



EpiSouth Report 4/2008

EpiSouth Project

Selection of zoonoses of priority in the Episouth countries: final report on the assessment conducted in July 2007

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1. Introduction

1.1 EpiSouth General Objective

The general objective of the project is to create a framework of collaboration on epidemiological issues in order to improve communicable diseases surveillance, communication and training across the countries in the area of Mediterranean and Balkans.

1.2 Specific Objectives and Areas of Activity

Several areas of activity were identified and are being developed through specific Work Packages (WP) as follow.

1 - Co-ordination of the project (WP1), with the main specific objective (SO) of guaranteeing a high quality performance of the project.

2 - Dissemination of the project (WP2), with the main SO of disseminating the information produced by EpiSouth within the participating countries and to those who need to know through an ad hoc created website and an electronic bulletin.

3 - Evaluation of the project (WP3), with the main SO of evaluating the project and its achievements in terms of milestones, deliverables, and indicators.

4 - Network of public health institutions (WP4), with the main SO of facilitating the networking process and activities among participants in order to strengthen solidarity and cohesion.

5 - Training in field/applied epidemiology (WP5), with the main SO of strengthening the early response capacity of participating countries to health threats and infectious disease spread.

6 - Cross-border epidemic intelligence (WP6), with the main SO of establishing a common platform on epidemic intelligence where participating countries may find broad internationally as well as regionally focused information.

7 - Vaccine-preventable diseases and migrant populations (WP7), with the main SO of assessing the access to immunisation and exchanging information on cases/outbreaks of vaccine-preventable diseases of migrant populations.

8 - Epidemiology and preparedness to cross-border emerging zoonoses (WP8), with the main SO of providing a platform for the communication of human (HPH) and veterinary public health (VPH) officials, describing risk assessment methods and providing a mechanism for exchanging information between HPH and VPH.

1.3 Methods

The main partner (ISS Italy) has developed a framework where all the managerial aspects are being included (WP1) and the information produced by the project are being disseminated (WP2).

Three vertical WPs, "Cross-border epidemic intelligence-WP6" (InVS, France), "Vaccines and migrants-WP7" (NCIPD, Bulgaria) and "Cross-border emerging zoonoses-WP8" (HCDCP, Greece) constitute the technical basis.

The two horizontal Work Packages, "Networking-WP4" (Padua, Italy) and "Training-WP5" (ISCIII, Spain) provide tools that help fulfilling the objectives of the vertical Work Packages. The project is evaluated through a dedicated Work Package (WP3).

1.4 Project Network Organisation

Once the project had been approved by EU-DGSANCO, the effort done by the EpiSouth Project Steering Committee was to verify the strategic possibility to involve in the Project all the interested countries of Mediterranean area.

In this framework, the 1st Project Meeting was organised in Rome in March 2007. In addition to the 9 Countries which were involved in the project from the beginning, 13 countries from the Balkans, North Africa and Middle East participated to the meeting together with representatives of EU DGSANCO, EU ECDC, and WHO. Once the EpiSouth project objectives and methodology were discussed, the new organization and partnership were elaborated.

The 2nd Project Meeting took place in Athens in last December 2007 and, in addition to the Countries present to the 1st Meeting, other four were invited as potential partners of EpiSouth Network.

The Project Steering Committee is now composed by the 6 WP leaders Countries plus ECDC, EC-SANCO C3, WHO EURO, WHO EMRO and WHO LYO-HQ representatives as observers, in order to facilitate synergy and avoid overlapping.

The participation of the Countries and the International Organisations to the project foresees three different levels of active involvement:

- a) Focal Points (FPs) of the EpiSouth Network (WP4). Each Country/International Organisation identifies and appoints one or two relevant persons who act as Focal Point (FP) of the EpiSouth Network and who convey all the communication/information to the relevant officers in their respective Countries/Organisations.
- b) Collaboration in the Work Packages Steering Teams (WPSTs). In order to facilitate and enhance the work, each Country/International Organisation actively collaborates in one or two WP Steering Teams, which is in charge for identifying the countries' needs, developing the tools and the conducive project environment in accordance with the specific objective and requirements of the related WP.
- c) Participation to Work Packages' activities. Each participating country participate to the activities of one up to all the WPs in accordance with their needs and interests.

As per December 2007, the Network counts 21 Countries, (plus Tunisia that is in progress with its official commitment to EpiSouth) which have identified and appointed a total of 52 Country Focal Points (27 from EU-Countries and 25 from non-EU Countries) plus 5 representatives from International Organisations as part of the Network.

2. Selection of the five Zoonoses of priority for the WP8 (Epidemiology and Preparedness to cross-border emerging zoonotic infections)

The WP8 concerns Epidemiology and Preparedness to cross-border emerging zoonotic infections. This will be achieved via strengthening the collaboration among stakeholders at both international and national level. In 2008 WP8 aims at providing a platform for the communication of human (HPH) and veterinary public health (VPH) officials, with accurate contacts.

