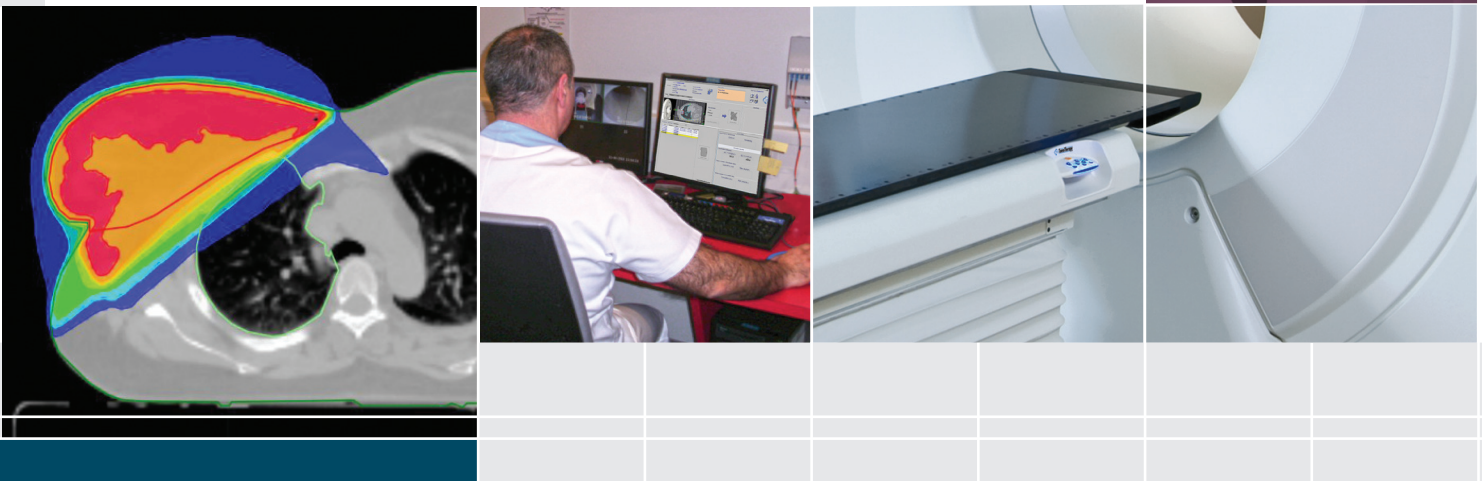


TomoDirect™

Giving Clinica Luganese the Flexibility to Precisely Treat Their Patients

TomoTherapy
HI-ART



Institution: Clinica Luganese,
Lugano, Switzerland

Clinica Luganese is a small, 184-bed non-profit hospital in southern Switzerland. Founded in 1900 by the Suore Infermiere dell'Addolorata, the hospital's mission has always been to treat all patients, regardless of socio-economic or religious distinctions. However, without a radiation therapy department, the clinic was not able to adequately treat its cancer patients.

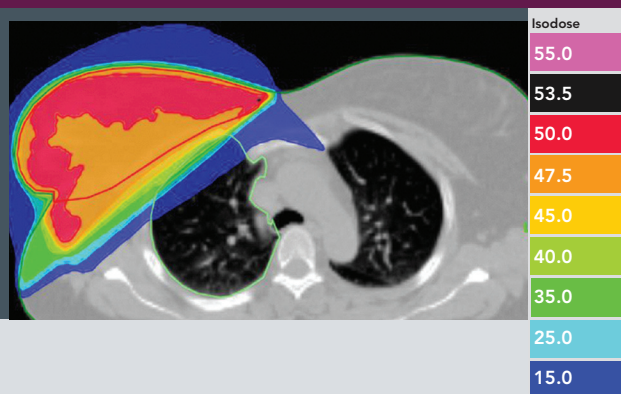
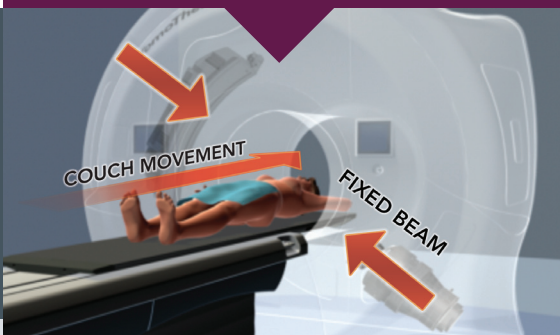
To meet that need the hospital hired medical physicist Stefano Presilla to help establish a radiation therapy department in 2009. The team, headed by radiation oncologist Dr. Alessandra Franzetti-Pellanda, chose the TomoTherapy® Hi-Art® treatment system as their sole linear accelerator. Within one month, they were treating their first patient. Within six months, the group added *TomoDirect*, a discrete angle treatment that gave them unprecedented flexibility to treat many disease sites precisely.

