

## History of the Department of Anesthesiology KU Leuven – University Hospitals Leuven 1948 - 2026

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### Professor Dr. Jan Van de Walle Chair 1948 – 1986

Professor Dr. Jan Van de Walle was a pioneer in the development of academic anesthesiology in Europe. He obtained his M.D. at the Catholic University of Louvain, where he initially started his professional career as a resident in the Department of Obstetrics and Gynaecology. In 1946 he moved to Oxford, where he received formal anesthesia training at the Nuffield Department of Anaesthetics at the Radcliffe Infirmary under the guidance of Sir Robert Macintosh. In 1947 he was appointed Fellow of the Faculty of Anaesthetists of the Royal College of Surgeons of Great Britain and Ireland, becoming the first Belgian physician to obtain this distinction. He subsequently moved to London, where he worked under Professor Robotham and acquired proficiency in bronchoscopy.

Upon returning to Belgium in 1948, he initiated the anesthesia section within the Department of Surgery at KU Leuven, where he became Lecturer in Anesthesia. In those pioneering days of professional anesthesia in Belgium, Jan Van de Walle began with only two residents. He introduced new anesthetic techniques that gradually expanded the scope of surgical interventions, including thoracic and intracranial surgery. He provided anesthesia services not only at KU Leuven but also in many hospitals throughout Flanders.

In 1953 he was appointed Professor and Chairman of the now independent Department of Anesthesia at KU Leuven, one of the first academic chairs in anesthesiology in continental Europe. The department grew steadily, parallel to the expansion of medical and surgical possibilities. In 1959 the first open-heart operation in Belgium using extracorporeal circulation was performed at KU Leuven, with Jan Van de Walle serving as both anesthetist and perfusionist.

His observation that postoperative deaths could be prevented by prolonging mechanical ventilation and maintaining the patient's internal milieu led to the establishment of a dedicated intensive care unit, which opened in 1965 with six beds. An emergency medicine section was added the following year, in 1966. With these developments, the department played a pioneering role not only in anesthesiology but also in intensive care medicine and emergency medicine in Belgium.

The teaching of Sir Robert Macintosh marked Jan Van de Walle's entire academic and clinical life, and he transmitted these principles to his students in aphorisms such as:

- “There should be no deaths due to anesthesia.”
- “It is not the drug that is dangerous, but the man who gives it.”
- “Just enough to do the job.”
- “A little will go a long way.”

Professor Van de Walle was a perfectly balanced academic—an excellent clinician, investigator and teacher. Many of those who trained under him later became professors of anesthesia, and several became chairmen of academic departments. Belgian anesthesiologists regard him as a true pioneer and remain grateful for everything he did to advance not only clinical anesthesia, but also intensive care medicine, emergency medicine and pain medicine.

During this period several important milestones occurred:

- 1950: Start of the journal *Acta Anesthesiologica Belgica*
- 1954: Recognition of anesthesiology as a medical specialty in Belgian law
- 1964: Foundation of the Belgian Society of Anaesthesiology and Reanimation.

Professor Dr. Hugo Van Aken  
Chair 1986 – 1995

Professor Hugo Van Aken became Chair of the Department in October 1986. He had previously trained as a resident in anesthesiology at KU Leuven from 1976 to 1980 and subsequently worked as a staff member at the Department of Anesthesia and Intensive Care at the Westphalian Wilhelms University under Professor Peter Lawin.

One of his major goals—beyond clinical anesthesia—was to establish a strong research program within the department and to build its international reputation. In January 1987 the department organized its first international congress of anesthesiology, which has continued annually ever since.

In 1988 the Belgian Anesthesia Safety Steering Committee was established, and the Belgian Standards for Patient Safety were defined, including the mandatory use of pulse oximetry and capnography in every anesthetic procedure. Belgium was among the first countries to implement these safety standards nationwide.

During this period fast-track surgery was introduced for abdominal and thoracic surgical procedures using thoracic epidural anesthesia combined with light general anesthesia. At the same time, a postoperative pain service was established.

In obstetric anesthesia, the department implemented a 24-hour epidural service. Within two years the epidural rate increased from approximately 5% to 75%, mainly due to the introduction of low-dose bupivacaine combined with sufentanil, which improved labor quality while maintaining maternal and neonatal safety. This technique became widely known.

