The main aim of the Public Health Department is to understand which factors affect the health of individuals or entire populations and to define effective interventions for responding to their health needs. Special emphasis is therefore placed on prevention, so that the risks of contracting illness are lowered, and on the dissemination of independent, evidence-based information.

The department's effort cannot disregard the National Health System, however, which must guarantee access to, and quality of, care that is based on principles of equity and appropriateness and must guarantee it especially to the more vulnerable patient groups. It is in this context that the Public Health Department carries out its activities.

In addition to its formal research activity, the department participates in, and organises, initiatives involving information dissemination, training, and debate aimed at healthcare professionals and social care workers, but also at the general population. These activities are also supported by the publication of the department's two journals: Ricerca&Pratica and Quaderni di Farmaco Economia, and by the development of the @Partecipasalute website (www.partecipasalute.it).

**MAIN RESULTS (2016)**

A multicentre clinical trial performed in 15 paediatric emergency departments documented that ondansetron was more effective than domperidone, a commonly used anti-emetic, in the treatment of gastroenteritis not controlled by oral rehydration alone, with a decrease in vomiting episodes and in the need of intravenous hydration. A relevant result, supporting a more rational drug use for a disease frequently associated with hospitalization.

The GiViTi, one of the first and wider network of intensive care units, proved to be a strategic tool for rapid reporting of emerging or increasing serious disease problems, as observed during the H1N1 pandemic. It can represent an observatory for monitoring emergent epidemics that can contribute to the prompt activation of public health interventions in the safeguard of the national and international community.

The understanding of health information by citizens increases if they are involved in the production and dissemination processes, both for formal aspects and
SELECTED PUBLICATIONS (2016)


Active participation by citizens proved to be effective, for example, in achieving the aims of prostatic cancer screening.
Research, as a multidimensional approach to producing knowledge, characterises the laboratory's activity. Research provides the basis for planning and carrying out the laboratory's activity in a critical way and involves the participation of health professionals, social workers, mothers, children, and parents. Special attention is given to activities involving countries in the north and south of the world.

The main objective of the Laboratory for Mother and Child Health is to ensure a better mother and child well-being by undertaking interdisciplinary and collaborative work in the field. Four broad areas, or spheres, of research have been selected:

- monitoring and epidemiological evaluation of utilisation and effects of drugs and vaccines;
- research methodology in general hospital and paediatric community practice;
- public health determinants of children’s well-being;
- transfer of health information to the community.

Each initiative is aimed at developing greater equity and appropriateness of care. In addition to the formal research activities, the Laboratory promotes initiatives in the public health field, in particular those involving mother and child health care. The initiatives involve the participation in, and the organization of, educational, training, and information-dissemination activities. The critical and active transfer of scientific knowledge is a continuous, daily stimulus to the laboratory’s activity.

**MAIN RESULTS (2016)**

FP7 PROJECTS
1) TINN: Treat Infections in Neonates involves various European countries and aims to produce evidence on the safety and efficacy of ciprofloxacin and fluconazole in the treatment of severe neonatal infections. The project began in 2008 and has, as one of its goals, the obtainment of a Paediatric Use Marketing Authorization (PUMA).

2) TINN2: The project began in January 2011 and its main aim was to study the safety and efficacy of azithromycin in preventing the development of bronchopulmonary dysplasia (BPD) in premature neonates following colonisation with Ureaplasma. Pharmacoeconomics in the Lombardy Region: the Laboratory for Mother and
Child Health is involved in the analysis of the drug prescription profile in children and adolescents in the EPIFARM (Epidemiologia del farmaco) project funded by the Lombardy Region.

The Lombardy Region's ADHD Register: the Lombardy Region's ADHD Register was launched in June 2011 within the project called "Sharing diagnostic-therapeutic approaches for ADHD in Lombardy" with the funding of the Lombardy Region. The project includes training initiatives for health care workers who provide assistance to ADHD patients and their families, initiatives to increase information on ADHD, and a regional register of the ADHD cases.

Children and adolescent with neuropsychiatric disorders, Outcomes evaluation in clinical practice: the project stems from a request made to the Child Neuropsychiatric and Disability Nursing Home Center - Villa Santa Maria Institute of Como by the Laboratory for Mother and Child Health and is aimed at investigating and describing the care modalities to provide and maintain appropriate care quality levels through a naturalistic outcome study in a routine clinical setting and through the use of standardized tools.

