

INFOBIOMED



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BIOMEDICAL INFORMATICS
TO SUPPORT INDIVIDUALISED HEALTHCARE

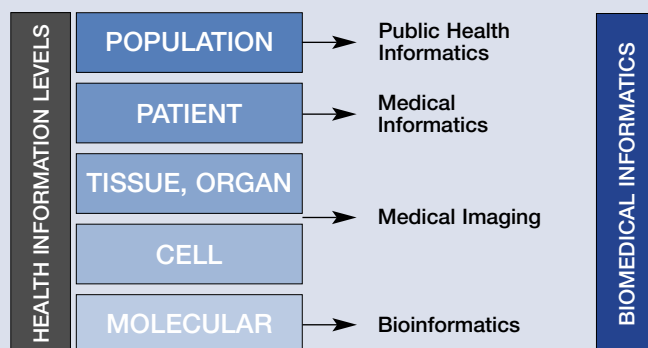
PORT INDIVIDUALISED HEALTHCARE

OUTLINE

Publication of the human genome sequence has created a profound requirement for a strong **collaborative effort between Bioinformatics (BI) and Medical Informatics (MI)**. To date, these disciplines have followed distinct evolutionary paths, however, if 'genomic medicine' is to become a reality a new integrated approach is required.

Biomedical Informatics (BMI) is an emerging framework which promises to combine these distinct fields and facilitate the discovery of **novel diagnostic and therapeutic methods**. The primary aim of BMI is to promote **individualised healthcare**. This will be achieved by building a core of knowledge and expertise and providing an appropriate technical and scientific infrastructure. Throughout this process, all relevant sources of information from 'classical' health records to new genomic and proteomic data will be exploited. The emerging field of BMI has the potential to **improve the health and quality of life of the individual** as well as to **reduce the overall cost of health care systems**. These goals may be achieved by moving approaches away from late-stage diagnoses and developing early-detection or even pre-disease prediction models.

The main goal of the INFOBIOMED Network of Excellence is to establish a durable structure for such a collaborative approach at a European level. By mobilising the needed critical mass of resources, INFOBIOMED can help BMI to become an established scientific discipline key to the future of European healthcare. Such an advance will contribute to the realisation of the many potential benefits promised in the post-genomic era.



OBJECTIVES

The specific objectives of **INFOBIOMED** are:

1. To enable **systematic progress in clinical and genetic data interoperability and integration**.
2. To advance the **exchange and interfacing of methods, tools and technologies** used in both MI and BI.
3. To enable pilot **applications in particular fields** that demonstrate the benefits of a synergetic approach in BMI.
4. To **create a European BMI community** that extends beyond the proposed core network to serve as an open forum

for dialogue between the actors involved.

5. To **widely spread the knowledge** acquired and developed in the framework of the network to the scientific community, healthcare professionals, citizens, industry, authorities and other stakeholders.

6. To enable a **robust framework for education in BMI**, as well as training and mobility of involved researchers that allows for the creation of a solid European BMI research capacity.

7. To create a **long-lasting, self-sustainable structure** in the European BMI field.

APPROACH

INFOBIOMED's approach to BMI is focused on the **integration and interoperability of data, methods, technologies and tools** from different areas - clinical, genetic, environmental. Knowledge gathered in the framework of an ambitious **"horizontal" joint programme of activities** will eventually be evaluated into **"vertical" pilot applications**, that cover the whole range of information levels from molecule to population. These applications will enable an analysis of the impact of BMI in several key fields and will allow the collection of valuable evidence and feedback on the success of this approach.

