NIGUARDA GENERAL HOSPITAL
AND CARE CENTERS
Italy is the healthiest country in the world and it’s in the first place for the quality of life\textsuperscript{1}.

The Italian National Health System is the second best health system in the world for quality, accessibility and cost-effectiveness\textsuperscript{2}, and ranked as the third most efficient globally\textsuperscript{3}.

The Italian primacy in the European classification of hospitals, in 2016 was confirmed the gold seal of quality, awarded by the prestigious International Joint Commission, which certifies adherence to 368 Safety and Quality Standards of Care.

Niguarda is located in the North of Milan, the main city and point of reference in Lombardy and Italy.

The Lombardy health system protects the health of its citizens with a mixed system, based on synergies between public and private sectors and it is focused on quality and efficiency, in order to increase the accessibility of its strong network of hospitals, clinics and pharmacies.

In this system, Milan plays a prominent role, and can be considered the Italian capital of health, with a great concentration of large and small institutions.

Thanks to a careful and strategic partnership among public and private health players and Institutions, Milan is a health center in Italy which boasts a wellknown excellence in the health sector: advanced high tech industry, integration between research and care, university hospitals, developed chemical and pharmaceutical sector make Milan and Lombardy the most important biotech cluster in Italy.

The Lombard territory, symbol of modernity and development, offers a great number of natural, artistic and cultural attractions.
Niguarda consists of a large hospital pole, the heart of the activity, and a rich network of services outside the hospital walls. These two souls together set the mission of Niguarda: to integrate specialised care with territorial health social activities, in synergy with all the actors involved in citizens’ health protection.

Niguarda identity is focused on four core features:

• GENERAL HOSPITAL
Niguarda covers all specialties for adult and child care and manages all diseases with complete and holistic treatments shaped on a multidisciplinary approach.

• TREATMENT OF ACUTE AND COMPLEX PATHOLOGIES
Niguarda hosts and treats patients affected by all clinical and nursing needs, but has a special vocation for the treatment of highly complex pathologies, thanks to its professionals’ multidisciplinay expertise, the management of second and third level emergency medicine, and its specialised centers such as: spinal unit, hyperbaric medicine, burn care unit and anti-poisoning center.

• HEALTH NETWORK FOR CONTINUITY OF CARE
A network with the local outpatient units and a cooperation with external care centers.
Niguarda is committed in the health plan administration of patients who require chronic attention also in a post-hospitalization phase, according to the model of “social - assistance continuity of care”.

• TEACHING AND RESEARCH
A strong commitment in evidence based practice and lifelong learning makes the hospital an international teaching and research center in all clinical and nursing areas.

A LEADING ITALIAN GENERAL HOSPITAL

All medical specialties and technologies, from diagnosis to rehabilitation, are integrated on serving the best care even in situations of emergency or high complexity.
Physicians, scientists, and nurse staff are trained to work together.
ONCOLOGIC SURGERY AREA
The diagnostic activity is over the highest standard and in a continuous development in the treatment of cancer. The patient can rely on a multidisciplinary team which guarantees certain diagnosis, high technologically supported surgical operations and personalized chemotherapy targeted on individual molecular basis. The goal for the oncologic patients is to increase the survival rate and improve the quality of life supported by innovative technologies (mini-invasive approach, magnetic resonance guided focused ultrasound surgery, robotic surgery).

TRANSPLANT AREA
Niguarda is the only centre in Lombardy that has performed transplants of every organ (heart, lung, pancreas, kidney, liver, cornea), and tissues and cells transplants. The hospital hosts a Skin Bank, a laboratory specialized in engineered skin and cartilage for re-constructive operations, able to meet the internal need and to supply other national and international organizations. The use of robotic surgery makes the transplant safer and more efficient for patients and donors.

DIAGNOSTIC AREA
The hospital is equipped with laboratories that provide a wide range of diagnostic-therapeutic services, as an effective support to the clinical activity. The labs, national centres for the diagnosis and treatment of specific pathologies, are developed by highly specialized technologies.

CARDIOTHORACIC & VASCULAR AREA
Built on the heritage of one of the first Italian Cardiothoracic surgery centers, this department provides all medical interventional and surgical procedures for patients with any kind of disease at any age (e.g. from newborn and pediatric cardiac surgery, including pediatric transplantation, transcatheter aortic valve implants). Multidisciplinary team case discussion, highly specialized cardiac and anaesthesiology intensive care staff, intermediate facilities, active outpatient and tele-cardiology services, provide the full spectrum of care in both the emergency and long-term care settings. Niguarda is the national Center for heart transplantation and assist device for advanced heart failure, complex arrhythmias, acute and chronic coronary artery disease.

