

# The World's First Hybrid Robotic Surgery Took Place at the Inselspital in Bern

The world's first hybrid surgical robot is a Swiss robot called Dexter. Together with Distalmotion, surgeons at the Inselspital and Lindenhofspital in Bern, as well as the CHUV in Lausanne, have pioneered innovation in minimally invasive care with their input in the development of Dexter. The Inselspital made history with the first clinical use of Dexter in gynecology.

**Lausanne, 09 July 2021:** Distalmotion announced today the successful completion of a series of hysterectomy cases (removal of the uterus) with Distalmotion's novel surgical robot, Dexter. This marks Dexter's first clinical use and the culmination of a multi-year journey in the development of Dexter.

The world's first Dexter surgeries in gynecology were successfully completed without complications by Prof. Michael Müller, Dr. Sara Imboden and their team in the gynecologic oncology department of the Inselspital. This first series of Dexter surgeries is part of a pan-European Early Adopter Program that aims to lead the way in making best-in-class minimally invasive care more accessible to a wider array of hospitals and patients by leveraging Dexter's novel, hybrid approach to robotic surgery.

Designed, developed and manufactured in Switzerland, Dexter is the result of several years of iterative design and development work conducted in close collaboration with world-leading surgeons. In the lead-up to this milestone, Prof. George Thalmann and his team in the Inselspital's urology department played an elemental role in the development of Dexter, as did Dr. Dominik Böhlen, who heads the center for prostate cancer (DKG certified) at the Lindenhofspital in Bern, and Prof. Dieter Hahnloser and his team in the department for visceral surgery at the University Hospital Lausanne (CHUV).

This first case series sets up the next phase in Dexter's quest to give more patients access to best-in-class, robotically assisted minimally invasive care. Alongside other renowned European hospitals, the Inselspital is poised to continue to play a pivotal role in this mission, as a reference center in an Early Adopter Program conducting extensive clinical studies, and contributing towards developing standards and training protocols for various applications of hybrid robotic surgery with Dexter.

Prof. Müller, Co-Director and Chief Surgeon at the Inselspital's gynecology department confirms: "We have successfully completed a first case series using a hybrid approach to robotic surgery. In each of these cases the team drew on both techniques, laparoscopy and robotics, leveraging proven laparoscopic workflows where it felt these were most efficient and effective, and drawing on robotic aid via Dexter where this was most useful."

Dr. Sara Imboden, Lead Surgeon at the Inselspital, adds: "We have piloted the interplay of robotics and laparoscopy with these first hysterectomy cases. For the long-term, we will continue to investigate this approach, confirming and assessing outcomes and techniques through clinical studies."

## Dexter: Developed with surgeons, for surgeons

Surgeons worldwide are convinced that robotics is the future of surgery. Fewer complications, shorter hospital stays and less scarring are among the benefits of robotic aid that contribute to overall superior patient outcomes. Yet, the traditional approach to robotic surgery has struggled for widespread adoption. This is because in robotic surgery one size does not fit all and the traditional approach to robotic surgery has rigidly imposed its tools and processes on surgeons by establishing a false dichotomy, forcing surgeons to choose between robotics and conventional laparoscopy (manual minimally invasive “keyhole surgery”). Furthermore, the traditional approach to robotic surgery is inherently complex and employs a setup that was originally developed to facilitate remote surgery for military purposes - where surgeons are separated from their teams and patients, sometimes not even being on the same continent. With added complexity also come added costs. To date, this combination of complexity, rigidity, separation and cost has limited the adoption of surgical robots in minimally invasive care.

Enabling more surgeons, patients and healthcare systems to reap the benefits of robotic surgery requires breaking with the paradigms of traditional robotic surgery, starting by reducing complexity and rigidity, and by bringing surgeons back to their patients. Dexter achieves this by translating the advantages of conventional laparoscopy and the benefits of robotics into an integrated platform that allows surgeons to choose freely between laparoscopy and robotics. Counter to the traditional approach, Dexter gives surgeons access to the best of both worlds – laparoscopy and robotics – at a fraction of the cost of conventional surgical robots. Dexter caters to a wide array of procedures without disrupting established work flows in the OR, yet overcoming certain limitations of laparoscopy by leveraging the key benefits of robotics. Said key benefits of robotic surgery that Dexter employs are: instrument articulation, precision, control and ergonomics. Together with Prof. Thalmann, Dr. Böhlen, Prof. Müller, Dr. Imboden and Prof. Hahnloser, Distalmotion will continue to develop standards and procedure guidelines for hybrid robotic surgery with Dexter, in order to enable surgeons to jointly leverage the benefits of laparoscopy and robotics.

