

Press release – Background article

From smart patches to tele-robotics: COMPAMED Innovation Forum 2026 looks to the future of emergency medicine

Overcrowded A&E departments, staff shortages, scarce resources and increasingly complex clinical pictures pose major challenges for intensive care and emergency medicine. The digital COMPAMED Innovation Forum 2026, organised by Messe Düsseldorf in collaboration with the IVAM Microtechnology Network (on 21 May), demonstrated the role that miniaturisation and microtechnology can play in addressing these challenges. The event also provided an outlook on current developments that will shape COMPAMED 2026, taking place from 16 to 19 November in Düsseldorf in close conjunction with MEDICA. With their globally unique combination, MEDICA and COMPAMED are the leading international community platforms for the entire medical technology and healthcare industry ecosystem, spanning the entire value chain and including the supply sector.

This year's COMPAMED Innovation Forum impressively highlighted the role this sector plays in implementing sustainable solutions in everyday healthcare. Under the title "Miniaturised MedTech for maximum impact: innovations for emergency and intensive care", experts from hospitals, industry and product development discussed concrete approaches and innovations for the healthcare of the future. Among the innovations presented were wearables for continuous patient monitoring, biosensors, aids for the emergency services, and a new approach to telemedicine-guided stroke interventions.

Carmen Berger, Director of MEDICA and COMPAMED at Messe Düsseldorf, kicked off the event with some positive news for the community: "COMPAMED 2026 is fully booked. This shows that the MedTech industry wants to cooperate and actively shape healthcare." She also emphasised: "COMPAMED is the true heart of the MEDICA ecosystem. The topics of intensive care and emergency medicine demonstrate the synergy between MEDICA and COMPAMED."



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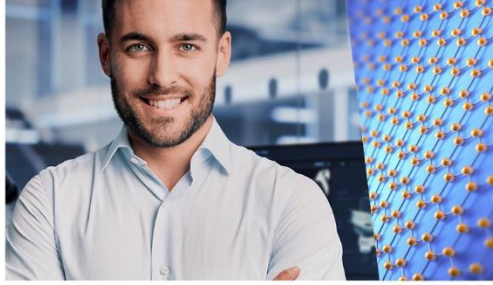
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Tim Merforth, Managing Director of IVAM, added with regard to the events in November: “I am personally very much looking forward to the special exhibition MEDICA HOSPITAL OF THE FUTURE. There we will be able to see how applications can be specifically integrated into hospital practice.”

Human-centred design as the key

Dr Jens Ebnet from Ebnet Medical GmbH provided the technical introduction. Drawing on his practical experience as an emergency physician, he identified key requirements for product development. His core message was: “Understanding the needs of patients and users is the key to human-centred medical technology.”

The focus was on the question of what requirements users actually place on medical devices. Ebnet formulated three guiding principles for this: supporting care, promoting communication and reducing the burden on concentration.

Greater safety in vascular Access

In a second presentation, Ebnet addressed a common clinical problem: the failure of the first puncture attempt during vascular access. Failed attempts can cause infections and injuries. Existing procedures are often resource-intensive and complex.

Ebnet Medical is therefore developing new solutions for intensive care and emergency medicine, including the “Swordcath” vascular access system, a single-handed PIVC, and a kink-resistant catheter. The products are currently still awaiting clinical approval.

With regard to the importance of international cooperation, Ebnet explained: “International cooperation is crucial for improving patient safety and saving lives.”



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Biosensors for new forms of therapy

Dr Andreas Weltin from iST Jobst presented biosensor platforms capable of measuring glucose, lactate and peptides. Applications range from intensive care medicine and organ transport to cell and gene therapies.

Using CAR-T cell therapy as an example, Weltin highlighted the economic challenges of modern treatment methods: “Our goal must be to reduce the costs of these therapies to make them safer and more accessible.”