TomoTherapy®
ACCURAY®

HOW TOMODIRECT WORKS

TomoDirect is a discrete angle, non-rotational treatment delivery mode designed to complement the *TomoHelical*SM delivery mode. It is available as an option for the *Hi-Art* treatment system, and is a standard feature on the *TomoHD* treatment system.

It applies the same *Hi-Art* treatment quality using fewer fixed beams and continuous couch motion. *TomoDirect* delivers all beams for each target sequentially, with a single turn of the operator console key. This allows users to plan and treat routine cases with greater efficiency, yet maintain the gold standard of *TomoTherapy*'s unique beamlet-based delivery.



WHY TOMOTHERAPY AND TOMODIRECT?

Because Clinica Luganese is small and only needed one linear accelerator, the team knew they needed to choose carefully. They identified three key criteria in their search:

- Deliver an advanced technology for the region.
- Gain the ability to treat all types of cases, from simple to complex.
- Deliver image-guided, intensity-modulated radiation therapy (IG-IMRT), because it would mean shorter, more accurate treatment for patients and greater productivity for the hospital.

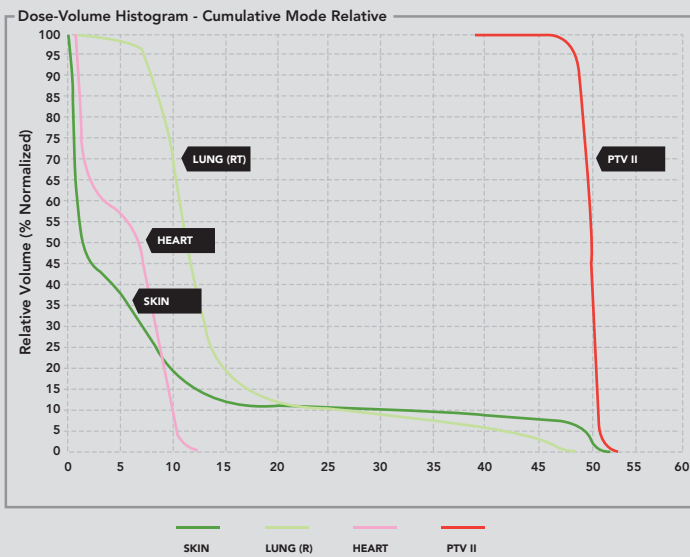
To fulfill all the requirements, the team chose the *TomoTherapy* platform. They were especially impressed with its new, dedicated design for IMRT and IGRT and how quickly it would become operational. "Within one month of arrival, we treated our first patient. That is a very short timeframe to complete linac commissioning and training," Dr. Presilla acknowledged. "It was a pleasant surprise and an added benefit of choosing *TomoTherapy*."

Another pleasant surprise came six months later, when *TomoTherapy* introduced the *TomoDirect* delivery mode. "Unlike *TomoHelical*, *TomoDirect* uses a fixed gantry angle, similar to conventional radiotherapy that most clinicians are trained on, so they can draw on their years of experience," said Dr. Presilla.

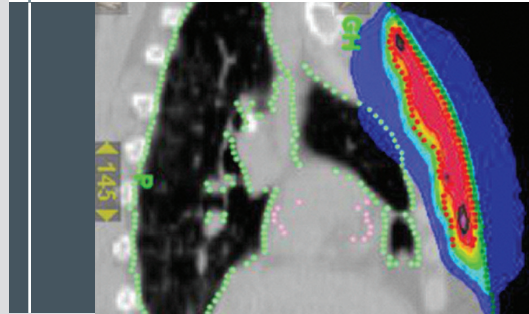
The combination of *TomoDirect* and *TomoHelical* gives the clinic greater flexibility to treat different disease sites efficiently. "We are able to treat 90% of our patients in less than 15 minutes, from the time they enter the room until the time they leave, with no compromise on quality," he said.

TomoDirect Cases In First 6 Months

6	Breast left
19	Breast right
6	Bone metastases
2	Lung
2	Sternum
1	Femur
1	Knee



COMBINATION THERAPY IDEAL FOR BREAST TREATMENT



While the clinic uses *TomoDirect* to treat many disease sites, they have found it especially effective for treating the breast due to the treatment plan quality and the added benefit of shorter treatment times as compared to *TomoHelical*. According to Dr. Franzetti Pellanda: "In our center, *TomoDirect* has become the standard technique for the irradiation of the right breast. We are treating all the right breast cases with two tangential fields, plus a third one. Using this approach, we can really spare the contralateral breast, the heart and the lung."

Referencing the dose-volume histogram above, Dr. Pellanda said, "The dose-volume histogram for the primary target volume is well covered using *TomoDirect*. Then, we combine it with a boost applied to the lumpectomy bed using *TomoHelical*, because we can get good conformality of dose to the target. When an organ at risk (OAR) is near the target, we irradiate with the *TomoDirect* delivery, because we can keep the dose to the OAR to almost zero. This combination of two delivery modes gives us more freedom and represents a new treatment option for very highly conformal radiotherapy."

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Dr. Franzetti Pellanda
Clinica Luganese,
Lugano, Switzerland



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