## Made in Switzerland: From first concept, to first case series

Dexter is a swiss solution whose efficacy has now been proven by a leading Swiss healthcare institution. The robot, its single-use instruments and all accessories are manufactured in Switzerland. From 2012 to 2020, Dexter’s development paired Swiss engineering excellence with leading surgeons from all over the world, spearheaded by Prof. Thalmann at the Inselspital in Bern, Dr. Böhlen at the Lindenhofspital and Prof. Hahnloser at the CHUV in Lausanne.

Dexter has come a long way, from design-sketches conceived at the Robotics Lab of the EPFL in Lausanne, to unlocking the core benefits of robotics in clinical use. Between then and now lie countless test runs in dry- and wet-labs, as well as numerous design iterations - beginning with a purely mechanical version of Dexter (which does not exist anymore today) and yielding the motorized robot that we know as Dexter today.

Commenting on how an iterative design and development process culminated in hybrid robotic surgery being implemented in Dexter’s first clinical case series, Prof. Thalmann, Director and Chief Surgeon of the Inselspital’s urology department, said: “A hybrid approach, leveraging the strengths of both laparoscopy and robotics, will help make the benefits of minimally invasive surgery more accessible.”

Prof. Hahnloser, the CHUV's chief visceral surgeon, adds: "Dexter has the potential to positively impact many millions of patients undergoing surgery in various areas of the abdomen every year. Having been a part of Dexter's journey since 'Day 1', my team and I are thrilled to continue to play a role in pushing the innovation frontier. The hybrid approach can improve access to best-in-class care for many patients worldwide."

Dr. Böhlen, head of the center for prostate cancer at the Lindenhofspital, summarizes: "The underlying principle of the hybrid approach is to democratize robotics, optimizing usability and emphasizing user-friendliness in order to make the benefits of robotic aid more accessible. It is important to keep in mind that a surgical robot is a tool intended to aid the surgeon, no more and no less – and definitely not the other way around. This includes ensuring that the robotics platform is future proof, an open platform that allows for innovation, for example in the fields of energy-devices and imaging technology."

### A new standard of care: Robotic surgery for everyone

Dexter is out to establish a new standard of care, where a broader range of institutions, indications and ultimately patients can benefit from robotic aid for minimally invasive surgery. Dexter's versatility makes having more than one robot per hospital clinically and economically viable –potentially even having more than one Dexter per department. For some hospitals this would represent a giant leap forward in terms of breadth and quality of care provided.

Looking ahead, Michael Friedrich, CEO of Distalmotion, shares some perspective: "We have unboxed the surgeon, brought the surgeon back into the sterile field, closer to her/his team and patient. We had heard this approach labelled a 'win-win-win situation' before, and we obtained CE mark for it in December 2020. Now we have clinical confirmation that it is just that: a win-win-win for patients, OR teams and hospitals. Hence, we will now bring Dexter to more hospitals in Europe, as a first step. We will collect further clinical evidence in the process and continuously remain open to further innovation and optimization, always in close collaboration with surgeons." Michael adds: "Being from Bern myself, accomplishing this milestone together with the world-leading surgeons based in the heart of the city, at the Inselspital, makes it that little bit more special."

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## Background & Contact

### About Distalmotion

Distalmotion is a medical device company founded and based in Lausanne, Switzerland. Our mission is to remove the complexity out of robotic surgery in order to establish a new standard of care, where all patients in general surgery, gynecology and urology have access to best-in-class minimally invasive care. To do so, we have developed a surgical robot called Dexter. Designed, developed and manufactured in Switzerland, Dexter integrates the benefits of laparoscopy and robotics. For further information visit: [dexter.surgery](https://dexter.surgery) and follow us on LinkedIn/Twitter: @Distalmotion.

### Attachments

Images 1-3: Dexter in action, hysterectomy cases at Inselspital Bern. Images 1-3 free to use with reference of the following credits: "Distalmotion/Dr. S. Imboden (Inselspital Bern)"

Image 4: Dexter, the world's first and only hybrid surgical robot (2 x robotic instrument arms, 1 x robotic endoscope arm, 1 x console). Image 4 free to use with reference of the following credits: "Distalmotion"

Images 5-6: Distalmotion and Dexter logos - free to use

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