NIGUARDA ALSO HOSTS:

• Burn Care Unit
• Tissue Bank
• Anti-Poisoning Center
• Stroke Unit
• Rare Disease Center
• Mobile Unit for maxi emergency
**EMERGENCY-URGENCY AREA**

Niguarda is able to host patients from the whole metropolitan area of Milan, in very severe conditions, thanks also to a helicopter service.

Its emergency-urgency dedicated services, includes: Coronary Unit and ICU, Stroke Unit, Trauma Team, Centre of Poison Control, Emergency Medicine and Surgery and Burn Unit.

Moreover, the hospital is entrusted at national level for the maxi-emergencies in case of natural disaster and nuclear catastrophe.

**SPECIALIST MEDICINE AREA**

Niguarda offers the widest range of high complexity services of general and specialist medicine.

The hospital is the headquarter of many Regional and National point of reference Centres in allergology, diabetes, nutrition, endocrinology, rheumatology, infectious diseases, pneumology, as well as in pre and post transplantation treatments for heart, lung, liver, kidney-pancreas and pancreatic islet.

It plays an important role in the diagnosis and treatment of more than 120 rare pathologies.

It hosts one of the main psychiatric department of the town.

**NEUROSCIENCE AREA**

The aim of this area is to combine specialist competence and state-of-the-art technologies to guarantee a diagnostic and therapeutic excellence path for the treatment of nervous system diseases.

The center boasts a sound experience in the treatment of medullar lesions, surgery of pharmacoresistant epilepsy and Parkinson’s disease, use of gamma-knife for tumor pathologies and a stroke unit for emergency treatment.

**GENERAL SURGERY AREA**

Thanks to its highly skilled professionals and their technological competences, the hospital is a national and international point of reference for general surgery, performed with a minimal invasive approach and with robotic surgery. The area is characterised by a multi-disciplinary cooperation, the use of most advanced technology and strong commitment in the development of training activity.

**MOTHER AND CHILD AREA**

The mother and the child are protagonists of a health project that goes beyond prevention, treatment and rehabilitation, that places them at the centre of the research and care activity, from the conception to adulthood. In fact, the service to the family includes a full phases assistance, from the wish of the procreation to the delivery. The child treatment is assured for every type of pathology, even rare, through personalized technologies and routes in the respect of the religious, social and cultural differences.

**ADVANCED TECHNOLOGIES**

Advanced MRI, PET, interventional radiology, linear accelerators, robotic surgery, hybrid OR, gamma knife, focused ultrasound: the constant updating of the technological park is driven by the development of professional skills of high profile.

Diagnostic tests are shared in real time in safe and responsible way through our ICT system.
We want to create places devoted to the promotion of the culture of life and health, where doctors are motivated to improve themselves.

Every day at Niguarda we are committed to meet the health needs of our people.

As providers of the Regional Health Care services, our clinical activity and research must comply with quality standards according to the government criteria, which calls for the provision of appropriate health care without waste, within the economic and financial rules which guarantee the best use of public fund.

The hospital is also strongly oriented to the development of new organization and administrative procedures aimed to improve the quality of its services in terms of efficiency and effectiveness according to the national guidelines planned by the Social Health Care Plan of the Lombardy Region.

Clinical activity

data 2016

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<th>Beds</th>
<th>Day Hospital</th>
<th>Admissions</th>
<th>ER Admissions</th>
<th>Outpatient Dept.</th>
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<td>1,167</td>
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Economic and financial performance

budget 2016

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<th>Admissions</th>
<th>Outpatients Service</th>
<th>Private Income</th>
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<td>180,626,000 €</td>
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<th>Other Health Services</th>
<th>High Cost Drugs</th>
<th>Other Revenues</th>
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<td>25,133,000 €</td>
<td>35,621,000 €</td>
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**TOTAL REVENUES**

520,814,000 €

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<th>HR Costs</th>
<th>Good and Services</th>
<th>Other Costs</th>
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<td>230,061,000 € (more than 4,100 employees)</td>
<td>222,445,000 €</td>
<td>64,308,000 €</td>
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**TOTAL COSTS**

520,814,000 €
// NIGUARDA’S DATA

data 2017

1,173 BEDS

30 BABY CRIBS

20 NEONATAL PATHOLOGY BABY CRIBS

8 INTENSIVE CARE BABY CRIBS

42 OPERATING ROOMS

340 AMBULATORY ROOMS

4,232 TOTAL EMPLOYEES

712 MEDICAL OFFICERS

39 CLINICAL UNIT DIRECTORS

1,967 NURSING STAFF
Niguarda has been organized according to an “Intensity Model Organization”, a healthcare model based on the intensity of care requested by the patient’s needs and the effectiveness of services.

