Dear All,

First of all, you are warmly welcome to Institut Pasteur at this Global Conference of MediLabSecure project!

The creation of an international network with the objective to strengthen the preparedness and response to health threats through capacity building clearly resonates with the Pasteurians fundamental missions. We have thus been very proud to lead this project alongside with our partners from IRD in France, INIA-CISA in Spain and ISS in Italy. MediLabSecure has become a flagship project to reinforce health security against arboviral diseases in the Mediterranean and Black Sea regions.

Indeed, implementing a “One Health” approach, MediLabSecure has built for the past 4 years a unique multidisciplinary network of experts in the 19 beneficiary countries and in the overall region. I strongly believe that these multidisciplinary interactions you have favored between human and animal virologists, medical entomologists and public health referents is key if we are to seriously address the challenge of emerging health threats.

As the EU-funded project is about to be completed, the main objective of this conference is to take stock of project achievements with a vivid and contextual analysis of the outcomes by the teams and network members of MediLabSecure and external stakeholders from the European Union and international organizations.

The extension until the end of the year 2018 and the possible implementation of a 2nd phase for further development give us the opportunity to address ways of improvement, and possible evolutions to broaden the scope of the project and identify new needs such as:

- the inclusion of an environmental and climate component in the context of global change,
- the further development of integrated surveillance systems recommendations,
- the enlargement of the geographical area coverage of MediLabSecure network
- and strengthening collaborations and coordination activities with other consortia in surrounding regions.

“Global” qualification for this conference emphasizes our will to enlarge, improve and enhance project objectives at policy, regional and technical levels.

With this regard, external keynote speakers kindly accepted to start this conference to address One Health surveillance of arboviruses, the current situation of arboviruses in the neighbouring Sahel region and the impact of Global climate Change.

Tomorrow, the conference will be more focused on MediLabSecure achievements: the project team members will present activities in the different working groups on animal and human virology, medical entomology and public health and representatives from some beneficiary countries will testify about the impact and achievements.

In parallel, representatives of other related projects in the region will present their activities and discuss the way to improve project cooperation in order to strengthen national capacities and enhance regional preparedness to (re)emerging viral diseases threatening human and animal health in the Mediterranean and Black Sea Region.

The last day will be dedicated to a scientific board who will discuss some recommendations in order to deliver a strategic document on the integration of surveillance systems at national and regional levels.

Directors of partner institutions together with a representative from the European Union Chemical Biological Radiological and Nuclear Risk Mitigation Centres of Excellence Initiative (EU CBRN CoE initiative) will address their concluding remarks and the Head of Sector of this initiative at the Directorate General for International Cooperation and Development of the European Commission (DG DEVCO) will close the conference.

During all the meeting, you will be guided by a very dedicated and skilled team of MediLabSecure and external experts. We trust that under their impulse you will interact, and exchange visions towards the “One Health” spirit we want to achieve.

Special thanks go to the European Commission who are funding this project and to the different speakers, who took the time to come and are willing to share their know-how with all of us.

Have a wonderful time with many exchanges and interesting interactions,

Marc Jouan
MediLabSecure

Project funded by

project dates
2014 - 2018

the network

Public Health
Human Virology
Medical Entomology
Animal Virology

19 public health Institutions, Ministries of Health
4 European partner Institutes
More than 150 experts

viruses
- Rift Valley fever virus (RVFV)
- Yellow fever virus (YFV)
- Chikungunya virus (CHIKV)
- West-Nile virus (WNV)
- Dengue virus (DENV)
- Crimean-Congo haemorrhagic fever virus (CCHFV)

actions
- 8 Site visits
- 4 Publications
- 12 Workshops with 400 hours theoretical and practical training
- 15 Meetings
- 6 External quality assessments
- MosKeyTool
- MosPictoQuiz
- Dissemination with 36 presentations at conferences and 8 participations to other project meetings

toolkit
- Travelling exhibition "Vectors & Diseases"

beneficiary countries 19

L'agence Ody-C
SUMMARY

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**Monday 25/06**

**Day 1**

12:00 **Registration & Welcome Lunch**

14:00 **Opening Ceremony**

M. Jouan (Institut Pasteur)

14:15 **Plenary Session 1**

One Health Surveillance of arbovirosis and arboviruses

P. Formenty (WHO)

15:00 **One Health in the context of MedilabSecure**

MG. Dente & S. Declich (ISS)

15:30 **Plenary Session 2**

Analysis on the current situation of arbovirosis & arboviruses in the Sahel region

A. Sall (Institut Pasteur in Dakar)

16:15 **Coffee Break**

16:45 **Plenary Session 3**

Global climate change & international public health: interdisciplinary approaches and integrated responses

D. Roiz (IRD)

17:00 **Parallel Sessions: Discussion within Specialities’ Groups**

G. Hendrickx (AVIA-GIS)

19:00 **Networking Dinner**

**Tuesday 26/06**

**Day 2**

09:00 **Project’s Activities & Achievements - General Overview**

G. Macaux (Institut Pasteur)

09:15 **Project’s Activities & Achievements - Animal Virology (WP2)**

- MA. Jimenez Clavero (INIA)
- E. Perez Ramirez (INIA)
- J. Fernandez Pino (INIA)
- N. Toklikishvili (Georgia)
- S. Sghier (Tunisia)

09:45 **Testimonials from Beneficiary Countries - WP2**

- M. Bengoumi (FACO)
- C. Reusken (Erasmus MC)

10:15 **REMESA & EVD Labnet Projects - General Overview**

10:45 **Coffee Break**

11:15 **Project’s Activities & Achievements - Human Virology (WP3)**

- JC. Manenguerra (Institut Pasteur)
- G. Mikaty (Institut Pasteur)
- R. Feghali (Lebanon)
- G. Boshevski (Republic of Macedonia)
- G. Hendrickx (AVIA-GIS)
- F. Simard (InfraVec2)

11:45 **Testimonials from Beneficiary Countries - WP3**

12:15 **VectorNet & InfraVec2 Projects - General Overview**

**Wednesday 27/06**

**Day 3**

09:30 **Presentation of the MedilabSecure Strategic Document on Integrated Surveillance**

S. Declich & MG. Dente (ISS)

10:00 **Panel Discussion 2 on MedilabSecure Strategic Document**

- P. Calistri (IZSAM)
- M. Giotti (ECDC)
- G. Torres (OEI)
- C. Petigalia (FAO)
- AB. Failloux (Institut Pasteur)
- X. Jakupi (NPB-Kosovo)
- B. Alten (Hasselt University)
- N. Abouchaoua (ONSSA)

11:00 **Coffee Break**

11:30 **Concluding Session**

- S. Cole (Institut Pasteur)
- S. Vella (ISS)
- ML. Arias Neira (INIA)
- JP. Moatti (IRD)
- G. Amiranashvili (EU CBRN CoE)

12:00 **Closing Ceremony**

E. Maier (EC DG-DEVCO)

12:15 **Cocktail**

**Locations**

- **Institut Pasteur**
  - Amphitheatre Duclaux
  - Hall Amphitheatre Duclaux
  - Hall François Jacob Building

- **Restaurant**
  - Le Capitaine Fracasse
  - Bir-Hakeim, Paris
MEDILABSECURE IN THE CONTEXT OF ONE HEALTH

Interview
MediLabSecure relies on a One Health approach to prevent and contain vector-borne diseases. A team led by Maria Grazia Dente and Silvia Declich of the Istituto Superiore di Sanità in Rome, Italy, is part of the MediLabSecure network, which aims at improving health security in the Mediterranean and Black Sea region. The network includes virology and entomology laboratories and public health institutions in 19 non-EU countries of the region. These countries share common public health threats and priorities to which they should respond collectively—and quickly.

We talk to the researchers about their involvement in this network, their main achievements so far and their hopes and plans for the future.

1. What are the most important aspects and goals of your work in the context of One Health and MediLabSecure and why are they important?

Maria Grazia Dente: 70% of all emerging and re-emerging infectious diseases are vector-borne or zoonotic and the pathogens responsible for spreading these diseases have been able to successfully adapt to both human and animal populations, as well as to a changing environment. The pathogens themselves have complex life cycles involving both human and animal hosts, and in some cases also the vector. Recent years have also seen an increasing number of viral outbreaks and the One Health approach aims at addressing this serious problem by working across different sectors that include human and animal virology, entomology, the environment and public health. The ultimate goal is to improve surveillance and monitoring of emerging vector borne viral diseases (arboviruses), better prevent and prepare against arbovirus infections and reduce the risk of disease transmission.

