



Eindhoven MedTech Innovation Center



QUALITY OF LIFE

a fast track to clinical innovation

The mission of e/MTIC is to improve value-based health care by creating and growing an ecosystem that offers a fast track to high-tech health innovations in the fields of:

- Perinatal medicine**
- Sleep medicine**
- Cardiovascular medicine**

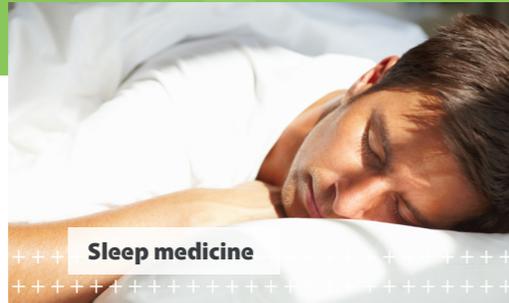
Vision

Future health care is patient centric, value-based, and outcome driven. It builds upon innovation ecosystems that offer collaborative environments between clinical centers, knowledge institutes, and local industry. In this way commercialization and clinical implementation of high-tech health innovations are accelerated.

The Eindhoven MedTech Innovation Center (e/MTIC) is the logical next step in the longstanding and successful collaborations between Catharina Hospital, Eindhoven University of Technology, Kempenhaeghe Epilepsy and Sleep Center, Maxima Medical Center and Royal Philips. e/MTIC accommodates over 100 PhD students, jointly supervised by a similar number of experts from all e/MTIC partners.



Perinatal Medicine



Sleep medicine



Cardiovascular medicine



Examples of generated impact

Over the years, the partnership has established a strong scientific and valorization track record with numerous noteworthy outcomes, including:

MEDSIM

Máxima Medical Center cooperates with Medsim and Nemo Healthcare in organizing simulation trainings with the world's most lifelike childbirth simulator called Victoria. She has accurate anatomic proportions and state-of-the-art pregnancy monitoring technology. Over 60% of Dutch obstetricians have had this training. We also contribute towards reducing maternal and perinatal mortality in Africa, America and Asia.

Smart baby bottle

The Smart Baby Bottle is a sensor-equipped sleeve that tracks bottle feeding routines and provides parents with personalized advice regarding their baby. This data-intensive sleeve is developed in collaboration with end-users: first exploring which data will be of value and next validating the design with prototypes. Philips AVENT is currently developing it for product launch.

Smart Monitoring

Hypertension, Obstructive Sleep Apnea and Atrial Fibrillation are highly prevalent (over 30%, 9% and 2% respectively) and underdiagnosed conditions. If left untreated, patients are at elevated risk of developing more incapacitating medical conditions such as stroke and heart failure. Within e/MTIC, we are developing patient self-monitoring solutions using unobtrusive wearable sensing techniques integrated in watches or patches for timely detection.



Anticipated impact

The anticipated impact of the ecosystem will be of great importance to:

Society

- + New technologies will contribute to improved and sustainable future healthcare.
- + Strengthening the innovative and economic power of the Eindhoven region.
- + Development of leading-edge products and services for high-tech industry.

Clinics

- + Implementation of new technologies that empower value-based, high-volume healthcare, resulting in higher quality at lower costs.
- + Recruitment of top talent.
- + Med-tech education and training of medical staff.
- + Boosting of scientific reputation.

University

- + Attracting scientific top talent.
- + Education of med-tech engineers.
- + Creating maximal societal impact.
- + Excellent scientific results.

Industry

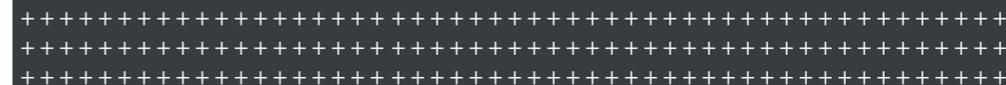
- + Fast track to implementation of innovations.
- + Recruitment of top talent.
- + New med-tech spin-offs.

3D Needle

Ultrasound (US) imaging is broadly used to visualize and guide needle and catheter interventions, but is very challenging, with considerable failure rates (~25-50%) and complications (~5-15%). The key problem is that the field of view is limited by the US beam width, requiring extensive manual repositioning of the probe. This is complex and error-prone, because of imaging artifacts and low signal-to-noise ratio. A new solution using a 3D US probe radically overcomes these problems by automatically detecting and visualizing the entire instrument. This enables the physician to be fully focused on an intervention, while easily and accurately guiding the instrument.

TraceBook

TraceBook is an innovative clinical decision support system that creates digital insight for care providers into patients' individual care process. It helps prevent medical errors by making the entire care process transparent and unambiguous. The system tracks and records characteristics of individual patients from several electronic medical databases, both inside and outside the hospital. Thanks to the use of smart dynamic checklists, TraceBook also helps improve compliance with local and national guidelines.





Ton Flaman

Philips: "We collaborate on topics that have a major impact on society. The hospitals are already excelling internationally on these topics. At a later stage, we hope to expand our collaboration even further to cover other topics."



Gerome Friesen

TU/e: "Internationally, TU/e is number one in publications written together with industry. The publications reflect our extensive collaborations, based on our strategic partnerships."



Lukas Dekker

Catharina Hospital: "This collaboration allows us to participate in innovations that matter, right from first inception. At the same time, valuable cross-pollination between research topics has already had positive impacts. For instance, in a project to study the effects of sleep disorders on cardiac arrhythmias."



Sebastiaan Overeem

Kempenhaghe: "Complementary know-how ensures that we can accelerate meaningful innovations in health-care. These would otherwise have taken much longer to develop."



Guid Oei

Máxima Medical Centre: "Cross-appointments throughout the chain have proven to be key to the success of this collaboration. Physicians advise Philips and are also part-time professor at the university. At the same time, a Philips employee is part-time professor at the TU/e and a TU/e employee also works for Philips or the hospital."



Carmen van Vilsteren

TU/e: "This is a real strategic collaboration: the success of this collaboration is crucial for all partners in the realisation of their own strategic goals, and we have a long term, common roadmap in place."



Jan Bergmans

TU/e: "Two criteria are very important for the success of such a large-scale collaboration: proximity and quality."



Kees van der Klauw

"I recently joined e/MTIC. One of the main reasons was that I was impressed by the passion in the team."

Learn more about e/MTIC? Contact us at info@emtic.nl or +31 (0)40 247 3288

www.emtic.nl

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