The hospital has been planned on three blocks:

> The Emergency-Urgency (DEA block)
> The South Block for high intensity of care (surgery, oncology-hematology, cardiology and transplantation)
> The North Block for medium intensity of care and medical services.

The hospital structure is designed according to the patient’s need. The process of care is completely realized within one single unit, in order to avoid moving the patient.

**SOCIAL HEALTH CARE**

According to the latest regional address, Niguarda has also acquired local and Social Healthcare competences. This means to work for overcoming the fragmentation of care solutions outside the Hospital and organizing the patient’s management in the globality of his needs; not only in the acute phase (when he is inside the Hospital) but also throughout all the path of his disease (outside the Hospital). This regards particularly chronic patients, who need a long term management.

The advantage of Niguarda’s Social Healthcare Management model is the strengthening of internal relations, among the Departments, and a stronger link with external partners (for example, with general practitioners), in order to make the path of the patient more fluid.

The model of Niguarda is aimed to provide:

> Facilitate Access
> Patient-centered care
> Patient empowerment
> Continuity of care
TECHNOLOGY AND SERVICES

Imaging advanced technologies RMN, PET, interventional radiology, linear accelerators, robotic surgery, gamma knife, focalized ultrasound: the constant update of the technological park is driven by a development of high profile professional competences. Diagnostic tests are shared in real time in liability and safety through our ICT system. The integration between diagnosis and treatment in the different specialties is at the base of rational clinical, an appropriate use of the resources and a better efficiency of the intervention, even with high complexity situations or emergencies.

DA VINCI SURGICAL SYSTEM

With the da Vinci Surgical System, surgeons operate through just a few small incisions. The da Vinci System features a magnified 3D high-definition vision system and tiny wristed instruments that bend and rotate far greater than the human wrist. As a result, it enables surgeons to operate with enhanced vision, precision, dexterity and control. We use da Vinci in urology, cancer and general surgery treatments. The robotic surgery is also applied to the transplantation area.

HYBRID OR

A hybrid OR permits to carry out both the traditional and the radiological guided operational activity. It allows interventions invasively reduced for valves surgery, bypass, installation of aortic endoprothesis and “hybrid” implant devices for cardiac resynchronization. It is the “integrated” room, where the machines are linked together and consent the use of videoconference technologies, intervention field records in HD with the possibility for the operators to use wide touch screens.

GAMMA KNIFE SURGERY

Gamma Knife surgery sometimes referred to as stereotactic radiosurgery (SRS), is a non-invasive method for treating brain disorders. It is the delivery of a single, high dose of irradiation to a small and critically located intra-cranial volume through the intact skull. It is preferred for its extreme accuracy, efficiency and outstanding therapeutic response. System benefits include faster set-up and treatment delivery to one or more tumors in a single session. Perfection allows the treatment of a wider range of targets faster and more efficiently than ever before.

The integration between diagnosis and treatment in 25 the different specialties is at the base of rational clinical, an appropriate use of the resources and a better efficiency of the intervention, even with high complexity situations or emergencies.
The hospital is equipped with more than 40 front offices for booking and check in: the modern “centralized” system for managing the customers flow. It drives patients from the access to the hospital and conducts them through the front office activities, to the call in the outpatient where the doctor is waiting.

Throughout the integration of digital signage systems, algorithms and complex technologies, it is possible to design and customize systems of information facilities and welcome and booking processes managing both with the National Health System and in private area.

PATIENTS HAVE ACCESS TO:

- single-double bed rooms with private bathroom
- foreign patients’ office
- free service of language assistance
- vegetarian menu on demand
- hotels at special price: to relatives
- children’s or over 65’s relatives can stay all day long with the patient
- coffee shops, self-service restaurants
- cash point
- shopping centers
- internal paying car park
In recent years a positive trend in clinical trial has been observed in neuroscience, diabetology, pain therapy, gene therapy, cardiovascular diseases, haematology, oncology, resulting in an improved scientific impact factor.