Silvia Declich: The Mediterranean and Black Sea regions are notorious for being “hot spots” for arbovirus infections and one of the main priorities of the network is to prevent potential outbreaks of emerging or re-emerging pathogens in these regions. These include the West Nile (WNV), Dengue (DEN-V), Chikungunya (CHKV), Crimean Congo Hemorrhagic Fever (CCHFV) and Rift Valley Fever (RVFV) viruses. Other important objectives of the MediLabSecure network include increasing capacity in risk assessments for different emerging viruses and in implementing public health measures for control.

At present, there are no well-defined criteria for defining, describing and comparing surveillance systems of arbovirus infections that are implemented according to the One Health approach. To address this problem, we decided to conduct a survey and a scoping review to identify and examine surveillance systems dealing with the priority arboviruses of the region that have been developed across different sectors.

2. Could you please describe the methodology you employed?

MGD: We conducted a survey involving the 19 countries in the MediLabSecure network and began by identifying criteria to define One Health surveillance systems for controlling the above viruses. These results have been published in the Guadenni della Società Italiana di Medicina Tropical e Salute Globale.

We then analyzed publications describing systems that integrated human and/or animal and/or medical entomology and/or environmental surveillances. Next, we studied the level at which these systems were integrated—that is, the extent to which they took into account the different sectors. In this scoping review, which was published in Int J Environ Res Public Health this year, we analyzed studies that had been published in scientific peer-reviewed journals and the grey literature between 2000 and 2014.

SD: We also designed a Situation Analysis study (MeSA) to document how such integrated surveillance was being implemented in some of the countries of the MediLabSecure network. Serbia and Tunisia participated in the study with WNV and Georgia with CCHFV.

We organized three Multisectoral Risk Assessment (MRA) exercises too—on WNV, CCHFV and RVFV. The aim here was not only to formulate more reliable risk assessments but also to put forward a process that allows for an understanding of the variability in risk level assessments across sectors in a given country and highlights the added value of multisectoral risk assessments. These exercises helped to combat a certain mindset, which still exists today, that has been slow in acknowledging the advantages of a One Health approach. The results of these exercises will also facilitate operationalization of One Health—that is, to support transition from assessment to action and actually embed it in national institution procedures, implementation plans and resource allocation.

3. What are the main achievements of MediLabSecure and your studies so far?

MGD: Involving all the countries in the MediLabSecure network as well as all the different sectors has allowed these sectors to come closer, consolidate the network and enhance trust and collaboration. The studies have also helped to assess the implementation of One Health strategies in the Mediterranean region.

The lessons learned from MRA exercises will help policy-makers and other important actors become more aware of the benefit of multisector collaboration, including cross-border cooperation. Indeed, viruses and vectors themselves know no boundaries, so neither should a One Health approach.

SD: Assessing the risk of a given virus entering or re-entering, spreading and transmitting diseases in one country or more than one country in a given region is usually independently carried out by each of the sectors concerned. Taking into account that different sectors might rightly assess risk differently (for example, what constitutes a severe risk for a human might be not so risky for an animal and vice versa), MRA allows the actors in each sector to recognize this variability and the reasons behind their choice.

Being aware of this is a first step towards identifying national intersectoral priorities in terms of surveillance and response, or establishing national multisectoral committees that in turn could guide resource allocation in a One Health approach.

4. What are next stages in your research? And what directions would you like to take in the future?

MGD: We would like to include the environmental sector in a much more decisive way as well as facilitate how we and our colleagues make use of multisectoral data to prevent and contain vector-borne epidemics. This is especially important in contexts with limited resources. We would also like to reinforce the public health component and encourage public veterinarian health officials from the different countries in the MediLabSecure network to work with human health officials.

SD: Enhancing integration between systems would also be an important step forward, especially in terms of data sharing and analysis. Using the One Health approach as a critical strategy to optimize the use of available resources in the framework of the Sustainable Development Goals is a priority too. We would also like to promote MRA as a relevant tool to improve early warning of potential outbreaks by encouraging data and information sharing across the network.

MGD: Given that six out of the ten main threats to global health listed by the World Health Organization (WHO) are related to viruses present at the human-animal-environment interface, comprehensive regional assessments within a One Health approach made by national authorities could be crucial for global health security. We will only reach these challenging objectives if we have a consolidated regional network of countries that can trust and count on each other for their mutual safety.
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Bülent Altin is a Full Professor at Hacettepe University in Ankara, Turkey and has been a member of Science Faculty since 1986. He received a PhD degree in Ecology with the thesis entitled “Investigation on Bio-ecology of Culex species (Diptera: Culicidae) in southern Turkey” in 1993 from Hacettepe University. He founded The Ecological Science Research Laboratories (ESRL) in Ecology Department registered by Turkish Scientific and Technical Research Council in 1999. The Evolutionary Ecology and Genetics Laboratories (EEGL) in Genetic Department in 2007 and HU-ESRL-VERG Vector Ecology Research Group in 2014. He was invited to Montpellier, France by Institut de Recherche pour le Developpement (IRD/CNRS/UMI) with the grant of Infectiopole Sud, French Government as an Invited Professor to establish vector ecology unit and to perform a European Union Project (Edenext) together with French scientists between 2010 and 2011. In Hacettepe University, he was Vice-Chairman of Biology Department (2000-2004 and 2007-2011), Member of Scientific Council (2009-2012) and Member of Higher Education Council (2009-2012), Member of Scientific Research Unit Higher Council (2016-2017) and Director of the Animal Health Research Centre (INIA-CISA, SPAIN) (2016-2017). His research interests in Ecology are in the areas of vector ecology and taxonomy (sand fly and mosquito species), population biology and genetic, geometric morphometrics, modeling and management of vector control methods, and population modeling. He is the author of over 110 scientific papers (86 of them SCI and SCI-expanded journals), 52 technical reports, 5 books and is an active consultant for government and industry in these areas. He is a Principal Investigator of 34 national and 14 international projects and was in Scientific and Organization Committee of many scientific congresses on basic ecology and vector ecology. Dr. Altin is a member of EMCA (European Mosquito Control Association), SOVE (Society of Vector Ecology) and Turkish Parasitology Society. He was also president of European Society for Vector Ecology (SOVE) between 2001-2003 and President of International Society for Vector Ecology (International SOVE) between 2014-2015.

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Nabil Abouchaib is also World Organisation of Animal Health (OIE) laboratory and Mediterranean Network of Animal Health Laboratories (REMESA) focal point for Morocco. He is also president of the European Society for Vector Ecology (SOVE) between 2014 and 2015.

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In addition to the directorate of the Animal Health Research Centre (INIA-CISA), Dr. Arias is also Director of the EU Reference Laboratory for African swine fever (ASF), and Director of the Reference Centre of the Food and Agriculture Organization of the United Nations (FAO) for African swine fever.

Throughout her career, Dr. Arias has been concerned in over seventy-three national and EC-funded R&D projects and Agreements for Scientific and Technical cooperation with national and international Institutions and Companies. She has contributed with more than a hundred scientific and technical publications. She has got three national scientific awards for outstanding research, and a merit for the activity research. She has participated often in the capacity of Coordinator and/or Director in over fifty-seven international Courses on Animal Health organized in Europe, and Central and South America with a special relevance in the last years to African swine fever, and on the Prevention, Diagnosis and Control of Emerging and Transboundary Animal Viral Diseases.

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As a head of the EU CBRN CoE regional secretariat for South East and Eastern Europe, Givi Amiranashvili has been actively involved in the CBRN activities since 2013, when CBRN CoE regional secretariat has been inaugurated.

He is a professor of International relations and international public law and teaching different subjects at the Caucasus University (Tbilisi, Georgia) and Grigol Rakabaize University (Tbilisi, Georgia). In 2009-2011, he was a visiting scholar at New York University (NYU, USA).

Givi Amiranashvili is an author of more than 10 publications and articles in law and international relations, including in English.

In addition, he is Member of the Academy of Political Science, New York, USA and a member of the Black Sea Peace building Network.

