Convegno organizzato da:

HUMANITAS GAVAZZENI    UNIVERSITAS STUDIORUM BERGOMENSIS    HR FONDAZIONE HUMANITAS RICERCA

# *New technologies and AI in Hybrid Cardiac Ablation*

Friday 12 and Saturday, September 13, 2025
Sant'Agostino, Piazzale Sant'Agostino 2 - Bergamo

## Scientific Committee

*Alfonso Agnino, Eduardo Celentano, Andrea Remuzzi, Ettore Lanzarone, Sergio Caravita*

**Presidents***: Antonino Pitì, Mauro Rinaldi*

## Abstract

Health care solutions driven by artificial intelligence (AI) offer the potential for more personalized, precise treatments and improved health outcomes. But what does this mean for the future of cardiac interventions? Could robotic platforms redefine procedures and become the new gold standard? Will thoracoscopic and robotic hybrid approaches accelerate the transition toward fully endoscopic procedures? How do we balance early adoption of guidelines with the learning curve associated with new technology-driven techniques?

This is not just a technical evolution — it marks the dawn of a new surgical era. Leaders must address several challenges, including data quality and bias, algorithmic transparency and trust, and skills gaps, all while maintaining a strong focus on patient-centric care and treatment personalization.

The Scientific Committee, Humanitas Gavazzeni-Castelli Hospital, and the School of Engineering at the University of Bergamo are proud to announce the first course, **"New Technologies and AI in Hybrid Cardiac Ablation,"** to be held in Bergamo on **September 12th and 13th, 2025**. This unique platform will explore the latest advancements in the treatment of cardiac arrhythmias, featuring an international faculty of renowned cardiologists, electrophysiologist, cardiac surgeons, anesthesiologists, nurses, and bioengineers — all contributing to an integrated Heart Team approach.

The meeting will be structured into three main sections:

- **Hybrid and AI-Based Management of Persistent Atrial Fibrillation**
- **Ventricular Hybrid Ablation**
- **AI-Driven Innovations in Robotic Cardiac Surgery**

The event aims to foster multidisciplinary collaboration and encourage the exchange of knowledge and experience in the field of cardiac ablation. Participants will have the opportunity to discover cutting-edge technologies and AI applications that are revolutionizing the treatment of cardiac arrhythmias.

# Program

## Friday 12 September - Hybrid approach in AF and VT ablation

08.00 Registration

08.45 Welcome
*Humanitas Gavazzeni, Humanitas University, Università degli Studi di Bergamo, Comune di Bergamo, Fondazione Humanitas per la Ricerca, Alfonso Agnino, Eduardo Celentano,*


09.00 ***Invited Lecture***
AI in Cardiology: How? When? – Gianluigi Condorelli (Italy)


*Atrial Arrhythmias Section*
*Chairmen Mauro Rondi (Italy), Claudio Tondo (Italy), Eduardo Celentano (Italy), Michele Di Mauro (Italy)*

09.30 Persistent and Long Persistent Atrial Fibrillation – Natasja De Groot (Netherlands)

09.45 The role of the electrophisiologist: endo treatment and its results –Tom De Potter (Belgium)

10.00 The role of the cardiac surgery: endo – epi treatment and its results –Alfonso Agnino (Italy)

10.15 LAAOS III –Domenico Paparella (Italy)

10.30 The role of the interventional cardiologist- left atrial appendage closure after ablation for atrial fibrillation –Davide Cao (Italy)

10.45 Discussion – *Discussant: Stefano Schena (USA), Mauro Rinaldi (Italy), Eduardo Celentano (Italy), Paolo Panisi (Italy)*

11.30 Coffee Break


12.00 *Chairmen –Stefano Schena (USA), Fabio Barili (Italy), Alessandro Parolari (Italy), Francesco Solimene (Italy)*
   ***Lectio Magistralis*** - State of the art in the treatment of cardiac atrial arrhythmias –Ralph Damiano (USA)


12.30 Hybrid Convergent –Thorsten Hanke (Germany)

12.45 Robotic Convergent –Mario Gasparri (USA)

13.00 Discussion

13.30 Lunch


*Ventricular Arrhythmias Section*
*Chairmen: Michele Pilato (Italy), Tom De Potter (Belgium), Giovanni Albano (Italy), Piersilvio Gerometta (Italy)*

