National Institute for Infectious Diseases Lazzaro Spallanzani
Public Institute

History
The National Institute for Infectious Diseases (INMI) "Lazzaro Spallanzani" is an historical public institution operating since 1936 in the field of infectious diseases. In 1996, it was officially appointed also as research institute for infectious diseases. In 2009, a transplant center was opened at INMI, for the first time in Italy inside an institute for infectious disease. INMI is the Italian centre par excellence for the care and basic, translational research in patients affected by infectious diseases. The mission of INMI is to provide high-quality clinical care for patients with infectious diseases with a special interest in HIV/AIDS, tuberculosis, viral hepatitis, severe infections, emerging/re-emerging infections and infections in the immunocompromised host; to assist in the development of a global response in Italy and abroad to emerging/re-emerging diseases, including both highly contagious, naturally occurring and deliberately released, microorganisms; and to help integration among clinical, epidemiological and pre-clinical research with the aim of enhancing the diagnosis, care and prevention of infectious diseases.

The Institute is provided with epidemiologic, diagnostic, patient care and research facilities, all placed in a large campus, located in the central area of the city. INMI covers an area of more than 130,000 square meters with 15 buildings.

The mission
The mission of the institute is:

- to provide state of the art clinical care for patients with infectious diseases with special interest in HIV, viral hepatitis, tuberculosis, emerging/re-emerging infections and infections in the immunocompromised and transplanted host;
- to assist in the development of a global response to emerging/re-emerging diseases, including both highly contagious naturally occurring and deliberately released microorganisms;
- to promote integration among clinical, epidemiological and pre-clinical research with the aim of enhancing the diagnosis, care and prevention of infectious diseases.

Health care facilities
The medical center is provided with 200 beds for acute infectious diseases, located in rooms with 1 or 2 beds and the possibility of positive pressure for immunocompromised patients, or negative pressure in case of airborne infections. Clinical care facility is designed in order to comply with high isolation measures and personnel is specifically trained to work with patients with highly contagious and dangerous diseases. All rooms are provided with 12 air changes per hour with HEPA filters for entering and exhausting air. High isolation rooms are available in the clinical center for hemorrhagic fever cases.
Bio-containment facilities
Currently, there are separate 4 BSL-3 facilities for routine diagnostics, laboratory research, clinical sample preparation, and autopsies. One BSL-3 laboratory is associated to a biobanking facility, where a large collection of samples from patients with infectious diseases, viral hepatitis, virus strains and cell lines is maintained for long term storage in viable conditions. One of the BSL-3 facilities is juxtaposed to the high isolation rooms devoted to the care of smallpox or viral hemorrhagic fever to minimize sample transportation problems. In a separate building, a small BSL-4 laboratory is located, based on cabinet line, that is currently used for both diagnostic and research purpose.
A new building is dedicated to highly infectious and pathogenic diseases. It contains 10 high containment rooms for patient care, each with independent ambulance access, and maximum containment laboratory facility, including BSL-3 and BSL-4, and rooms for personnel and assistance. The new facility is the concrete and ultimate result of the basic INMI philosophy, that is to hold in a strict connection, i.e. in physical proximity, both patient care and laboratory facilities, to have concentrated in one single institution all professional expertise and structures required to complete the cycle of medical assistance to patients with highly infectious diseases. The basic structure of new building is at moment completed, and we are in the phase of setting up technical equipment.

The Organization

Department of Epidemiology, advanced Diagnostic and pre-clinical research
- Emerging and Reemerging Infectious Diseases Epidemiology
- AIDS epidemiology referral centre
- Clinical Epidemiology Virology
- Microbiology
- Bio-bank
- Cellular Immunology
- Cellular Biology and Electron Microscopy
- Experimental Hepatology and Gene expression
- Translational Research
- Monitoring of Antiretroviral Therapy
- Morbid Anatomy
- High Bio-Containment laboratories

Department of Clinical Research
- Infections of the Immunocompromised Host
- HIV/AIDS, HIV associated cancer and neuropathology
- Tropical diseases, highly infectious disease and High Level Isolation Unit
- Respiratory Tract Infections
- Post Acute Care and hospice
- Diagnostic Imaging

Inter-institutional Department for Solid Organ Transplants
- Infectious diseases of the liver/Hepatology
- Intensive Care

Research Activities
INMI research agenda is focused on blood-borne pathogens, TB and emerging infectious diseases, HIV/AIDS and viral hepatitis for basic, pathogenetic, diagnostic, epidemiologic, care/treatment and prevention purposes. The available equipment allows to perform full range of genomic, transcriptomic and proteomic analysis, in addition to classical imaging, cultural and
immunological studies. The availability of high containment laboratories allows to perform research activity on high threat pathogens.

INMI’s official appointments
- INMI has been identified by the Italian Ministry of Health as the national referral centre for infectious disease emergencies and bioterrorism-related pathogens, and is currently engaged in facing, and helping to respond to, these health threats, whether naturally occurring, newly emergent, or deliberately released.
- INMI was appointed by the Italian Center for Disease Control (CCM) as responsible of the “Plan for Diagnosis, Care and Epidemiological Support to Biological Emergency in Italy”.
- INMI is, since 2003, active member of the Global Outbreak Alert and Response Network coordinated by the World Health Organization (WHO).
- INMI is, since 2006, one of Institution belonging to the Emerging and Dangerous Pathogens Laboratory Network coordinated with GOARN at WHO for laboratory readiness and response.
- INMI is, since 2009, WHO Collaborating Centre for clinical care, diagnosis, response and training on Highly Infectious Diseases.
- INMI is, since 2011, one of the Research Infrastructure of Pan-European Interest identified by European Commission in the framework of European Strategy Forum on Research Infrastructures (ESFRI) for the European Research Infrastructure on Highly Pathogenic Agents.
- INMI has been identified by the Italian Ministry of Health in 2016 as Poliovirus Essential Facility (PEF).

Publications
Yearly about 150 major papers (indexed by Index Medicus for a total Impact Factor of about 900)

International cooperation
INMI has been involved in several missions of international cooperation building up diagnostic capabilities in the field of the Infectious Diseases in ex-Yugoslavia, Egypt, Albania, Libya, Romania, India. Since 2006 is active in Tanzania with a large project on HIV, TB and emerging pathogens. During the 2014-2016 Ebola outbreak provider technical support and deployed mobile laboratories in Guinea Conakry, Sierra Leone, Nigeria, Liberia.

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