have set up a clinical regulatory taskforce to help you as a researcher in the regulatory field of clinical research. Read more
Bringing data together from different disciplines, institutes, and possibly registrations can lead to the desired breakthroughs in healthcare. Such a multi-domain and multi-partner data platform is not yet available in the Netherlands. For this reason, e/MTIC is working on a Health Data platform that can be realized together with the e/MTIC partners. Read more (Dutch only)

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