Microsensors could contribute to this by monitoring cell growth directly in the culture vessel, thereby reducing staffing and laboratory costs.

Wearables not just on the wrist

Erik Jung from Fraunhofer IZM presented textile electronics solutions for patient monitoring. His “System-on-Flex” research group is developing smart patches to record biomarkers, ECG, oxygen saturation, pulse wave analysis, respiratory rate and sweat parameters.

A current project with Charité focuses on monitoring heart failure and high blood pressure. In addition, the team is working on a low-cost triage patch designed to enable rapid assessment of a patient’s condition using optical sensors.

Jung summarised the development as follows: “Wearables as we know them today will evolve – moving away from wristbands towards ‘AnyW(h)ears’” – that is, devices that can be worn on any part of the body.

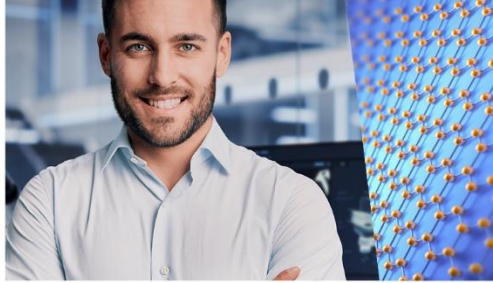
Usability as a safety factor

Sarah Ptach of Canyon Labs Holdings LLC turned her attention to the user-friendliness of medical devices. Particularly in A&E and intensive care units, even minor design flaws can become safety risks under stressful conditions.



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“Product designs and packaging must be conceived with emergency medicine, the ambulance and the A&E department in mind,” Ptach cautioned.

Miniaturisation often increases the demands on operation. Typical sources of error include elements that are difficult to see, connectors that can be confused, or complex preparation steps. Her conclusion: usability is not a design luxury, but a clinical safety requirement.

Telemedical robotics for stroke patients

Dr Evaldas Kalvaitis from Sentante presented a telemedically operated endovascular robotic system intended for future use in mechanical thrombectomy.

“Endovascular surgery is the last surgical specialty without a market-dominating robot,” stated Kalvaitis.

The system mimics the manual advancement of a catheter whilst simultaneously providing data for AI training. The first transatlantic procedures have already been successfully performed. CE marking has been obtained, and market entry in Europe is imminent.

Wristband for continuous heart monitoring

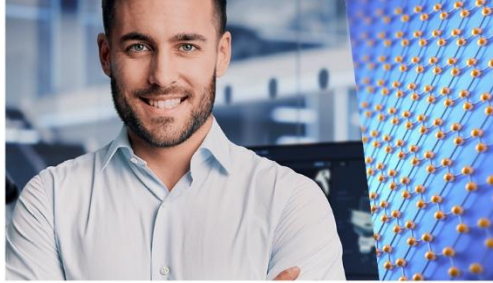
Mantas Aleckūnas from Teltonika Telemedic and Dr Justinas Bacevičius from Vilnius University presented the CE-certified Teltoheart wristband for continuous 6-channel ECG monitoring. “The prevalence of heart disease is increasing everywhere,” emphasised Aleckūnas.

Bacevičius highlighted the clinical benefits: the 6-channel ECG is superior to the traditional 1-channel ECG, particularly in the early detection of atrial fibrillation, and is now recognised by the European Heart Rhythm Association.



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Miniaturisation as a lever for better care

The COMPAMED Innovation Forum 2026 made it clear: miniaturisation is not an end in itself, but a lever for safer, more accessible and more resource-efficient care. From smart sensors and wearables to telemedicine robotics, new technologies demonstrate how medical care can be improved under challenging conditions.

COMPAMED will present further applications and innovations from 16 to 19 November 2026 in Düsseldorf in Halls 8a and 8b – in direct conjunction with MEDICA as the world's leading community platforms for the entire medical technology and healthcare industry ecosystem.

All information on COMPAMED 2026 online: <https://www.compamed-tradefair.com>.

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