Doctor of Veterinary Medicine from Hassane II Agronomic and Veterinary Institute, Rabat, Morocco, Nabil Abouchaib is also a Full Professor at Hacettepe University in Ankara, Turkey and has been a member of Science Faculty since 1986. He received a PhD degree in Ecology with the thesis entitled “Investigation on Bio-ecology of Culex species (Diptera: Culicidae) in southern Turkey” in 1993 from Hacettepe University. He founded The Ecological Science Research Laboratories (ESRL) in Ecology Department registered by Turkish Scientific and Technical Research Council in 1999. The Evolutionary Ecology and Genetics Laboratories (EEGL) in Genetic Department in 2007 and HU-ESRL-VERG Vector Ecology Research Group in 2014. He was invited to Montpellier, France by Institut de Recherche pour le Developpement (IRD/CNRS/UMI) with the grant of Infectiopole Sud, French Government as an Invited Professor to establish vector ecology unit and to perform a European Union Project (Edenext) together with French scientists between 2010 and 2011. In Hacettepe University, he was Vice-Chairman of Biology Department (2000-2004 and 2007-2011), Member of Scientific Council (2009-2012) and Member of Higher Education Council (2009-2012), Member of Scientific Research Unit Higher Council (2016-2017) and Director of the Animal Health Research Centre (INIA-CISA, SPAIN) (2016-2017). His research interests in Ecology are in the areas of vector ecology and taxonomy (sand fly and mosquito species), population biology and genetic, geometric morphometrics, modeling and management of vector control methods, and population modeling. He is the author of over 110 scientific papers (86 of them SCI and SCI-expanded journals), 52 technical reports, 5 books and is an active consultant for government and industry in these areas. He is a Principal Investigator of 34 national and 14 international projects and was in Scientific and Organization Committee of many scientific congresses on basic ecology and vector ecology. Dr. Altin is a member of EMCA (European Mosquito Control Association), SOVE (Society of Vector Ecology) and Turkish Parasitology Society. He was also president of European Society for Vector Ecology (SOVE) between 2001-2003 and President of International Society for Vector Ecology (International SOVE) between 2014-2015.
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Dr. Mohammed Bengoumi was born on January 18, 1962 in Rabat, Morocco. After obtaining a veterinary Ph.D in 1986, he joined the Hassan II Agronomic and Veterinary Institute as a teacher-researcher. He continued his studies with a certificate of advanced studies in Biochemistry-Microbiology and a diploma in Animal Productions and Quality of the Products. During his research work, he collaborated with several institutes in France and the United States and obtained his Degree in Doctoral de Sciences in 1992. He did several trainings in project management, moderation-facilitation, animal health, and he also did a Master in Management of Teaching and Research Institutions.

After several consultations with international organizations, he joined the FAO in 2008 as Production and Health Officer at the FAO Regional Office for North Africa and the Middle East in Cairo. In 2010, with decentralization and with the aim of being closer to the field and contributing directly to development, he asked to join the FAO Sub-regional Office for North Africa.

His fields of expertise are very varied and concern: the development of livestock (production systems, management of animal genetic resources, feeding), animal health management (epidemiology, laboratory, eco-pathology, disease control strategies), education, research and development, project monitoring and evaluation, public-private partnership, scientific and technical publications (more than 90 scientific publications in indexed scientific journals and more than 170 papers in conferences). He is a member of scientific or drafting committees for several scientific journals. He is also affiliated to several scientific organizations at the International Society for the Research and Development of Animal Production and Health.

He has worked in and travelled to more than 80 countries worldwide. Since May 2011 he is the Deputy Head of the Public Health Capacity and Communication Unit and since July 2013 also Head of the Section of Preparedness Country Support. He has contributed to the work of different WHO programmes as a medical officer of the organisation until March 2006. He was seconded by WHO to the European Commission just before the SARS outbreak (November 2002) contributing to the coordination of SARS surveillance and control in Europe as well as in the efforts for the influenza pandemic preparedness. He then moved to ECDC (European Centre for Disease Prevention and Control) in 2006 to take the position of Deputy Head of the Preparedness and Response unit. His main area of responsibilities in ECDC have been in crisis management planning and operations, epidemic intelligence, strategic development in European public health emergency preparedness and response to communicable disease, including pandemic influenza, deliberate outbreaks, Ebola, MERS-CoV, Zika.

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Massimo Ciotti is a medical doctor specialised in public health and in medical statistics. Since 1998 he has been working in international health, mainly in the communicable disease field, in developing and developed countries. During his career he contributed to the work of different WHO programmes as a medical officer of the organisation until March 2006. He has published around 80 papers in international scientific journals.
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Osman A Dar is a fellow of the Royal College of Physicians (Edinburgh) and a fellow of the Faculty of Public Health at the Royal College of Physicians (London). At Chatham House, he is director of the Centre on Global Health Security’s One Health project, an umbrella term referring to the Centre’s work on antimicrobial resistance, livestock and its IDRAM project.

Osman has helped build the IDRAM initiative which aims to strengthen weak health systems by creating partnerships between the extractive industries and public authorities to improve the prevention, preparedness for, and response to emerging infectious diseases. He also leads a project to support the Livestock Global Alliance, a collection of international agencies and institutions including the World Bank, WHO, OIE, FAO, the BGM & Gates Foundation and ILRI, in operationalizing its One Health collaborations.

Osman is also a consultant in international public health at Public Health England (PHE) where he leads a programme of work that supports low income countries build core capacities and implement their commitments under the international health regulations through the development of strengthened national public health institutes.

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Stewart Cole is an internationally renowned scientist and Professor of Microbial Pathogenesis. Since January 1st, 2018, he is President of the Institut Pasteur. From 2007 to 2017, he has served as Professor and Director of the Global Health Institute at the Ecole polytechnique fédérale de Lausanne, the Swiss Federal Institute of Technology (EPFL) – a world-leading education and research center.

For 24 years Cole worked as a researcher and also held various research management positions at the Institut Pasteur. He was Director of Strategic Technologies and then Executive Scientific Director, contributing to several patent applications relating to HIV/AIDS, cervical cancer and multidrug-resistant tuberculosis. He participated in the Scientific Advisory Boards of the Institut Pasteur in Iran, the Institut Pasteur in Montevideo and the Institut Pasteur in Lille. Professor Cole was also acting President of the Institut Pasteur in Paris in 2005.

He has been the recipient of many national and international prizes and distinctions. In 2009, he was awarded the World Health Organization’s prestigious Stop-TB Partnership Kochon Prize for his leadership and groundbreaking accomplishments in genetic research on M. tuberculosis and his contribution to novel therapeutic strategies for tackling TB. During his career, he has been involved in the work of several foundations and scientific committees, and was notably Chair of the board of the Innovative Medicine for Tuberculosis Foundation and President of the commission médicale for the Fondation Raoul Follereau.

Stewart Cole has also published more than 350 scientific papers on infectious diseases, most

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Silvia Declich, Master of Science in Epidemiology and Specialization in Nutritional Sciences, a senior researcher at the Italian Institute of Health (Istituto Superiore di Sanità), in Rome, has been the scientific director of several research projects on various areas related to communicable diseases, including those related to preparedness and migrants’ health. She has extensive experience in the leadership and management of national and international consortia, and a long standing working experience with the European Commissioner (in particular with DG SANCO and DG DEVCO) as well as with research and public health institutions in Europe and in European Neighborhood Countries. Additionally Dr Declich, is member of the ECDC Advisory Forum.

She is co-leading the Public Health working group of the MedLabSecure project at the ISS.

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Specialist in Nutritional Science with a Master in Public Health management, Maria Grazia Dente is a public health expert and experienced project manager with 30 years experience. Since last 10 years she is working on surveillance and preparedness to health threats with large scientific networks, including the multi-institutions and multi-financed project EpiSouth and EpiSouth Plus (27 EU and non-EU country partners) for which she has been the coordinator since its institution in 2006. In addition, Dr Dente has specific technical knowledge on migrant health in EU and Mediterranean countries developed during participation and coordination of several projects in this field and specific know-how on the health policy

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Dr Virginie Dolmazon (PhD) is a technical officer in the Laboratory and Surveillance Strengthening team in the WHO Lyon office. The office is part of the WHO Health Emergencies Programme and supports countries in enhancing their preparedness to outbreaks and emergencies through strengthening their core capacities to meet the International Health Regulations requirements. The Laboratory and Surveillance Strengthening team works toward strengthening laboratory quality and biosafety, laboratory testing capacities, and laboratory and surveillance systems and networks in vulnerable and resource-limited countries. In the team, Virginie Dolmazon manages the EU-funded project “Strengthening health laboratories to minimize potential biological risks” that operates in the European and Eastern Mediterranean regions.
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Dr. Anna-Bella Failoux (PhD) is a medical entomologist and chief of the unit “Arboviruses and Insect Vectors” in the department of Virology at the Institut Pasteur in Paris. Her work mainly focuses on investigations of arbovirus-mosquito interactions in order to decipher the factors leading to the viral emergence. Dr. Failoux earned her Ph.D. in Ecology/Entomology from Orsay University (Paris XI). She performed Postdoctoral Research training at the Institut Pasteur where she obtained a full position as assistant professor in 1996. She has authored over 140 scientific publications on vectors of arboviruses, flaviviruses and phleboviruses. She participates actively in teaching medical entomology as co-director of the course “Insect Vectors and Pathogens Transmission” and the MOOC “Medical Entomology” of the Institut Pasteur.

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Rita Feghali obtained a DEA in public health from the Lebanese University in 2001. She joined the laboratory department of the Rafik Hariri University Hospital in 2004 as head of the microbiology office and was appointed head of department in 2017. She is Professor at the Faculty of Medicine of the Lebanese University and member of the executive board of the Union of Biologists of Lebanon.