EPINEUROPSI: Epidemiology of neuropsychiatric disorders in children and the development of a web based information system. The project is funded by the Lombardy Region and is aimed at spreading electronic health records for CAMS.

The activities of the Italian NGO Group for the CRC: the Laboratory is part of the Working Group for the "Convention on the Rights of the Child" (CRC) in Italy.

Co-operation with countries with limited resources: the Laboratory promoted and provided assistance to projects in the South of the world, in collaboration with Non-Governmental Organizations (NGOs) and the World Health Organization.

Lo sai Mamma The laboratory, along with the Associazione Culturale Pediatri (Pediatricians’ Cultural Association) and the Federfarma Lombarda participates in the initiative “Lo sai mamma?” (“Mom, did you know?”). The initiative is aimed at providing mothers with information on their children’s health through the creation of informational pamphlets distributed in pharmacies throughout the Lombardy Region.

Ricerca & Pratica, published by Il Pensiero Scientifico Editore, represents an independent observation point. It also promotes contemplation, evaluation, and information by applying tools such as data trustworthiness and importance, the balance between benefits and risks and between benefits and costs and independence from conflicts of interest. The objective is to contribute to a progressive improvement in the population’s health.

SELECTED PUBLICATIONS (2016)


RESEARCH ACTIVITIES

The general aim of the Laboratory of Clinical Epidemiology is to contribute to the improvement of health care in different medical fields. The guiding principles are mainly two:

• to help physicians in using the available knowledge and resources at their best;
• to contribute to the growth of applied knowledge for clinical practice.

The Laboratory operates in the field of Intensive Care Medicine. In the main area of activity the laboratory coordinates one of the first and largest groups of collaborative research in the world, the GiViTi (Italian Group for the Evaluation of Interventions in ICU).

Within the Laboratory, the Unit of Clinical Knowledge Engineering aims to bring the value of clinical reasoning out, through the implementation of probabilistic models for its formalization, thus favouring the evaluation and the continuous improvement of complex clinical activities. The goal of Unit of Information Science for Clinical Knowledge Sharing is to identify or build state-of-the-art informatics technologies to support clinical information and knowledge management at all stages, from data collection to redistribution of new knowledge, manually or automatically obtained. The Unit’s main activities aim at studying and providing tools that allow:

• multicentre data collection, with daily synchronization;
• storage, update and preservation of collected data;
• knowledge representation, both structured and semi-structured, in ways suitable for practical, analytical and research use;
• automated knowledge extraction from acquired data;
• knowledge mapping between different syntaxes and semantics, for the reuse and integration of different contexts;
• sharing of acquired knowledge.

MAIN RESULTS (2016)

Quality of care in the Intensive Care Units: the main purpose of these research projects is the assessment and improvement of the quality of care in Italian Intensive Care Units (ICUs). It is a multi-annual project promoted on behalf of GiViTi, a collaborative network composed by more than half of the Italian ICUs and coordinated by the Laboratory. The main focus is the Project Margherita. Its aim is the continuous...
evaluation of the quality of care and it is based on a free software developed by the Laboratory and distributed to all the ICUs adhering to the GiViTI group.

**Appropriateness of the Intensive Care Units:** ICU is a high technology environment, that requires a high number of high-level personnel. Hence, the cost of these units is extremely important and a special attention not to waste resources is mandatory. In this field, the Laboratory launched a study to assess the level of appropriateness of the use of ICU beds, in some Italian regions. Such an evaluation is based on the understanding that the level of care provided by an ICU should correspond to the level of care it can theoretically provide, given the available resources.

**The reconstruction of clinical reasoning in the medical practice and education:** this area represents the main concern of the Unit of Clinical Knowledge Engineering. The diagnosis of pulmonary embolism still represents a relevant clinical challenge, due to the complexity of the patient’s clinical presentation and the variability of diagnostic resources among Centres. In this regards, we are conducting an Italian multicenter study, involving mainly Emergency Units, with the aim of prospectively validating the diagnostic software BayPAD (Bayes Pulmonary embolism Assisted Diagnosis). Such a tool, relying on a probabilistic model covering 72 clinical variables and doing without the need to input all the contemplated observations, would overcome the main reasons which prevented ordinary clinical guidelines to be largely accepted. Moreover, the results of the retrospective validation of the system have been obtained.