Niguarda is a public hospital dedicated to care; clinical research and knowledge-sharing are fully integrated in the hospital strategy.

The attitude to a real multidisciplinary approach offered to researcher makes Niguarda as a unique “one stop shop” for research and development.

The presence of advanced professional skills, technological competences, certified laboratories and high complexity patient cohorts make Niguarda a unique and interesting partner for future cooperation. It offers concrete opportunities to Pharma and Biotech Companies that are looking for a reliable and expert clinical/scientific partner.
Combining high qualified scientists, latest technology and the approach to a broad range of cases, Niguarda is very attractive to practitioners eager to perform new techniques and diagnostic therapeutic procedures, in order to acquire new methods and professional skills.

The mission of Teaching Hospital has developed at international level and, in the last 15 years, Niguarda has reached the shores of many parts of the world, carrying out training activities both abroad and within the Hospital Departments, and namely:

- International Cooperation twinning programmes with hospitals
- Concerted actions promoted by single professionals
- Agreements with international institutes on health professionals training
- Private partnerships.

This activity not only has created new resources to reinvest in research and development, but it has also fostered the international scientific progress.

NIGUARDA ACADEMY

In the last years, the mission of Teaching hospital led to the creation of “Niguarda Academy”, a subject focused on training on the job post graduation courses.

By offering highly specialized courses and training on the job carried out in the Hospital Departments, Niguarda Academy offers an extensive program of activities for growth and professional development. Learning programs are based on a strong commitment to the practice with an open dialogue between the new information or recommendations and the daily work.

ADVANCED INTERNATIONAL MINI-INVASIVE SURGERY

AIMS Academy is the first multidisciplinary center in Italy dedicated to research and training in minimally invasive advanced surgery, third pole of European network with Strasbourg and Guildford. The program includes demonstrations of laparoscopic surgery, theory sessions and practice sessions simulations in wet lab.
NIGUARDINA IN THE WORLD

Besides the key role played in the Italian and Lombard healthcare system, and its presence in the international scientific environment, Niguarda Hospital is implementing a cooperation policy with several international institutions.

This strategy is aimed to the promotion of an effective integration and development of synergies in the healthcare and social affairs systems among different countries, according to the Lombardy Region policy.

In the last 10 years, Niguarda has established relations with more than 20 Countries all over the world.

COMPANIES

Niguarda is part of an international network aimed to provide the best medical practices to patients coming from all over the world. Niguarda signed up partnerships and agreements with healthcare providers, health management companies, “travel and health companies”, and health insurances.

This commitment is offering a custom fitted service for health: Niguarda can deliver a tailor made service and coordinate all needs during the stay (facilities, language interpreting service, private treatment, hotel arrangement).

HEALTH COOPERATION

Every year Niguarda hosts patients from other nations affected by pathologies that are incurable in their own countries. Niguarda also plays an active role in international cases of health emergencies.

Niguarda receives hospital board delegations, ministerial officers and authorities, medical and nurse staff, in order to promote knowledge sharing and partnerships.
Niguarda is a relevant structure even from the architectural and artistic point of view. The hospital hosts a series of permanent works of art and itinerant exhibitions, aware of the social and therapeutic role of the art.

NIGUARDA: MASTERPIECE OF ARCHITECTURE
Niguarda is protected by the Ministry of Fine Arts.
In 1940 it has been defined as “the city of art” by the historian Costantini.
Niguarda has been always sensitive to the beauty and to artistic culture and expresses a strong connection with the city of Milan and its history by its monumental and rationalist structure.
Up to its entrance moving through the paths and in the indoor sections, it is possible to admire works of art made by great artists as Arturo Martini, Francesco Messina, Franco Lombardi, Mario Sironi and Aldo Carpi.

MODERN ART
Niguarda hosts MAPP museum (Museo d’Arte Paolo Pini) and art workshops in the area of mental disorders treatment.
Over time it has formed a collection of internationally and wellknown artists, including Enrico Baj, Emilio Tadini, Gunter Brus, Martin Disler.
With new ideas and projects MAPP participates in international fairs of modern art and organizes and supports various initiatives.
Niguarda also hosts temporary exhibitions and installations of contemporary artists and promotes cultural events.
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