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Dr. Jovita Fernández-Pinero, PhD in science, is a virologist and senior researcher working at the High Biosecurity Facility (BSL3) and BSL3+ of the Animal Health Research Center (INIA-CISA) in Madrid, Spain. As a member of the Transboundary and Emerging Diseases research group at CISA, she coordinates the R+D studies regarding molecular diagnostics and molecular epidemiology of animal and zoonotic viruses of great impact for animal health. Her research area is directed to enhance the diagnosis and surveillance of relevant viral diseases. It is also notable her dedication to scientific-technical assistance to labs and international cooperation in her expertise field, acting as organizer and/or professor in more than 30 training courses, mostly at international level. She was incorporated as diagnostic trainer expert to the animal virology working group of MedialabSecure.

Pierre FORMENTY
Team lead – Viral Haemorrhagic Fevers (VHF)
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Dr. Pierre Formenty is a Doctor in Veterinary Medicine with a Master in Public Health. He is a field epidemiologist specialized in public health and in medical virology with special focus on viral haemorrhagic fevers. He has more than 27 years’ experience in international public health, tropical medicine and animal health. Since 1999, Dr Pierre Formenty has participated with the World Health Organization (WHO) in field control activities of more than 40 major outbreaks of international importance. During the Ebola crisis in West Africa, Dr Formenty has been assigned to the HQ Ebola Response department, where he was leading the Technical Strategy, Support & Standards Team (technical supervision of 7 teams, 70 staffs). Within the new WHO Health Emergency programme, he is leading the Viral Haemorrhagic Fever team (VHF) responsible for global prevention, preparedness and response to VHF outbreaks of international public health concern. Dr Formenty and his team are covering VHF and several viral emerging zoonotic infections among which Rift Valley fever, Crimean-Congo haemorrhagic fever, West Nile virus. Dr Formenty is one of the team leaders of the WHO R&D Blueprint for action to prevent epidemics. He is also the Manager of the WHO Emerging and Dangerous Pathogens laboratory Network (EDPLN), a Network of high security diagnostic laboratories for early detection and rapid containment of outbreaks due to emerging and dangerous pathogens. He has more than 140 scientific papers published in peer review journals including more than 115 referenced in PubMed. He is author and co-author of numerous reports and studies in virology, public health and animal health.

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Guy Hendrickx (DVMA, PhD) spent the first 13 years of his career in Africa working on tsetse flies. He was one of the first to use satellite data for the mapping of vector-borne diseases. His main interest is the identification of environmental factors that affect the distribution of vector-borne diseases, how these change over time and how that affects the spread of these diseases. In 2001, he established Avia-GIS, a company specialized in turning this information into spatial decision support systems that bridge the gap between research and decision making.

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Xhevat Jakupi was born in 1973 in Prishtina, Kosovo. He graduated from the Medical Faculty, University of Prishtina in 1999. Until 2002, he worked at the WHO liaison Office in Prishtina on HIV/AIDS Program. In 2002, he was appointed a teaching assistant for the Medical Microbiology course of the Medical Faculty, University of Prishtina. He completed specialization in Microbiology in 2006, and gained Master degree in 2008 at the Medical Faculty, University of Prishtina. In 2009, he was employed as a microbiologist at the National Institute of Public Health of Kosovo. Currently he is working as the Director of the Department of Microbiology, at the National Institute of Public Health of Kosovo, the position held since 2010. During the years of work at the National Institute of Public Health of Kosovo, he established and made functional a laboratory for molecular diagnostics of important public health pathogens, including testing for influenza, Crimean Congo hemorrhagic fever, and hemorrhagic fever with renal syndrome. He also increased laboratory capacities for HIV, HBV and HCV testing.

Xhevat Jakupi was born in 1973 in Prishtina, Kosovo. He graduated from the Medical Faculty, University of Prishtina in 1999. Until 2002, he worked at the WHO liaison Office in Prishtina on HIV/AIDS Program. In 2002, he was appointed a teaching assistant for the Medical Microbiology course of the Medical Faculty, University of Prishtina. He completed specialization in Microbiology in 2006, and gained Master degree in 2008 at the Medical Faculty, University of Prishtina. In 2009, he was employed as a microbiologist at the National Institute of Public Health of Kosovo. Currently he is working as the Director of the Department of Microbiology, at the National Institute of Public Health of Kosovo, the position held since 2010. During the years of work at the National Institute of Public Health of Kosovo, he established and made functional a laboratory for molecular diagnostics of important public health pathogens, including testing for influenza, Crimean Congo hemorrhagic fever, and hemorrhagic fever with renal syndrome. He also increased laboratory capacities for HIV, HBV and HCV testing.
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Miguel Angel Jiménez-Clavero is a virologist and senior researcher working at the High Biosecurity Facility (BSL3 and BSL3+) of the Animal Health Research Center (INIA-CISA) in Madrid, Spain. He is leading the Transboundary and emerging diseases group at CISA. Previously, he was Head of the Emerging diseases department at the Central Veterinary Laboratory of Spain, belonging to the Ministry of Agriculture. His current areas of interest cover diagnosis and surveillance of viral diseases with high dispersal ability and/or special virulence, particularly arthropod-borne viral zoonoses, with special attention to West Nile virus disease. He is the coordinator of the animal-virology working group of MediLabSecure.

Marc JOUAN

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Specialized in Infectious Diseases and Internal Medicine in 1996, Marc Jouan professional experience spans in China, USA and France. He was recruited by Institut Pasteur in 1999 as Medical advisor at the National Reference Center for tuberculosis. He was appointed as Secretary General of the Institut Pasteur International Network in 2002 to build international partnerships and collaborations with local governments as well as private and public partnerships. Before joining Institut Pasteur he served as Faculty physician in the Department of Infectious Diseases at Pitié-Salpêtrière University-Hospital (Paris) where he developed clinical research programs. He is also serving on several Scientific Advisory Boards, Steering Committees and the Ethics Board for European contracts. He has authored several published papers and book chapters on tuberculosis and major infectious diseases. Marc Jouan is appointed as Department of International Affairs from January 1st, 2015.

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Frédéric Jourdain is an Environmental Health engineer and worked for 8 years at the French ministry of Health. From 2007 to 2011, he acted as the national referent for vector monitoring and control issues in France. His activities were mainly dedicated to planning and risk management of vector borne diseases. From 2011 to 2017, he worked at Institute for Research for Sustainable Development for the French National Centre for expertise on vectors (CNEV). He assumed different tasks mainly by promoting networks of expertise in order to mobilize capacities in medical and veterinary entomology with a view to support decision making. He is now involved in the medical entomology network within MediLabSecure project.

Guillaume MACAUX

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Guillaume Macaux has a PhD in Chemical and Physical Sciences. Since last 10 years, Guillaume Macaux had gained experience in European funding programmes within French Research and Higher Education Institutions. He supported laboratories and research centres to build up proposals in response to calls for large-scale collaborative research projects (7th Framework Programme for R&D, DG Research, European Commission). Knowledge and Innovation Communities (European Institute for Innovation and Technology) and Development and International Cooperation projects (EuropAid, DG DEVCO, European Commission). He previously managed the coordination of a EuropAid funded project to create a Sino-European training institute in China in the field of clean and renewable energy, and higher education.

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Eddie Maier is the Deputy Head of unit at the European Commission Directorate-General for International Cooperation and Development’s (DG DEVCO), in charge of the Instrument contributing to Stability and Peace and the Instrument for Nuclear Safety. Senior Expert and Head of the CBRN sector of DEVCO with a demonstrated history of working in the research and development domain and industry. Skilled in International Relations, Research, Politics, Policy Analysis, and International Organizations. Strong business development professional. He is currently representing the EU at the Governing Board of the International Science and Technology Centre in Astana and Chair of the governing Board of the Science and Technology Centre in Ukraine. He is graduated from the University of Strasbourg, Faculty of Pharmacy (Dr Pharmacy) and the Ecole Européenne de Chimie, Polymères et Matériaux, PhD in Physical Chemistry. He has performed a Post Doc at the European Commission Joint research Centre in Geel (BÉ) on Isotope Dilution Mass Spectrometry. He has been lecturer for 12 years on QA/QC in Analytical Chemistry at the ECPMS.
Jean-Claude MANUGUERRA
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Jean-Claude Manuguerra (Ph.D.) was originally qualified as a veterinarian and was trained in virology at Institut Pasteur in order to get his PhD. He spent two years as a postdoctoral fellow at the National Institute for Medical Research (London, United Kingdom). He was then co-director of the National Influenza Centre for Northern France and of the WHO Collaborative Centre for Research and Reference on Influenza Viruses and Other Respiratory Viruses, one of the 13 laboratories included in the WHO Collaborative Multi-Centre Laboratory Network on SARS (1999-2003). He belongs to the French team sent to Hanoi for the control of the SARS outbreak at the Hanoi French Hospital in March 2003. Since then, he participated to a number of missions during outbreaks. Recently, in 2014 and 2015, he went to the Ebola diagnostic laboratory in Donka Hospital in Conacry and in the Ebola Treatment Center in Macenta in Guinea respectively.

