

EU-LAC Health 1st Roadmapping Workshop



EU-LAC collaboration on health research Infection Working Group

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Five Different Sub-Areas



- Public health and social care services research related to infectious diseases
- Early detection research including both screening and diagnosis
- New treatments and development of new therapeutic strategies
- Research in prevention of infectious diseases and promotion of well-being
- Underpinning research

Sub-Area 1: Public health and social care services research related to infectious diseases



- **Antimicrobial resistance and healthcare-associated Infections.** The programme covers diseases caused by antimicrobial-resistant microorganisms in the community and in hospitals, as well as all healthcare-associated infections (opportunistic infections).
- **Emerging and vector-borne diseases.** The programme covers a wide range of vector-borne and travel-related diseases, including: borreliosis, chikungunya, dengue, malaria, plague, Q-fever, rabies, severe acute respiratory syndrome, smallpox, tick-borne encephalitis, viral haemorrhagic fevers, West Nile fever, yellow fever, and some acute diarrhea diseases.
- **Food and waterborne diseases and zoonosis.** The programme includes: anthrax, botulism, campylobacteriosis, cholera, echinococcosis, hepatitis A, rotaviruses, hepatitis E, legionellosis, listeriosis, norovirus infection, salmonellosis, shigellosis, toxoplasmosis, variant Creutzfeldt-Jakob disease, verotoxigenic *Escherichia coli* infection, and other diseases.
- **Sexually transmitted infections, including HIV and blood-borne viruses.** This programme covers *Chlamydia* infection, gonorrhoea, syphilis, hepatitis B, hepatitis C, HPV, HIV infection and AIDS.
- **Vaccine preventable diseases.** The programme covers general issues concerning vaccination and the following diseases: diphtheria, infections with *Haemophilus influenzae* type B, measles, meningococcal disease, mumps, viral diarrhea (rotavirus A), pertussis, pneumococcal infections.
- **Respiratory diseases.** This programme has two main sub-programmes, the Influenza programme and the tuberculosis programme.

Sub-Area 2: Early detection research including both screening and diagnosis



- Encouragement the development of EU-LAC international disease-specific **networks** and to implement pre-existent networks
- Design of **multicentre** studies to develop new screening and diagnosis techniques
- Development of standard operational procedures and **harmonization** of techniques of diagnosis
- Design of **validation** exercises to license techniques for clinical laboratories
- Collaborative research in **animal models** to develop new early detection tools
- Collaboration with companies interested in diagnosis of infectious diseases
- Scientific advice, training and advisory functions

Sub-Area 3: New treatments and development of new therapeutic strategies



- Promotion the development of EU-LAC international disease-specific networks and to implement pre-existent networks. Collaboration in the Joint Programming AMR
- Extensive seeking of **natural compounds** with antimicrobial activity
- Development of standard operational procedures and **harmonization** of techniques of screening of new antimicrobial agents
- **Implementation** in clinical laboratories of **reliable** methods *in vitro* to detect the **resistance**.
- Collaborative research in **animal models** to develop new therapeutic strategies
- Collaboration with pharmaceutical companies
- Scientific advice, training and advisory functions

Sub-Area 4: Research in prevention of infectious diseases and promotion of well-being



- Promotion the development of EU-LAC international disease-specific **networks** and to implement pre-existent networks
- Design of **multicenter** studies to know microbial ecology and population genetics
- Development of standard operational procedures and **harmonization** of techniques of research
- Collaborative research in **animal models** of prevention of infection and alternative to animal models
- **Bioinformatics** and data analysis techniques for prediction of mechanism of infection
- Design an action plan to reinforcement of measures of **biosafety** and of **biosecurity** in research and clinical laboratories
- Collaboration with companies interested in **new vaccines** and new prevention technologies
- Scientific advice, training and advisory functions

Sub-Area 5: Underpinning research



- Promotion of the development of EU-LAC international disease-specific **networks** and to implement pre-existent networks
- Design of **multicentre** studies to know host-microbe interactions and immune response
- Development of good laboratory practices (GPL) procedures and **harmonization** of techniques of research including proficiency tests (EQA – External Quality Assurance) using specific panels
- Collaborative research in **animal models** of host-microbe interactions and alternatives to animal models
- Collaboration with companies interested in techniques related to **personalized medicine**
- Scientific advice, training and advisory functions

Scientific Discussion



- Regional relevance and Political willingness
- Feasibility (Research performers, Capabilities, Technical and financial feasibility, Cultural and socio-economic issues, National restrictions)
- Added value, for example:
 - Study of regional variations like gene frequencies, socioeconomic variables, climate conditions, etc.
 - One region could benefit from extensive research experience in a specific area of the other region.
 - The area is not funded by other research programmes

Scientific Challenges



- New tools for epidemiological surveillance: genome variability studies and metagenomics approaches;
- Identification of emerging health threats and activities related to early warning functions and outbreak investigation;
- Vigilance and response activities to be fully prepared to effectively respond to any infectious disease menace;
- Integration of procedures to analyze both hospital and community acquired diseases;
- Techniques for health communication, to get objective, reliable and easily accessible information for institutions and media.

Main Goals of the Collaboration, Specific Objectives and Type of Activities



- Transfer of technological resources to permit the adequate diagnosis of those pathogens in different matrices (environmental and clinical samples as well foods)
- Promotion of the development of EU-LAC international disease-specific networks and to implement pre-existent networks. Collaboration in the INFECT-ERA program
- Harmonization and standardization of reference diagnosis and research procedures
- Scientific advice for members of networks
- Training and permanent education
- Development of standard operational procedures for research
- Advisory functions for public health institutions, social institutions, and media.

Added Value and Expected Impact of the Collaboration



- Knowing regional differences in prevalence of different infectious diseases to develop better control programs
- Developing intervention programs adapted to geographical areas but with a global perspective
- Controlling of infectious diseases associated to immigration and travelling
- Bridging the gap between underpinning research and public health microbiology
- Increasing collaborative research, funds getting and global research results

Partners



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