



# Massimo Caprino

**Chief Innovation Officer**

Casa Cura Policlinico

<http://www.ccppdezza.it/>

## Bilateral Meetings

- Thursday (1:30pm - 6:00pm)
- Friday (9:00am - 12:00pm)
- Friday (12:00pm - 4:00pm)

### Description

Casa di Cura del Policlinico (CCPP) is a fully integrated multi-specialty private clinical centre aiming at providing both inpatient and outpatient services mainly directed to neurological patients. The Centre is constituted as a Department of Neurorehabilitation Sciences, accredited by the Italian National Health System, and economically supported by Regione Lombardia. CCPP is pushing to offer chronic neurological patients the highest comprehensive standards of care in a comfortable living environment. CCPP will achieve this goal through a patient management approach organized around a core rehabilitation programme. The main objective of our clinical interventions pertains to the rehabilitation of patients with different types of brain-lesions, for instance those lesions due to acute events such as cerebral stroke or traumatic brain injury. Stroke rehabilitation may include some or all of the following activities: strengthening motor skills, mobility training, range of motion therapy, neuropsychological evaluation and cognitive rehabilitation, therapy for language and communication disorders, electrical stimulation, and virtual reality.

Rehabilitation programs also address to subjects requiring high complexity assistance. An increasing number of admissions also concerns chronic patients with neurodegenerative diseases, such as Parkinson's disease or Amyotrophic Lateral Sclerosis. Lastly, some chronic paediatric neurological patients may attend the Centre, as an 8-bed day hospital facility and outpatient clinic that were recently been dedicated to Infantile Cerebral Palsy (ICP). In 2014 hospitalized cases (inpatient and patients in Day Hospital) were 1.045 subjects for a total of 46.053 days of stay. 27% of hospitalizations and outpatient are represented by population aged between 65 and 75 years old, mainly affected by nervous system diseases and disorders (75% case rate), of which 66% are suffering for degenerative diseases of the nervous system. Numerous are also subjects affected by musculoskeletal and connective system diseases and disorders (14%). Besides, the 53.40% of hospitalizations and outpatient are represented by over 75 years old patients, affected by nervous system diseases and disorders for a 65% case rate, of which 79% are suffering for degenerative diseases of the nervous system. Highly representative of this elderly population are also musculoskeletal and connective system diseases and disorders (20%).

### Organization Type

Other,

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Country

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City

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Offer

## **Neuro-rehabilitation Living Lab**

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CCP could provide conditions and facilities where clinical investigations of innovative medical devices could be performed, in terms of equipment, wide spaces, and laboratories, according to the rules of our Ethical Committee. The pilot could be guested in the Neurorehabilitation Sciences Department, where patients are rehabilitated with high intensity rehabilitation programmes for a period between 2 and 6 months.

In the basement of this structure are located equipment and spaces dedicated to the rehabilitation activities:

- rehabilitation Technogym
- house environment simulation
- occupational Therapy laboratory, including a complete housing setting
- motion devices, including exergames

Within this infrastructure is set up a Living Lab integrated, with rehab activities and gyms, that can be used for clinical validation of the new devices/therapies. Validation use cases can be extended also to the home activities that represent an extension of actual services, in a logic of continuity of care. Moreover, the Centre refers to internal Radiology and Laboratory services for biological analysis, if needed.

### **SOLUTION OR EXPERTISE SOUGHT**

Different and various are the actual research activities, which constitute interesting backgrounds for studies dealing with:

- impact of specific cognitive disabilities (i.e. aphasia, executive function deficits, neglect, and memory loss) on the motor and functional short term and long-term recovery of post-acute stroke patients
- brain and cognitive dynamics of multiple- object processing in normal aging, MCI, Alzheimer and Parkinson disease
- virtual reality in the rehabilitation of physical and cognitive impairment
- Ambient Assisted Living solutions based on IoT platforms

### **TYPE OF PARTNER SOUGHT**

Innovative SMEs willing to perform a multicentre clinical trial, in order to show scientific evidences of their solutions.

Facilities to access to the Italian market could be provided, depending from a specific exploitation plan, to be drafted taking in care the relationship facilities that CCP could provide, through the access to the national Life Science Cluster, including other research hospitals, big companies and investors.

#### **Cooperation Offered**

1. Technical co-operation
2. Sales / Distribution

#### **Offer**

### **Neurological Biobank**

CCP is active in the study of neurodegeneration with the absolute need to identify the biological markers (biomarkers) for the neurological diseases treated into the clinic. The main objective of our clinical interventions pertains to the rehabilitation of patients with different types of brain-lesions, for instance those lesions due to acute events such as cerebral stroke or traumatic brain injury. An increasing number of admissions also concerns chronic patients with neurodegenerative diseases, such as Alzheimer and Parkinson's disease or Amyotrophic Lateral Sclerosis. In light of the foregoing and its mission of translational and clinical research, CCP is collecting biological samples from neurological patients who belong to the structure, working as a partner with the Biobank Interinstitutional multidisciplinary (BioBIM). CCP believes that its membership in a cluster of BioBanks is a choice in line with the efforts of the international scientific community aiming at identifying the genetic and biochemical markers of neurological diseases. With this regard, it can thus provide a further significant contribution to medical research in the interest of its own assisted and, by far, of all the patients suffering from neurological disorders.

#### **ADVANTAGES**

The Innovative aspects we can express are the following:

- Promote basic scientific research for the detection of etiopathogenetic mechanisms related to specific diseases;
- Promote the collection of samples belonging to individuals / populations with peculiar characteristics for which it can be assumed a particular genetic predisposition or susceptibility to environmental factors to a greater risk to certain diseases;
- Make available for clinical pharmacology (pharmacogenetics to farmacoproteomica) samples for the study of nucleotide and amino acid sequence variants associated with different responses to drug therapy;
- Provide an adequate number of biological samples for studies of functional proteomics and / or metabolomics, permitting the opening of new areas of translational research including one called "biomarker discovery", to identify new predictive biomarkers, diagnostic and / or prognostic, potentially transferable in the clinical field, not only in the field of laboratory diagnostics, but also for innovative treatments such as the "targeted therapy";
- Offer a service to biomedical research for the development of research lines intra and inter-institutional national and international;
- Allow participation in the development of the biobank in peripheral structures that do not have the infrastructures

#### **MARKET APPLICATION**

Among the scenarios with high clinical impact in which the biomarker would be particularly useful in characterizing the expression of disease, we focus on early diagnosis and / or pre-symptomatic, to follow the progression of the disease and to determine the prognosis.

CCP could also provide conditions and facilities where clinical trials of new drugs could be performed, according to the rules recorded in the National Observatory on the Drugs Clinical Trials, managed by AIFA (Italian Agency on Pharmaceuticals), in the field of neurology, lung domain, physical medicine and rehabilitation.

#### **TYPE OF PARTNER SOUGHT**

- Universities and Research Centres aiming to design & test novel more personalized interventions & patient-centred therapies.
- Clinical centres networking to extend cohorts in neurological diseases and integrating their own biobanks.
- Pharmaceutical Companies that want to test pharmaceutical molecules on human samples from our biobank. We can provide peripheral tissues such as blood cells, genetic profiles, fibroblasts from clinical characterized patients.
- ICT Companies looking for multi-scale computer modelling based on big data concept for disease detection and treatment in the neurological domain

#### **Cooperation Offered**

1. Technical co-operation