From 2000 to present, Jean-Claude Manuguerra has been a member of the steering committee of the Global Alert and Response Network coordinated by the WHO and chaired it from 2011 to 2013.

Jean-Claude Manuguerra was Secretary General of the French Society for Microbiology from 1999 to 2001. Since December 2005, he has been a corresponding member of the French Academy of Veterinary Medicine.

Jean-Claude Manuguerra heads the Environment and Infectious Risks expertise and research Unit (ERI) which harbours the laboratory for Emergency Response to Biological Threats, which was created in 2002. Dr. Manuguerra is leading the human virology working group of the MedLabSecure project at the Institut Pasteur.

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Elisa Pérez-Ramírez is a veterinarian with a PhD in virology. She has 13 years of experience in the diagnosis, epidemiology and the study of virus-host interactions of zoonotic viruses of great impact in animal and human health such as West Nile (and related flaviviruses) and influenza viruses. Since 2011 she works as a postdoc at the Emerging and transboundary diseases group at the Animal Health Research Center (INIA-CSIC) in Madrid, Spain. She is currently the project manager of the animal virology working group of MedLabSecure.

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Jean-Paul Moatti is Chairman of the Board and Chief Executive Officer of the French Research Institute for Development since March 2015. Prior to his appointment, Jean-Paul Moatti was Professor of Economics at Aix-Marseille University (AMU) and Director of the IRD/Inserm/AMU joint research unit “Economic and social sciences for health and the process of medical information” (SESSTIM), and of the Institute of Public Health for the Alliance of Health and Life Sciences, France. He is also a member of the Advisory Committee on Health Research (ACHR) at the World Health Organisation and a special advisor on foreign affairs to the director of the French National Research Agency on HIV/AIDS and Viral Hepatitis (ANRS). He has also been an advisor to the executive director of the Global Fund to Fight AIDS, Tuberculosis and Malaria. Prof. Moatti has conducted extensive work in the fields including, access to essential medications in developing countries; micro and macro economic analysis of health care systems in developing countries; microeconomic analysis of health risk behaviour and preventative behaviours; health inequality measurement.

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Concha Martin de Pando is an Epidemiologist with a background in Psychology (UAM) and a Master Degree in Gender and International Development (ICCI-UCM. She is a fellow of Cohort 16 of the Spanish Field Epidemiology Training Programme (EPESC) at Institute of Health Carlos III (ISCIII).

She has more than twenty years working with displaced population and refugees in armed conflict contexts, with indigenous women and children in low income countries. She worked mainly in Training in the fields of Health, Mental Health, Gender and Human Rights. She gained experience in different regions: Latin America, Africa and the Mediterranean and at different institutions: Universities, local NGO’s, International organisations such as UNICEF, UNESCO, UN Peace Keeping Mission and more recently in EU funded Projects.

She has been working in PH and Epidemiology in the Mediterranean region since 2007 based in the ISCIII. She coordinated the Training and Capacity Building in Preparedness and Response WP in EPISOUTH and EPISOUTH Plus Projects. She coordinated the Náutius Simulation Exercise, a Post Command Simulation Exercises in PH threats in the Mediterranean region in 2013, where 20 Mediterranean EU and Non EU countries took part and with the involvement of EU Commission, ECDC and WHO.

She is part of CIBERESP-ISCIII, a Bio-medical Research Network in Epidemiology and Public Health since 2009. She started her involvement in MediPET since 2013, during the preparatory phase. As MediPET Liaison Officer she has been in charge to liaise with ECDC. She has also coordinated twelve Training of Trainers courses on different topics: CBRN Threats, Epidemic Intelligence, Risk Management and Risk communication among others, addressed to the senior epidemiologists working at the involved institutions. She has coordinated the three editions of the MediPET Annual Scientific Conference (2015-2017).

In 2018 she has been part of the Control Team and developer in the recently conducted Post Command Simulation Exercises held at national level by the Spanish Coordinating Centre for Health Alerts and Emergencies at the Ministry of Health, Social Services and Equality.
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Dusan Petric is a medical entomologist. Since 1980, his research activities in laboratory for medical and veterinary entomology, Faculty of Agriculture, University of Novi Sad and his international collaboration were oriented to mosquito systematics, ecology, host searching behaviour, monitoring and surveillance. In addition, he is teaching general and medical entomology to BSc and PhD students. He was also involved in the development of mosquito control measures assessment procedures together with colleagues from Germany, Italy and France, since the end of the last century have been evaluating adult mosquitoes sampling techniques. Dusan Petric has been organizing and coordinating research on black flies and their control, entomological surveillance of WNV and most recently was involved in projects on Asian tiger mosquito mass rearing and control by Sterile Insect Technique (SIT), sand flies and pathogens they transmit.

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Afifah Rahman-Shepherd has an MSc in the Control of Infectious Diseases from the London School of Hygiene and Tropical Medicine. As a Research Analyst with the Centre, she conducts and coordinates research on several ongoing projects in the field of One Health. Prior to this role, Afifah was involved in infectious disease outbreak control and investigation at the Centre for Global Health Research and Education, Institut Pasteur Paris.

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Chantal Reusken works as ass. professor “Public health Virology” at the Viroscience department of Erasmus MC. She worked for 9 years at the Netherlands Centre for Infectious Disease Control, the last three years as head of the unit for rare and emerging viral diseases and laboratory response. Her activities focus on emerging viral disease laboratory preparedness and response and as such she works at the research-diagnosits interface with a focus on pathogens moving at the animal-human interface like arboviruses, hemorrhagic fever viruses and MERS-CoV. She is coordinator of the ECDC European expert laboratory network “EVD-LabNet”. She coordinates a Dutch national ZoonAV project “ Eco-Alert critical central points for early warning of arboviral disease”. She is co-coordinator of the WHO collaborating centre for arboviruses and viral hemorrhagic fevers and has been a member of several ECDC and WHO expert committees on specific arbovirus topics, MERS-CoV, Ebola virus as well as the WHO R&D Blueprint, the WHO ZIKV EUA1 procedure, the WHO strategy on elimination of YFV and the UNICEF ZIKV procurement. She participates in the GOARN Research working group and the GisP@R CHIKV working group. She has been involved in numerous European projects (PREPARE, EMERGE JA, EVAg, ENIVD, Antigone, MelVetNet. Virgil, ZIKAIrance) as partner and/or task-leader. She has 120 peer-reviewed publications including some hallmark papers on the epidemiology of MERS-CoV, the zoonotic potential of Schmallenberg virus and laboratory preparedness and response research. Earlier she worked in the field of Virology at the Dutch Central Veterinary Institute, Leiden University and SUNY Stony Brook on plant viruses, HCV, poliovirus and CSFV. She is a virology-section editor for the One-Health journal “Infection, Ecology and Epidemiology” and the open access journal of the American Society for Microbiology, “mSphere”.

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Claudia Pittiglio is an ecologist and expert in geo-information, earth observation and disease risk modelling. She holds a PhD in Geo-Information Science and Earth Observation from the University of Twente, the Netherlands and a Master degree in Biology from the University of Rome la Sapienza, Italy. She works with the Global Early Warning and Surveillance Program (FAO-GEWIS) of the Animal Health Service at the Food and Agriculture Organizations of the United Nations (FAO), Rome, Italy. Her work mainly focuses on the identification and analysis of main agro-ecological and climatic driving factors of zoonotic diseases; development of disease risk models and risk assessments; climate change and near real-time environmental monitoring for early warning to support preparedness and surveillance activities and inform decision makers; capacity development in GIS and spatial analysis. Examples of disease risk models and risk assessments include Rift Valley fever, Anthrax, Avian Influenza, Ebola and African swine fever.

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Dr. Vincent Robert is senior researcher and medical entomologist. He is the key-expert of the medical entomology network MedLabSecure. He has more than 30 years of experience in medical entomology in tropical area (Africa and Madagascar) and in Euro-Mediterranean area. He conducted many researches on malaria and arbovirus transmission by mosquitoes. He belonged to the team that first discovered the huge impact of insecticide impregnated bednet in reducing malaria transmission on malaria deaths. He also has a large experience in teaching (Institut Pasteur) and publishing articles and books. Dr. Robert is leading the medical and veterinary entomology working group of the MedLabSecure project at IRD.