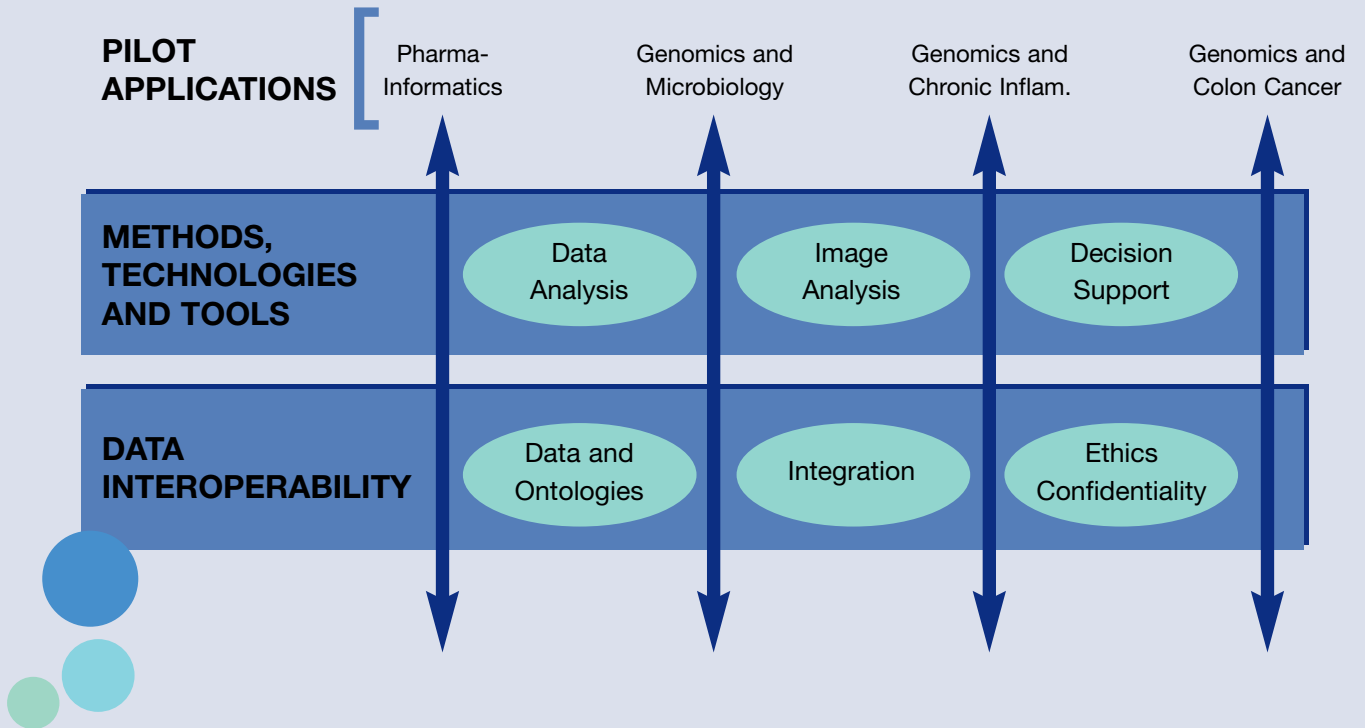
Four different **pilot applications** are envisaged within INFOBIOMED:

- **Pharmainformatics**, aimed at investigating the impact of BMI at the different stages of the drug discovery process, from the target identification to lead optimisation.
- **Genomics and microbiology**, focussed on the study of host and pathogen genetic polymorphisms, protein interactions and transcriptional/ translational control and how these impact on microbial virulence and host immune responses to infection.
- **Genomics and chronic inflammation**, aimed at investigating the complex susceptibility to adult periodontitis.
- **Genomics and colon cancer**, targeted at accumulating knowledge useful for the planning and organization of screening in families with a high-risk of developing colon cancer.




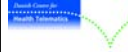












A set of specific actions is also envisaged for promoting integration of the research carried out in the fields of reference. These actions, including **dissemination and communication** activities and **training and mobility** programmes, are intended to **spread the excellence** - attracting external researchers to the common space **created by the network - and create and sustain the European research capacity in the new BMI field** - providing platforms for a virtual collaborative environment.

BIOMEDICAL INFORMATICS TO SUPPORT INDIVIDUALISED HEALTHCARE

WORKPLAN STRUCTURE



THE INFOBIOMED CONSORTIUM

Participant name	Country	Participant name	Country
 Fundació IMIM Fundació IMIM IMIM Foundation	Spain	 Universidade de Aveiro University of Aveiro	Portugal
 IMAS Institut Municipal d'Investigació Mèdica IMIM	Spain	 Center for Sundhedstelematik Danish Centre for Health Telematics	Denmark
 Instituto de Salud Carlos III Carlos III Health Institute	Spain	 INFORMA LA RICERCA DEL FUTURO	Italy
 University of Leicester	U.K.	 Heinrich-Heine-Universität Düsseldorf Heinrich-Heine-University Düsseldorf	Germany
 University of Edinburgh	U.K.	 Erasmus MC Erasmus Universiteit Medisch Centrum Rotterdam Erasmus University Medical Center Rotterdam	Netherlands
 CUSTODIX Custodix N.V.	Belgium	 Hvidovre Hospital Hvidovre Hospital, the Danish Hnpcc-Register, Hovedstadens Sygehusfællesskab	Denmark
 Universidad Politécnica de Madrid Polytechnic University of Madrid	Spain	 ACTA Academisch Centrum Tandheelkunde Amsterdam Academic Centre for Dentistry Amsterdam	Netherlands
 Ίδρυμα Τεχνολογίας και Έρευνας Foundation for Research and Technology - Hellas	Greece	 AstraZeneca	Sweden



BIOMEDICAL INFORMATICS TO SUPP



PROJECT DETAILS

Coordinating Organization	Fundació IMIM
Scientific Co-ordinator	Ferran Sanz
Project Manager	Carlos Díaz
Start Date	January 1st, 2004
Duration	36 months
Project Reference	IST-507585
Project Funding	European Commission Information Society Technologies eHealth

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