**An electronic health record to promote research in Intensive Care Medicine:** the main aim of this project is the continued development of an electronic health record (EHR) that allows the assessment of indicators of the process of care in the ICU. A multidisciplinary team of intensivists, ICU nurses, epidemiologists, statisticians, and IT specialists, had the responsibility of planning the EHR, that is now already shared by 30 Italian ICUs. This made it possible to launch the first analysis of the process that is aimed at improving of the practice of weaning from the ventilator.

**Assessment of Liver Transplantation in Italy:** the ALT (Assessment of Liver Transplantation) Project expected to create a software (powered by PROSAFE) for collecting clinical data on patients admitted to liver transplantation centers. The aims of this study are:
- design database for collecting clinical data on patients in liver transplantation waiting list and build statistical analysis system to process data;
- to permit a continuos evaluation of performance in liver transplantation centers enrolled in the project;
- to evaluate, analyze and compare clinical data to contribute epidemiological enrichment.

**AbioKin - Antibiotics pharmacokinetics in critically ill patients** AbioKin is a multicenter prospective observational study aiming at studying the pharmacokinetics properties of some of the most used antimicrobial drugs in Intensive Care Units (ICUs). In the first phase of the project plasma samples will be withdrawn from critically ill patients undergoing antibiotic therapy with at least one of the investigated molecules. In the second phase we shall developed pharmacokinetics models describing the evolution of the plasma concentrations. The third phase consists in the realization of a simulator to be integrated in MargheritaTre. This tool will allow to compute and predict the plasma concentrations of antimicrobial drugs as a function of patients’ conditions.

**SELECTED PUBLICATIONS (2016)**


RESEARCH ACTIVITIES

The Laboratory promotes different research activities aimed to developing the participation of citizens and patients and their representatives to the decisions process regarding health.

For a broad and affective involvement, the Laboratory has also realized an ad hoc training program and information for the citizens associations representatives and patients to allow them to understand the medical and scientific issues. Ten sessions have been held so far with different partners, also public organizations.

The Laboratory lines of research are: projects for the evaluation of the type of information provided on diseases and treatments; research on the best ways of spreading information regarding health and on the results of scientific research; development of websites on health and information, as www.partecipasalute.it, www.fondazionemattioli.it, http://indeep.istituto-besta.it/, development of decision-making tools. Finally, part of the activities of the Laboratory are projects relating to evaluating the quality of life and health, through ad hoc studies of selected groups of patients, and through the development of questionnaires.

MAIN RESULTS (2016)

Development and evaluation of decision-making tool about mammographic screening: “Donna Informata-mammografia”: The aim of the project, supported by a grant of AIRC is to develop a decision-aid for women invited for the first time to participate to breast cancer screening. This tool, that it will be available by web, will be tested in a randomized controlled trial in three screening centers.

The IN DEEP project: diagnostic tests for people with multiple sclerosis: on the basis of experience of “IN DEEP -Integrating and Deriving Evidence, Experience, Preference” that tested an online information model for people with multiple sclerosis, the Associazione Italiana Sclerosi Multipla AISM decided to support a similar project on magnetic resonance. The project is coordinated by Fondazione IRCCS Istituto Neurologico Carlo Besta, in collaboration with the Laboratory. The aim of this project is to give, in agreement with people with multiple sclerosis, a informative model about magnetic resonance used as diagnostic and prognostic test.

Corbel Project: in the framework of the European project CORBEL Coordinated Research Infrastructures Building Enduring Life-Science Service, the working group WP7
“Common Services Providing Support with Ethical, Legal and Societal Issues” aims to develop a document that defines structure and content of the informed consent form to use in clinical trials.

Project Foresight 2020 AIDS: discussion with the associations about a shared document of priorities to treat and to manage the HIV infection in Italy; the aim of this project, funded and promoted in collaboration with the Fondazione Smith Kline, was to define a set of priorities for healthcare services, prevention, information and research for the next five years in Italy, with the collaboration of citizens and patients’ associations dealing with HIV and AIDS.