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David Roiz is a researcher specialized in vector and vector-borne disease ecology in working at the MIVEGEC (Infectious diseases and vectors, ecology, genetics, evolution and control) Unit, IRD (Institut de Recherche pour le Développement) in Montpellier, France. His research activity focus on ecology, surveillance, control and emergence of arboviruses (dengue, chikungunya, Zika, West Nile, Usutu) transmitted by mosquitoes, with a particular focus on Aedes-borne diseases. During his 15 years of professional experience he has worked in several countries with different research and public health institutions as the IDU, the Carnegie Biological station, Spanish Research council, Carlos III Institute or Edmund Mach Foundation among others. He has published more than 40 publications, SCI and several other articles or book chapters. He has been involved in numerous research projects, PhD and master’s student supervision and oral presentations. He collaborates with the World Health Organization, the European Commission, the European Centre for Disease prevention and Control, the French Ministry of Health and Public Health and he is a member of the group “vectors” of the French Agency for Food, Environmental and Occupational Health & Safety (ANSES).
Amadou Alpha Sall is virologist titular of a Doctorate in public health. He is currently General Administrator of the Institute Pasteur of Dakar (IPD). His research and evaluation concentrate mainly on the diagnosis, the ecology and the evolution of the arbovirus and viruses of the hemorrhagic fevers. He published more than 100 articles, a book on the viral diagnosis and gave more than 200 scientific papers to international meetings. Dr. Sall is member of the Expert groups for WHO, OIE and Chairman of the Global Outbreak Alert and Response Network (GOARN).

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Dr. Soufien Sghaiër PhD. graduated from the National School of Veterinary Medicine of Sidi Thabet, Tunisia in 2003. Since 2005, he specialized in virology in the Institute of veterinary research of Tunisia. During this period he developed a strong knowledge in laboratory diagnosis of viral animal disease, medical entomology, and qualitative risk assessment. In 2006, he completed a Master degree in Biotechnology and analysis techniques from Higher Institute of Biotechnology of Monastir and completed postgraduate certificate (CECI) in biostatistics from Pasteur Institute of Tunis in 2008. He spent most of his professional time on diagnostic of vector borne diseases. He was a committee member of the editorial staff in charge of the preparation of the application related to the recognition of the official sanitary status for FMD submitted to the OIE. Focal point of several international projects and member of the Tunisian animal health experts committee since 2013. Has a large number of publications, including scientific articles that have been used to support disease control in Tunisia. In 2017, he completed his biological sciences university doctorate studies at the University of El Manar, Tunisia.

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Frédéric Simard is an expert in vector biology and control working at the French “Institut de Recherche pour le Développement” (IRD) in Montpellier, France. He has spent 15 years in tropical Africa exploring the population biology, ecology and genetics of major mosquito disease vectors including Anopheles and Aedes mosquitoes. Bridging field and lab studies, medical entomology and evolution, he has been interested in exploring issues related to local adaptation, speciation and pathogen transmission. He has published over 160 papers in peer-reviewed journals in diverse areas of molecular biology and evolution; genetics and genomics, vector control and tropical medicine. Back in Montpellier in 2011, he was appointed Director of the MIVEGEIC research unit (Infectious Diseases and Vectors Ecology, Genetics, Evolution and Control) byIRD; CNRS and Montpellier University in 2015, for 6 years. He is co-PI and WP Leader in the EU/H2020 INFRAVEC 2 project.

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Ms. Natela Toklikishvili have been working at the Laboratory of Virology and Molecular Biology, Animal Disease Diagnostic Department, Laboratory of the Ministry of Agriculture of Georgia (LMA) for three years. She has experience in the fields of bacteriological, molecular and serological diagnosis of zoonotic agents. Ms. Toklikishvili is an expert in diagnostics of especially dangerous diseases: Foot and Mouth Disease, Anthrax, Brucellosis, Paste de Petits Ruminants, Crimeo-Congo Hemorrhagic Fever, African Swine Fever, Avian Influenza, Q-Fever, West Nile Disease, Rift Valley Fever, etc. At present Ms. Toklikishvili is a Ph.D. student at TSU, Tbilisi, Georgia and a resident of the South Caucasus Field Epidemiology Laboratory and Training Program – CDC, US. She has participated in the Especially Dangerous Pathogens active surveillance projects, biosecurity/biosecurity trainings and in Laboratory Quality Management programs - internship to ISO-17025 accredited laboratory TERANA in France. She has several years of experience of working in Bio Safety Level 3 (BSL-3) laboratories in Georgia as well as in Europe: at the Animal Health and Research Centre (INIA-CISA) Valdeolmos, Madrid, Spain and National Reference Center for Anthrax, Foggia, Italy. From 2008 to 2010, she worked as a researcher on contract base at Otto Warburg Center for Agricultural Biotechnology, The Robert H. Smith Faculty of Agriculture, Food and Environment, the Hebrew University of Jerusalem, Israel. From 2010, she was a scientist at the G. Eliau Institute of Bacteriophages, Microbiology and Virology, Georgia. In the frame of EU FP7 Marie Curie Actions, she worked in leading universities and institutions of EU as a long visiting researcher at the University of Dublin, Ireland; University of Copenhagen, Denmark and Institute of Marine Biology, Biotechnology and Aquaculture, Crete, Greece.
Gregorio Torres obtained his veterinary degree in Cordoba University (Spain) and continued his postgraduate education in Glasgow University and London University where he specialised in veterinary epidemiology. After some years working as a large animal practitioner in the UK, he joined the Spanish Veterinary Services where he worked for the Epidemiology Department being involved in the design and management of official disease control programmes with regular participation in technical working groups and field missions at national and international level. Currently, Gregorio is working for the Word Organisation of Animal Health (OIE), based in Paris. He is responsible for the technical secretariat of the Scientific Commission for Animal Diseases being also actively involved in a range of activities to address transboundary animal diseases including vector-borne diseases.

Stefano Vella received his degree in Medicine from the University of Rome in 1977. He subsequently achieved specialty degrees in both Infectious Diseases (1982) and Internal Medicine (1987). After a postdoctoral experience at the University of Pennsylvania (1981-1982), he joined the medical staff at the Institute of Internal Medicine, University La Sapienza, Rome, where he developed an extensive experience in the clinical management of internal medicine and infectious diseases patients. In 1991, Dr Vella was appointed Research Director of HIV/AIDS at the Istituto Superiore di Sanità (ISS), the Italian National Institute of Health. He was appointed to the Panel who developed the first HIV treatment guidelines (JAMA, 1996). From 2006 till 2013 he chaired the European AIDS Clinical Trials Network (NEAT), funded by the European Commission, involving 40 european partner institutions from 16 countries. Dr Vella is scientific advisor of the Italian Cooperation (Ministry of Foreign Affairs) in different African countries, and is involved in the setting of specific operational and implementation programs in Uganda, South Africa, Mozambique, Tanzania, and Ethiopia. He is also member of Technical Review Panel (TRP) of the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), and is currently a member of the Italian Constituency. From 2003 till 2016 he has been the Director of Department of Pharmacology and Therapeutic Research at ISS (2003-2016). In January 2017, Dr Vella was appointed Director of the Italian Center for Global Health at the National Institute of Health, whose mission is to fight health inequalities worldwide through research, education and advocacy.
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### Animal Virology

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- Name
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- Email

### Medical & Veterinary Entomology

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- Name
- Institute
- Email

### Public Health

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- Name
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MEDI LABSECURE 
BENEFICIARY COUNTRIES

Success Stories
Georgia
Nataela TOKLIKISHVILI - Laboratory of the Ministry of Agriculture of Georgia (LMA)

The National Center for Disease Control and Public Health (NCDC) of Georgia has confirmed 40 human cases of Crimean-Congo haemorrhagic fever (CCHFV) in recent years and some of them were fatal. “Since the risk group includes people who are in contact with animals, it is critical to identify antibodies against CCHFV in animals to study the epidemiology of the virus and to identify high risk areas,” explains Nataela Toklikishvili, who is chief specialist at the Laboratory of Virology and Molecular Biology (LVMB) at the LMA.

“Thanks to the MediLabSecure project, the LMA is now involved in a study where different serological tools will be evaluated with the aim of establishing suitable protocols and techniques to detect CCHFV antibodies in animals. This will help us to be better prepared to diagnose and control the disease in Georgia.”

“Based on CCHFV human cases reported by the NCDC, the National Food Agency (NFA) has undertaken vector control procedures against ticks on ruminants in Georgia,” she says. “And the LMA now plans to conduct a scientific project on CCHFV surveillance with collaborators from INIA-CISA in Madrid, Spain, which is one of the four MediLabSecure European Partner Institutes.”