The department also introduced transoesophageal echocardiography in cardiac risk patients, becoming the first department in Belgium to implement this technique. In the animal research center, experimental models were developed to investigate the cardiodynamic effects of different anesthetic techniques and the placental transfer of anesthetic drugs.

During this period eleven anesthesiologists obtained a PhD in anesthesiology, several of whom later became department chairs themselves. Prof. Van Aken later became chairman in Münster and remained an internationally highly influential academic anesthesiologist with numerous leadership positions in European and international societies.

Professor Dr. Eugene Vandermeersch  
Chair 1995 – 2010

Eugene Vandermeersch was appointed Chair and Full Professor in 1995. Before becoming chair, he served as Operating Room coordinator and played a key role in streamlining and organizing the operating theatres at the University Hospitals Leuven, making them highly efficient and well organized.

Professor Vandermeersch was a brilliant clinician and was instrumental in developing the major organ transplant programs at KU Leuven, including lung, liver and heart transplantation. His PhD thesis focused on the combined spinal-epidural technique, which he widely introduced in various surgical interventions.

One of his major achievements was the development of the surgical day care centre at the Gasthuisberg campus, which served as a national and international example of how a surgical day-case unit should be organized. He also strongly promoted the concept that anesthesiologists should provide anesthesia outside the operating room, anticipating the later development of Non-Operating Room Anesthesia (NORA).

He was also instrumental in implementing continuous consultant presence in the operating room and hospital 24/7, making the department one of the first university departments of anesthesiology in Belgium to provide permanent senior coverage.

During his tenure, research activities were further developed, supported by the appointment of a full-time research nurse who facilitated investigator-initiated trials and industry-sponsored research. The number of trainees increased significantly, allowing safer care through the principle of one anesthetist per patient.

Professor Vandermeersch also served as secretary-general of the Belgian Society of Anesthesia and played a key role in updating the Belgian safety guidelines, which significantly influenced anesthetic practice nationwide.

Professor Dr. Marc Van de Velde  
Chair 2010 – 2022

Marc Van de Velde graduated from KU Leuven as Doctor of Medicine in 1991 and started anesthesia training in the same year. He became consultant anesthetist at the University Hospitals Leuven in 1997 and completed his PhD on metabolic support of the stunned myocardium in 2000 under the supervision of Prof. Patrick Wouters. He became professor at KU Leuven in the same year.

Between 1997 and 2010 he served as clinical director of Obstetric Anesthesia and Non-Operating Room Anesthesia (NORA). During this period, NORA expanded significantly and became a major activity of the department.

In 2010 Marc Van de Velde became Chair of the Department. During his tenure, the department continued to mature clinically and expanded significantly. The number of staff members increased from approximately 20 in 2010 to 32 in 2022. The department managed the full spectrum of surgical interventions, with more than 50,000 anesthetics performed annually. Fellowship programs were developed in regional anesthesia (Steve Coppens), obstetric anesthesia (Marc Van de Velde, Sarah Devroe), and cardiothoracic and vascular anesthesia (Steffen Rex, An Schrijvers and Dieter Van Beersel), all of which became highly successful.

During his tenure, and with the support of Prof. Steffen Rex and Prof. Arne Neyrinck, a renewed focus on research was established. This resulted in numerous PhD theses (An Teunkens, Geertrui Dewinter, Sarah Devroe, Kris Vermeylen, Matthias Desmet, Kristof Nijs, and Catherine Vandepitte), a significant increase in scientific output, and a stronger academic presence of the department within the University.

The number of trainees increased further due to the growing need for anesthesiologists. Prof. Van de Velde also implemented a more structured and rigorous training program, including the Master after Master education in specialized medicine. In addition, a course in the Bachelor of Medicine curriculum (“The Peri-operative Trajectory”) was introduced as a mandatory course for third-year bachelor medical students.

### **Professor Dr. Steffen Rex** *Chair 2022 – present*

Professor Dr. Steffen Rex became Head of the Department of Anesthesiology at the University Hospitals Leuven in 2022. He studied medicine at the Philipps University of Marburg in Germany, where he also completed his doctoral thesis in experimental neurochemistry. He trained in anesthesiology and intensive care medicine in Wiesbaden and later at the University Hospital of the RWTH Aachen under the mentorship of Professor Dr. Rolf Rossaint, who had a major influence on his clinical, scientific and academic development. During his training and subsequent staff positions in Aachen, he developed a strong interest in cardiothoracic anesthesia, critical care medicine, perioperative hemodynamics and translational research.