Project “Italian Register of Multiple Sclerosis”: the project is promoted by the Unit of Research set up by Fondazione Italiana Sclerosi Multipla FISM Onlus and by Università degli Studi Aldo Moro di Bari Dipartimento Scienze Mediche di Base, Neuroscienze ed Organi di Senso. The purposes of these data collection are epidemiological, public health and research to improve knowledge about disease causes and treatments.

PartecipaSalute: a strategic alliance between patient groups, citizens and scientific medical communities: this project, develop in collaboration with Italian Cochrane Center and Zadig, began in 2003 to direct patient associations and citizens to increase participation and discussion on health care issues and choices in medicine. The project and the www.partecipasalute.it website is an important reference point for citizens involvement on health activities debate.

Gynecological cancers and Mattioli Foundation: since 1995, the Nerina and Mario Mattioli Foundation Onlus, in close collaboration with the Department of Oncology of “IRCCS Istituto Mario Negri”, has helped to develop and catalyze interdisciplinary cooperation and facilitate the rapid transfer of knowledge between laboratory and clinic.

Slow Medicine: “Doing more isn’t doing better”: Slow Medicine is supporting the project “Doing more isn’t doing better” to promote medicine that advises only evidence-based treatments reducing the risks of exposure of citizens to either over-diagnosis and over-treatments, also taking in account the economical aspects. “PartecipaSalute during this past year, in collaboration with “Altroconsumo”, carried out the online survey “Eserci, farmaci e prescrizioni: dite la vostra!”.

Quality of life projects: as the previous year, the activity of support and coordination of groups that use quality tools we translated and validated continued. The questionnaires SF-36, SF-12, PGWBI are available on http://crc.marionegri.it/qol site.

SELECTED PUBLICATIONS (2016)


RESEARCH ACTIVITIES

The “Angelo e Angela Valenti” Centre for Health Economics (CESAV) was established in 1992 at the “M. Negri Institute” and based at Villa Carnozzi - Ranica (Bergamo) - Italy. CESAV is primarily a research centre, but also does educational work. The centre is involved in health economics and health policy research. The main areas of research are: Economic Evaluation of Health Care Programs (i.e. assessment of costs and benefits of alternative health care treatments and services) and Comparative Health Policy Analysis (i.e. study of domestic and foreign health care systems, in particular aimed at identifying possible innovations for European countries).

MAIN RESULTS (2016)

Educational activities Educational activities are developed only if related to research studies, in order to offer original contributions which naturally reinforce the research aims.

Economic Evaluation of Health Care Programmes The aim of this research area is to assess the costs of pathologies and the cost-effectiveness ratios of the diagnostic/therapeutic existing alternatives. In general, analyses can be classified into two groups: partial economic evaluations (e.g. cost of illness analysis) and full economic evaluations (e.g. cost-effectiveness analyses).

Comparative Health Policy Analysis The aim of this research area is to study the organization of health care systems, in order to draw lessons from international comparisons. This is particularly important in a “market” like health care where economic competition lacks by definition and therefore public regulation plays a crucial role.

Quaderni di FarmacoEconomia QdF is a quarterly journal of pharmacoconomics published by CESAV. It is designed as a tool to favour a critical approach to the economic aspects of the pharmaceutical sector among NHS professionals, with particular reference to economic evaluations and drug policies at the national and international levels. It was first published in 2006 with the aim to keep the “voice” of independent research alive and to improve the critical skills of Italy’s health workers. The editors of QdF believe in the importance of offering the chance to receive updates and critical inputs on pharmacoeconomy to health system
operators without a strong background on the subject. The ultimate goal is a context in which those working in this field won’t have the illusion of finding a “magic solution” and won’t accept for gold everything that is published. There is a critical risk, however, of disappointment in the long run and a loss of credibility in the pharmacoeconomy field. This magazine represents an opportunity to read the more debated economic and drug policy issues with a critical mind and adequate tools.

SELECTED PUBLICATIONS (2016)


Garattini L, Curto A. Performance-based agreement in Italy: “Trendy outcomes” or mere illusions? Pharmacoeconomics 2016; 34: 967-969

Garattini L, Curto A, Freemantle N. Pharmaceutical price schemes in Europe: time for a continental one? Pharmacoeconomics 2016; 34: 423-426