“MediLabSecure has also allowed scientists in our laboratory to take part in regional meetings and technical workshops and gain valuable experience in diagnostic laboratory techniques, including serological and molecular methods. Indeed, I attended a workshop and training programme in serology in 2016 at INIA-CISA and my colleague Maka Kolkhresidze took part in two workshops about molecular diagnosis and bioinformatics in 2015 and 2017. Thanks to these training sessions, we have been able to develop and update standard operating procedures (SOPs) for vector-borne disease diagnostics in our laboratory.”

“We have also participated in two external quality assessments to evaluate our capacities to diagnose West Nile virus (WNV) and Rift Valley fever virus (RVFV) in animal samples. These exercises have been very useful for us because although these diseases have not yet been detected in animals in Georgia, the vectors for both viruses exist in our country and we therefore need to be prepared.”

Tunisia
Soufien Sghaier - Institute of Veterinary Research of Tunisia (IRVT)

Being involved in the MediLabSecure project has allowed several members of the IRVT to improve their knowledge on the diagnosis of many different arboviruses, including Usutu and Bagaza viruses. This was certainly not the case before this collaboration began as their diagnostic capacities for flaviviruses were mainly limited to West Nile Virus (WNV). What is more, although the laboratory was taking part in a Franco-Tunisian research project on Rift Valley fever virus (RVFV) surveillance, the scientists involved had not participated in External Quality Assessments (EQAs) since 2013 and therefore, they highly appreciated the organization of the MediLabSecure project RVFV EQA that took place in 2017.

“Things have now changed,” says Soufien Sghaier, who is a veterinarian in the Virology Department at IRVT. “Thanks to MediLabSecure we have been able to create links and exchange with network members – especially those at INIA-CISA in Madrid, Spain, which is one of the four MediLabSecure European Partner Institutes. And importantly, we also took part in the WNV and RVFV EQAs organized by our colleagues at INIA-CISA which was a unique opportunity to evaluate our diagnostic capacities and to be provided with positive controls of both pathogens.”

“Before the MediLabSecure project we had established collaborations with foreign laboratories such as ANSES (France) and IZS-Teramo (Italy) but thanks to the MediLabSecure project we have forged contacts and fruitful cooperation with other institutions specialized in animal health research.”

The IRVT also became the main partner of the Integrated Surveillance Plan for West Nile disease in Tunisia set up by the National Observatory of New and Emerging Diseases. The Virology lab at IRVT is in charge of the WNV serological and virological diagnosis of sentinel chickens, as well as viral research on mosquitoes. All the knowledge gained during the MediLabSecure project has been highly valuable in improving our diagnostic capacities within this national surveillance plan.

“We have very much appreciated all the activities that we have been able to carry out as part of the MediLabSecure project,” adds Soufien Sghaier. “Attending workshops allowed us to improve how we diagnose arboviruses, as mentioned, and attending regional meetings has helped us to establish contacts and strong relationships with scientific teams from around the MediLabSecure region.”

“Although we are not yet, to the best of our knowledge, collaborating with neighbouring countries (Algeria and Libya) in the surveillance and diagnosis of arboviruses, this may change in the future thanks to MediLabSecure. At the country level, the only national commissions we have in Tunisia involving the animal and human health sectors are on avian influenza and rabies. There is yet no collaboration between animal, human, entomology, public health sectors, but again, we are hoping this will change with the upcoming launch of the West Nile Integrated Monitoring Project.”
**Republic of Macedonia**

Golubinka BOSHEVSKA - Institute of Public Health (IPH), Macedonia

“Factors such as climate change, urbanization and international travel have increased the risk of emerging and re-emerging infectious diseases, which have high impact on public health. "We have been very busy since our involvement in MediLabSecure, which is not only a network for European countries but also those in the Mediterranean and Black Sea regions," explains Golubinka Boshevska, who is head of the Laboratory for Virology and Molecular Diagnostics at the IPH. “We have increased our lab’s capacity for serological and molecular detection of other arboviruses in addition to WNV - for example, we started with the detection of Dengue (DENV), Chikungunya (CHKV), Rift Valley Fever (RVF) and ZIKA viruses. We have also received valuable biocrisk management training, as well as refresher training on how to safely transport infectious substances.”

Like many other countries in the MediLabSecure network, the Macedonian team learnt how to better identify mosquitoes. “Thanks to MediLabSecure, we now have a trained team in medical entomology for the first time ever. Our researchers can now trap and identify different mosquito species and have participated in Entomological Quality Assessments. They are also involved in developing an action plan for controlling arbovirus infections in our country.”

The team has also succeeded in translating MediLabSecure brochures into Macedonian, and these texts are now available on the IPH website. This is an excellent example of intersectoral collaboration (between medical entomologists, human virologists and the public health sector),” says Golubinka Boshevska. “We are building good links with researchers in animal health too via a shared monthly bulletin that contains information on all communicable diseases, as well as direct communication.”

At the regional level, Macedonia now boasts excellent communication links with representatives in neighbouring countries, she adds. “This collaboration came in particularly useful last year when we had to deal with our first Hantavirus outbreak since 2009. We were able to contact Kosovo and Albania to help us with our diagnostics and molecular detection, serological detection and multiplex PCR assays for differential diagnosis of neurotopic flaviviruses.”

MediLabSecure also inspired the SECID (Southeast European Centre of Surveillance and Control of Infectious Diseases) network to organize a meeting in November 2017 on Laboratory Networks for High Threat Pathogens (HTP) in south-eastern European countries. This meeting was supported by the WHO since many arbovirus infections are on the HTP list.

“The very first serological testing for West Nile Virus (WNV) in the Republic of Macedonia began in 2011 following reports of cases of this virus in neighbouring Greece. Macedonia contacted the European Network for Diagnostics of Imported Viral Diseases (ENIVD) as a result and in 2014 accepted an invitation to join the MediLabSecure network.

“Things have changed quite significantly since we joined MediLabSecure”, explains head of laboratory division Rita Feghali. “Our molecular team technologists have attended several training sessions organized by the MediLabSecure project team, for example, including those that focused on shipment of infectious diseases. We have also received training in biosafety procedures, bio-risk assessment tools and introduction to quality control processes.”

Like many other countries in the MediLabSecure network, we now have a complete set-up in our lab for diagnosing important viral diseases in Lebanon.”

**Lebanon**

Rita FEGHALI - Rafik Hariri University Hospital (RHUH)

“Before being involved in the MediLabSecure network, scientists at the RHUH were not able to test for arboviruses. They did not participate in External Quality Assessments (EQAs) either and had no training in biosafety. Inter-sectoral collaboration (between animal, human, entomology and public health sectors) was non-existent and samples suspected to be contaminated with arboviruses were routinely sent to referral laboratories outside the country.”

“Things have changed quite significantly since we joined MediLabSecure”, explains head of laboratory division Rita Feghali. “Our molecular team technologists have attended several training sessions organized by the MediLabSecure project team, for example, including those that focused on shipment of infectious diseases. We have also received training in biosafety procedures, bio-risk assessment tools and introduction to quality control processes.”

“We have learnt about techniques and procedures regarding both serological and molecular testing for dengue (DENV), West Nile (WNV), Rift Valley (RVFV) and Chikungunya viruses (CHKV). These techniques include direct detection, serological detection and multiplex PCR assays for differential diagnosis of neurotopic flaviviruses.”

“At the regional level, we have received training on molecular diagnosis methods,” she adds. “We were able to purchase real-time PCR Biocad equipment and a virus sequencer. And we reorganized the molecular section of our laboratory according to biosafety guidelines and facility design.”

And that is not all: the researchers also wrote up and validated several standard operating procedures (SOPs).

“As well as these important milestones, I am pleased to say that the RHUH lab obtained the WHO certification for the shipment of infectious diseases and participated in its first EQA programmes for DENV, WNV, RVFV and CHKV, which it successfully passed.”

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Like many other countries in the MediLabSecure network, we now have a complete set-up in our lab for diagnosing important viral diseases in Lebanon.”
The MediLabSecure project aims to minimize the health risks from vector-borne diseases by helping to establish stronger institutional connections in the veterinary, public health, environmental protection and medical entomology sectors. In Serbia, this means merging several prestigious institutions so that they can pool their resources and knowledge and address the most pressing issues related to invasive and native vector species, and the diseases they transmit.

“Such intersectoral collaboration will help make policymakers more aware of these problems and encourage them to support the MediLabSecure initiative,” says Dusan Petric, who is head of the Laboratory for Medical and Veterinary Entomology (LME) at the University of Novi Sad. “The project was indeed presented to politicians at a roundtable during the “2nd Global Pest Awareness Day” held in our department on the 6th of June. On the same day, similar events took place across Europe in all of the member countries of the Confederation of European Pest Management Associations (CEPA), under the umbrella of the World Health Organization (WHO).”

