The department has 4 main missions:
1) Perioperative medicine
2) Treatment of chronic pain and supportive care in cancer patients
3) Palliative care and terminal support in the hospice and in-home care for patients with advanced cancer after failure of aggressive treatments
4) Safety in the hospital.

The Department has a key position in the hospital, and is involved in medical and surgical treatment of cancer patients involving very close collaboration with surgeons, medical oncologists, radiologists, and pediatricians for many different interventional treatments. A noteworthy innovation was the establishment of the Master Course (Master Universitario di II° livello) of the University of Milan in Palliative Medicine, one of the first of its kind in Italy, mainly held by our specialists in palliative care, in collaboration with several other clinicians from the Institute. The provision of palliative care and supportive treatments to cancer patients in now recognized as a defining characteristic of a comprehensive cancer center.
CLINICAL ANESTHESIA

INT runs a very intense surgical program, and our Anesthesia Team participates in demanding surgical procedures such as liver transplantation, major liver resection, peritoneectomy-HIPEC, and resection of tumors in the thorax and retroperitoneum. The hospital is also a referral center for solid tumors in pediatric patients, and anesthesiologists are involved not only in the operating room, but also in practical techniques such as long-term central venous catheter placement and administration of anesthesia for diagnostics and radiotherapy.

In 2012, we maintained our intensive schedule of surgical activity with 73 hours/day, more than 100% utilization of planned time, and an overall 2.5% increase in available operating time. Our quality improvement programs were focused on patient safety (the checklist and TIME-OUT procedure) and in the management of acute, postoperative pain. Patient-controlled analgesia is provided for about 40-50% of patients undergoing major surgery: epidural analgesia with elastomer pumps in 20-25% of cases, and continuous intravenous opioid infusion by an elastomeric pump in the remaining 30-40%. The pain team (an MD and a specialized nurse) visits patients daily for 3-4 days after surgery and tailors treatment as necessary.

Our training program for residents in the Anesthesia and Intensive Care Program at the University of Milan is well established and allows 5-7 young doctors per year to specialize in clinical anesthesia and acute postoperative pain therapy. The acute pain team and the central venous catheter project, both founded by the 5‰ contributions to the I, are still ongoing. Two further research projects on the possible opioid sparing effects of ketamine and methadone and on postoperative residual curarization, led by Dr. Tognoli and Dr. Piccioni, respectively, completed the recruitment and the first results are being published.

A research project on prevention of surgical site infection in breast cancer surgery has been set up and will start enrolling patients in 2013.

Keywords: anesthesia, postoperative pain treatment

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The 6-bed Intensive Care Unit (ICU) of the INT mainly functions as a surgical ICU and post-anesthesia care unit, but it also occasionally treats patients admitted from other medical wards for complications during chemotherapy. Monitoring and surveillance of high-risk surgical patients and intensive treatment of patients with life-threatening postoperative complications and/or organ failure of different origins is the mission of the Intensive Care Unit (ICU). In 2012, 554 patients were admitted (80% after scheduled surgery), for a total of 1467 treatment days. Respiratory support, renal replacement, and “plasma-absorption-perfusion” as treatment for the failing liver are available treatment options. Physicians from the ICU also serve as anesthesiologists in the day-surgery OR. Counseling for critically-ill patients in other wards, emergency interventions for life threatening complications as well as point of care laboratory analyses are granted round the clock.

The ICU staff physicians and nurses are in charge of non medical emergencies in the Hospital. The ICU is part of the hospital-venous catheter service, offering various options from percutaneous inserted central catheter (PICC), percutaneous central catheters, totally or partially implanted long-term central venous catheters.

After enrolling patients with severe sepsis or septic shock in the collaborative study protocol on albumin as volume replacement in sepsis (ALBIOS), in 2012 the project was completed and results will be published next year. Since 2008, our unit is part of the GiViTI network, part of PROSAFE, a collaborative project aimed to improve the quality of intensive care medicine.

Keywords: monitoring, emergency procedures, surgical day hospital
PALLIATIVE CARE, PAIN THERAPY, AND REHABILITATION

The mission of the Palliative Care, Pain Therapy, and Rehabilitation Unit is to address the needs of patients in all stages of disease with the aim of improving quality of life, and provide a system of care and fully integrated support for the overall program of cancer diagnosis, therapy and research. Rehabilitative interventions address or reduce acute and chronic complications after cancer surgery, radiation-therapy, and medical treatments as well as manage complications in advanced cases. The Unit has a fully dedicated lymphedema clinic that is open 5 days a week, is linked with the palliative care team service in the hospice, and organizes home care programs.