After completing his specialization in anesthesiology, intensive care medicine and prehospital emergency medicine, he worked as consultant anesthesiologist and intensivist in Aachen with major responsibilities in cardiothoracic anesthesia, burn care and cardiothoracic intensive care. He performed a postdoctoral research fellowship at KU Leuven focusing on right ventricular function, pulmonary hypertension and perioperative hemodynamics, which formed the basis of his habilitation on right ventricular pathophysiology and perioperative monitoring.

In 2011 he joined the Department of Anesthesiology at the University Hospitals Leuven as consultant anesthesiologist with responsibility for cardiothoracic and vascular anesthesia and congenital cardiac anesthesia. Over the years he assumed several leadership roles within the department, including Operating Room coordinator, Director of Clinical Research and Director of Cardiac Anesthesia, before being appointed Head of the Department in 2022.

His scientific work focuses on perioperative hemodynamics, cardiac anesthesia, perioperative inflammation, enhanced recovery after surgery, organ protection, sustainability in anesthesia, pediatric and fetal anesthesia, and perioperative outcome research. He has (co-)supervised numerous PhD theses (Gert-Jan Eerdeken, Idris Ghijselings, Raf van de Eynde, Wencke Renette, Koen Lapage, Eva Roofthoof, Steve Coppens, Danny Hoogma, Tom Bleeser, Laura van Hese, Sarah Devroe, Layth al-tmimi, Geertrui Dewinter, Sining Zeng, Bart Vaes, Sofian Bouneb, Arjen Benders, Dieter van Beersel, Kelu Yang, Veerle Desloovere, An Teunkens, Lennart Van der Veecken) and contributed to the international academic positioning of the department through research collaborations, international societies and scientific meetings. Under his supervision, multiple doctoral projects were completed in areas such as enhanced recovery, patient blood management, neuroprotection, transplant anesthesia and perioperative outcome research.

### **Vision of the Department**

The department has defined a strategic vision focusing on perioperative medicine, quality of care, innovation, academic excellence and sustainable growth of the specialty.

A central element of this vision is the evolution of anesthesiology from a discipline focused mainly on intraoperative anesthesia toward a broader role in perioperative medicine, including

preoperative risk assessment and optimization, intraoperative management, postoperative care, pain management and long-term outcome improvement. Enhanced Recovery After Surgery (ERAS) pathways, perioperative hemodynamic optimization, patient blood management and multimodal analgesia play a central role in this strategy.

A second pillar of the vision is innovation and digital transformation, including advanced monitoring, point-of-care ultrasound, data integration, artificial intelligence for risk prediction and workflow optimization, and automation of preoperative assessment pathways. These developments aim to improve patient safety, efficiency and quality of care while addressing future workforce and capacity challenges.

The department also aims to maintain and further strengthen its position as an international academic reference center in anesthesiology, perioperative medicine, transplant anesthesia, cardiac anesthesia, regional anesthesia and enhanced recovery programs. This includes continued investment in research, doctoral training, international collaborations and participation in international scientific societies.

Finally, sustainability and responsible healthcare are important strategic priorities, including reduction of environmental impact of anesthetic techniques, optimization of resource utilization, and development of future-proof organizational and staffing models in response to changing healthcare systems and workforce limitations.

The overall vision is to position the Department of Anesthesiology at KU Leuven and UZ Leuven as a leading European center for perioperative medicine, academic anesthesiology, innovation and high-complexity care, combining excellence in clinical care, research, education and organizational leadership.

A key strength of the department is its dedicated and highly motivated staff of clinicians, who provide high-level anesthesia care while simultaneously educating and training many young anesthesiologists each year. Their commitment forms the foundation of the department's strong research tradition and ongoing academic development. Nationally and internationally, many members of the department serve(d) on boards of various scientific societies (BAAS, BAPA, BeSARRP, EACTAIC, ESAIC, ESRA, ISAIC, IACA, OAA) and became recognized experts in their fields, further strengthening the academic reputation of the department.

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