“Thanks to its involvement in MediLabSecure, the LME is now better recognized as a quality partner institution by a greater number of national and Balkan country institutions,” he adds. “By promoting MediLabSecure at different vector-borne disease project meetings, our laboratory has achieved its win-win goals: proving that the MediLabSecure entomology network is a trustworthy partner for the National Veterinary Authorities within the IAEA Regional Project RER5023; and allowing the LME to become more visible as a result.”

At the kick-off meeting for this project, National Veterinary Authority country representatives accepted the idea of providing only basic entomological training to national veterinary personnel and then connecting them with suitably qualified local medical entomology laboratories from the MediLabSecure network for advanced training, he explains. “Such an approach is crucial for avoiding doubling-up, which appears to be an important problem in all South-East Europe (SEE) countries.”

“Our MediLabSecure network members also recently had the opportunity to take part in the VectorNet project field studies,” he adds. “VectorNet is the main pan-European project that aims to standardize data collection on the distribution and abundance of vectors important to medical and veterinary entomology. I coordinated SEE activities for this project, which is jointly funded by the European Food Safety Authority (EFSA) and the European Centre for Disease Prevention and Control (ECDC).”

“All LME members are proud to be part of the MediLabSecure network and to take part in targeted activities, tailored for capacity building, and to promote medical entomology. For us, MediLabSecure has paved the way for intersectoral collaboration Europe-wide and to encourage better use of resources.”

The MediLabSecure project gave us our first chance to professionally train staff in the identification of different mosquito species,” explains Taher Shaibi, who is the Focal Point for Parasites & Vector Borne Disease Laboratory at the NCDC. “These training courses were held at the Institut Pasteur in Tunis in 2016 and 2017, and trained staff who then trained other lab members in turn.

“Identifying a vector is the first step in controlling the spread of any vector-borne disease,” he says. “This is particularly crucial for emerging vector-borne diseases and accuracy is all important here.”

The training courses allowed to improve sampling, identification and surveillance of arbovirus mosquito vectors in Libya, he adds. It also helped in enhancing regional cooperation in North African countries, namely between Algeria, Egypt, Libya, Morocco and Tunisia.

The laboratory members took part in the MosPictoQuizzes too, which helped them to improve their identification skills even further.

“As a result, our trained personnel began working on surveys in Tripoli in 2017 where they were able to collect and identify mosquitoes,” says Taher Shaibi. “We called this project ‘Mosquito Fauna of Libya. It was high time that we began this, since the last known article on the subject dates from 1990.’

“We now have five surveys: three in different parts of the capital Tripoli; one in Tarhuna, a city 90 kilometres to the south-east of Tripoli; and one in Jabel Nafusa, which is a mountainous area to the south-west of Tripoli. We had planned to include the entire country, but the unstable situation here is preventing us from doing that.”

“One of the main successes of NCDC’s involvement in MediLabSecure is strengthened collaboration with the Institut Pasteur in Tunis,” he insists. “We were already collaborating before, but in a much more limited way. Since the training courses and workshops there, however, things have improved significantly.”

“And that is not all: another project on tick and tick-borne diseases is now also underway; our colleagues at the Institut Pasteur in Tunis have provided us with materials for PCR positive control,” he adds.

“We would now like to take things further and participate in advanced training for collecting and identifying mosquitoes, and ideally other arthropod vectors. It is also important to investigate different pathogens among vectors, but on our own we would not be able to afford the much-needed equipment and reagents to do this.”

“Libya is also different from other countries in the MediLabSecure network in that it is the main crossing point for migrants on their way to Europe, which brings a heightened risk of diseases being brought to the country.”
The MeSA study involved the human, animal and entomology sectors of vector-borne disease surveillance in three countries of the MediLabSecure network. We talk to national representatives Mitra Drakulovic of the National Institute of Public Health (NIPH) in Serbia, Mondher Bejaoui of the Primary Health Care Directorate at the Ministry of Health (MoH) in Tunisia and Irine Kaladadze of the National Center for Disease Control and Public Health (NCDC) in Georgia about how the MeSA has helped improve the integrated surveillance of West Nile Virus (WNV) and Crimean Congo Haemorrhagic fever (CCHF) in their respective countries.

As well as your own laboratories, could you tell us about the other institutions and laboratories involved in the MeSA study in your country?

Mitra Drakulovic: Representatives of institutions involved in WNV surveillance in Serbia are part of an Intersectoral Committee (IC), which was set up following outbreaks of the virus in our country in 2012 and 2013. Members of this committee include the Ministry of Health, the Ministry of Agriculture and Environmental Protection, the Veterinary Directorate, the Institute of Virology, Vaccines and the Sera Torlak National Reference Laboratory for ARBO viruses and haemorrhagic fevers. Other members include the Faculty of Agriculture and the Virology Department at the University of Novi Sad, the Laboratory for Medical and Veterinary Entomology at the Institute of Veterinary Medicine of Serbia, and the Institute for Biocides and Medical Ecology, and the Clinic for Tropical Medicine at the University of Novi Sad.

Mondher Bejaoui: From the Tunisian Ministry of Health, we have the Directorate for Environmental Health and Environmental Protection, the Observatory of New and Emerging Diseases and the Pasteur Institute of Tunisia. From the Ministry of Agriculture, we have the General Directorate of Veterinary Health Services, the National Center for Animal Health and Surveillance and the Institut de la Recherche Vétérinaire de Tunisie. Irine Kaladadze: The Veterinary Department at the National Food Agency (NFA) of Georgia, and the Laboratory of the Ministry of Agriculture (LMA).

How has the MeSA study reinforced interactions between the human public health sector and the veterinarian and entomological sectors in your country?

MD: By helping us review existing WNV surveillance programmes and update present formal institutional collaboration within sectors and across sectors. And by improving early warning systems in the human sector.
MB: By giving priority to formal procedures over informal exchange of information and showing that a One Health approach needs to be taken on board by all stakeholders and in all disciplines. The study was particularly helpful in consolidating response to a viral outbreak.
IK: There was already a good relationship between the different sectors in Georgia but the MeSA has greatly strengthened this and it has in particular underlined the intersectoral collaborations active for the CCHF surveillance.

How has taking part in the MeSA study and writing up a report about your experience improved awareness of integrated surveillance and One Health strategies in your country?

MD: Thanks to the MeSA study report, the Serbian NIPH started issuing weekly surveillance reports on human WNV cases and results from the Programme of Entomological Surveillance, provided by IC members. These reports will be complemented with the results from animal surveillance, also on a weekly basis.
MB: It showed Tunisian officials that strengthened coordination and collaboration between human, animal and entomology sectors is a good base for moving towards our One Health strategy objectives.
IK: The most important impact of this part of the study for us was to improve the visibility of integrated surveillance and One Health strategies in Georgia.

Have the results from the MeSA study from fellow participating countries benefited your country?

MD: Gaining insight into how the other countries are organized in terms of intersectorial collaboration in the field of arboviral surveillance has been very useful for us. The gaps and requirements identified by these countries has also provided us with valuable information on what we ourselves are lacking for when it comes to integrated surveillance.
MB: Although there are some significant differences between Tunisia, Georgia and Serbia, we have identified similar gaps, as mentioned by Mitra Drakulovic. The lessons learnt during the study will certainly help us build reinforcement programmes based on clear procedures, and regular methodical assessment.
IK: Shared knowledge from successful surveillance programmes in another country is an opportunity for us to learn and be better prepared. This is especially important for viral diseases that are not registered in our country.

Has being part of the MediLabSecure network improved inter-sectorial activities for arboviral prevention and control – both at the national and inter-MeSA network level in your country?

MD: Following a MeSA study visit, the NIPH published guidelines for all actors taking part in integrated surveillance of arboviruses in Serbia. On an inter-network level, the NIPH has set up regular communication with some of the Mediterranean and Black Sea countries on WNV circulation in mosquito and animal populations across Serbia, as well as infection in humans. Attending serological and virological diagnostic workshops and taking part in PT tests for arboviruses has allowed us to further improve collaboration with the MediLabSecure network as a whole.
MB: Training in surveillance and laboratory diagnosis has significantly improved in Tunisia thanks to our involvement in MediLabSecure. Intersectoral interaction has also advanced as a result of document sharing, meeting participation and assessing the level of integration in the scope of One Health. The same can be said for internetwork interaction. The MediLabSecure website itself is also proving invaluable for sharing information and exchanging an arbovirus infection control.
IK: At the national level, we have been able to improve inter-sectoral activities, including arbovirus prevention and control, especially in the case of Crimean Congo Hemorrhagic Fever Virus (CCHFV) thanks to support from the MediLabSecure network. One partnership that has particularly benefited is that between the NFA and the NCDC. As far internetwork collaboration, we are now cooperating with the Armenian health and veterinary sector, exchanging information and, where appropriate, carrying out joint studies.
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