In 2012, the following results are indicative of the volume of our clinical activity: 199 hospice admissions, 822 palliative care day-hospital admissions, 16,135 palliative care outpatients visits, 15,232 rehabilitation outpatients visits, 13,188 inpatients consults, and 150 home care (hospital at home) admissions.

The Unit continued the research program “European Palliative Care Research Center” (PRC), founded as a collaboration between our unit and the Cancer Department at the University of Science and Technology in Trondheim (Norway).

Other ongoing research projects are:

- European Palliative Cancer Care Symptom Study (EPCCS)
- Cancer pain guidelines update in collaboration with the European Association for Palliative Care
- Opioid pharmacogenetic study to identify multiple genetic loci modulating individual pain response to opioids
- A multicenter national trial on cancer pain with 4 different opioids (in collaboration with the Mario Negri Institute)
- National multicenter cluster randomized trial on Liverpool Care Pathway

Keywords: cancer pain, palliative care, rehabilitation

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The Unit (outpatient and day hospital care) pursues clinical, educational, and research objectives aimed at the prevention assessment, treatment, and study of side effects or toxicity resulting from cancer therapy, as well as the cure of emotional, social, and spiritual patient needs through global care of patients starting from diagnosis. Our primary purpose is to support, through integrated and ancillary activity, the work of each specialist and to implement supportive medical therapy for patients during the entire period of their treatment, to ensure their physical well-being, and to improve adherence to treatment protocols in terms of dose-intensity and dosing intervals. Moreover, the Unit provides real-time answers to oncological emergencies by treating patients suffering from iatrogenic toxicity. An additional objective is to give support to family, survivors, and personnel involved in daily care. The treatments we offer are compliant with guidelines of the WHO, MASCC, ESMO, and AIOM. We work in strong collaboration with other INT Units and administer the following therapies: hydration, electrolytes, diuretics, steroids, octreotide, glutathione, transfusions, antivirals, antifungals, antibiotics, analgesics, IV nutrition (not TPN), IV bisphosphonates, iron immunoglobulins, and antiemetics. All patients are regularly assessed for the presence and intensity of physical and psychological symptoms, as well as spiritual and social needs. They have the support of a chaplain and/or social worker and/or psychologist during the infusion of medications. The clinical activity in 2012 included: 4505 visits; 575 in the day hospital; 3122 infusions as an outpatient regimen; 679 transfusions; 903 IV bisphosphonates (zoledronic acid). The Unit is involved in national and international research as well as in academic and non-academic educational activities all over the world. The Unit collaborates with WHO, ESMO, MASCC, IAHPc, ISPO (Florence), Consorzio Mario Negri Sud (Chieti), Campus Biomedico (Rome); Istituto Scientifica Romagnolo, and the Universities of Bologna, Modena-Reggio Emilia, and Verona.

Keywords: supportive care for oncological patients, bone health, well-being
Prevention and early treatment of malnutrition are the main goals of the structure. Malnutrition is a well-known negative factor in the final prognosis of cancer patients as it reduces tolerance to oncologic treatment, increases morbidity and mortality, and deteriorates the quality of life. Nutritional intervention should be considered throughout all the different phases of oncologic therapy, from diagnosis and during surgery, to chemotherapy and radiotherapy. In accordance with the recommendations of the European Society of Clinical Nutrition, nutritional screening is undertaken in all patients with a high risk of malnutrition, i.e. patients affected by gastrointestinal cancer, candidates for major surgery, and those affected by head and neck cancer and candidate for combined chemotherapy and radiotherapy. Patients affected by any form of malnutrition are included in a comprehensive nutrition program, which consists of nutritional status monitoring and personalized nutrition therapy mainly with artificial nutrition, both enteral and parenteral, nutritional counseling, and diet therapy. For patients who need prolonged periods of artificial nutrition, specific training is performed by specialized nurses, logistic procedures are organized, and patients are discharged on home artificial nutrition.

In 2012, 455 inpatients were included in a nutrition program and 2233 days of nutrition therapy were administered; 63 patients were discharged on home artificial nutrition.

Keywords: nutritional status, malnutrition, artificial nutrition