14.45 VT State of art –Gerardo Nigro (Italy)

15.00 VT: Endo/Epi treatments – Maria Lucia Narducci (Italy)

15.15 Pre-operative planning: the importance of hearth images – Gianluca Pontone (Italy)

15.30 Hybrid approach for VT ablation –Eduardo Celentano (Italy)

15.45 "Assistance" techniques during the treatment of ventricular arrhythmias- Roberto Lorusso (Netherlands)

16.00 The role of the anesthetist in the management of cardiac arrhythmias – Matteo Parrinello (Italy)

16.15 Discussion – *Discussant: Natasja De Groot (Netherlands), Roberto Lorusso* (Netherlands), *Eduardo Celentano (Italy), Davide Personeni (Italy)*

17.00 Closing remarks


## Saturday 13 September AI-driven innovations in robotic cardiac surgery

08.30 Registration

09.00 Welcome (Ettore Lanzarone, Maria Laura Costantino, Antonino Pitì)

### *AI in atrial fibrillation and VT management*
*Charimen: Ettore Lanzarone (Italy), Piersilvio Gerometta (Italy), Giorgia Bonalumi (Italy), Elvis Brscic (Italy), Alfonso Agnino (Italy)*

09.15 Automatic AI-based image analys to support innovations in robotic cardiac surgery – Elisa Scalco (Italy)

09.30 Augmented Reality-Based Holographic Device to Optimize Ports Placement in Robotic Cardiac Surgery – Valentina Brembilla (Italy), Ettore Lanzarone (Italy)

09.45 ML Tools for Early Prediction of Robotic Epicardial Ablation Efficacy – Daniele Salvi (Italy), Ettore Lanzarone (Italy)

10.00 Shared robotic solutions for endovascular catheters – Anna Bicchi (Italy)

10.15 AI-based analysis of 3D transesophageal echocardiography for intraprocedural guidance in structural interventional cardiology – Emiliano Votta (Italy)

10.30 AI in AF and VT Management: new generation of implantable loop recorder – Ernesto Cristiano (Italy)

10.45 Discussion – *Discussant: Giovanni Albano (Italy), Erika Bertella (Italy), Eduardo Celentano (Italy)*

11.15 Patient-specific anatomical models for preoperative planning and training in endoscopic interventions – Stefania Marconi (Italy)

11.30 Digital twins to improve operating room configurtion in robotic cardiac surgery – Martina Doneda (Italy), Ettore Lanzarone (Italy)

11.45 Discussion

12.30 Closing remark

## *Parallel Session – Sala Castoldi*

## *Nursing: AI-driven innovations in Cardiovascular Nursing*

## Abstract

A special event will be dedicated to exploring the evolving role of artificial intelligence in cardiothoracic surgery and electrophysiology.
The program has been specifically designed for nursing professionals, whose role is essential across the entire continuum of care — from the operating room to patient recovery and rehabilitation.

The agenda will address how AI is currently influencing the planning, monitoring, and delivery of care — within operating theatres, during hospitalization, and throughout the rehabilitation phase.

This event aims to provide a valuable opportunity for the exchange of knowledge, experiences, and perspectives regarding a future in which technology enhances and supports the practice of care.

The congress will also serve to illustrate how human expertise and artificial intelligence are integrated in daily clinical workflows — in the operating room, during inpatient care, and at the patient's home during the rehabilitation journey.

## Program

09.00 Welcome
*Charimen: Chiara Azzolari (Italy), Vincenzo Fiorentino (Italy), Katia Morstabilini (Italy)*

09.30 Intervention of the operating block nurses: from the birth of robotic cardiac surgery to today (when it was born, how it was born, how it has evolved) – Maria Chiara Santoro (Italy), Amalia Ruxandra Sabadas (Italy)

10.00 Intervention of the operating block nurses and haemodynamics: the multidisciplinary management of the electrophysiology patient – Marco Panseri (Italy) – Natalia Zaitseva (Italy)

10.30 Intervention of the intensive care nurses: how nursing care in intensive care is evolving for this type of patient; the impact on the hospital stay of these patients – Giacomo Bergamelli (Italy), Stefano Iovino (Italy)

11.00 Scholarship Award

11.30 Pre-habilitation on the robotic cardiac surgery patient – Eveline Bravi (Italy), Sara Cisana (Italy)

12.00 Intervention by hospital nurses: the use of Verso Vision in cardiac surgery patients: how nursing care is changing – Chiara Pulcini (Italy), Jessica Pasinetti (Italy)

12.30 Discussion

13.00 Closing remarks