Furthermore, it is useful to identify needs regarding human capacity and resources in Balkan countries and non EU-countries facing the Mediterranean Sea. As of today none of the existing European projects cover simultaneously all the Mediterranean countries and the Balkans, which are regions with particular socio-economic problems. The EpiSouth project is the only and crucial framework to collect information and strengthen human capacity and resources in this area.

The international public health intelligence aims at the timely detection and control of emerging pathogens and outbreaks. Epidemic intelligence, that is not readily available in the EpiSouth area, comes as a complement to regular monitoring of national surveillance, and it is based on already collected and circulating information, in order to sort out, verify, analyze and eventually timely disseminate information. EpiSouth has not the mandate to conduct an exhaustive epidemiologic data collection at international level but rather it represents a platform where data, information etc. can be shared on voluntary basis.

As close codependence of animals and humans is found around the Mediterranean, implying an extensive catalogue of cross-border emerging zoonoses, we attempted a selection of five zoonoses with a potentially emerging framework, in order to collect the accurate contacts of human (HPH) and veterinary public health (VPH) officials. However, this list of zoonoses will be expanded in the future.

2.1 Methods and Criteria for selection of zoonoses of priority

For the above purpose, as discussed during the first project meeting held in Rome (28-30 March 2007), a questionnaire was developed by WP8, in collaboration with WP8 Steering Team, as a complementary tool for the selection of zoonoses of priority (Appendix II).

The questionnaire includes the following internationally accepted indices defining emergence of zoonoses:

1. Increased incidence in humans.
2. Spread of the disease in novel geographic areas.
3. Detection of the pathogen in novel animal species.

Additionally, surveillance needs of the countries were taken into consideration:

1. Absence of Surveillance Systems (human or zoonotic).
2. Necessity for improvement of intersectoral collaboration (between HPH and VPH) in each distinct endemic country.

The eligibility criterion, indicated as \checkmark in table 1, was: “ **three or more countries provided a positive answer for the corresponding pathogen and the corresponding question (index)**”

The pathogens with at least four eligibility criteria (\checkmark in table 1), were selected.

2.2 Results

Among the 22 participating countries, 21 filled in the questionnaire. The results of the questionnaire are summarized in Table 1., where it is evident that Brucellosis and Rabies fulfilled four criteria, Leishmaniasis five, while Campylobacteriosis met three criteria. Table 1 summarizes the specific tables 2 to 5 in Appendix I.

Table 1. Pathogens and selection criteria(*) for priority zoonoses

Question (Index)	Increased incidence in humans	Surveillance system not available	Novel geographical areas in endemic countries	Novel animal species in endemic countries	Necessity for improvement of collaboration between HPH ¹ and VPH ² in endemic countries
Brucellosis	√		√	√	√
Campylobacteriosis	√	√			√
Crimean Congo Haemorrhagic Fever		√			√
Tickborne Encephalitis		√			√
Echinococcosis	√	√			√
Rickettsioses		√			√
Hantavirus infection		√			
Leishmaniasis	√	√	√	√	√
Listeriosis		√			√
Malaria		√			√
Tb caused by Mycob. Bovis		√			√
Rabies		√	√	√	√
Trichinellosis		√			√
VTEC infection		√			√

(*)The Selection criterion indicated as √, is: “ three or more countries provided a positive answer for the corresponding pathogen and the corresponding question (index)”

¹Human Public Health

²Veterinary Public Health

However, the latter is included in the zoonoses priority list considering that the lack of diagnostic facilities, both in the European and in the Non-EU countries, is a limitation to the incidence rate reported from the majority of countries.

In addition, the recent climate changes and current emergence of Chikungunya in the European area indicate the public health importance of vector-borne, particularly the mosquito – borne infections. Consequently, at this initial phase of EpiSouth, also the West Nile Virus, will be included in the priority list of zoonoses, thus facilitating the future expansion of the project to other vector borne diseases.

The above mentioned criteria lead to the list of zoonotic diseases of interest :

- **Brucellosis**
- **Leishmaniasis**
- **Campylobacteriosis**
- **Rabies**
- **West Nile Virus**

The zoonoses selected cover at least two pathogens of public health importance for each participating country as well as a wide spectrum of diseases. The selected zoonoses will serve as a guide in the identification of as many officials and infrastructures as possible, and they will pose the background for the subsequent expansion of the program to numerous pathogens that will be monitored in the EpiSouth area.

For more detailed information see the tables 2 to 5 in Appendix I.

3. Acknowledgements

We would like to acknowledge the enthusiastic participation and input of all Country Focal Points as well as of other colleagues from all EpiSouth countries: Teodora Georgieva (Bulgaria), Chrystallia Adjianastassioy (Cyprus), Véronique Vaillant (France), Michel Bellaiche (Israel), Marta Ciofi Degli Atti, Antonino Bella, Caterina Rizzo and Gaia Scavia (Italy), Luisa Sanchez Serrano (Spain), Ahmet Safran and Tumay Sehnaz Fatma (Turkey).

Appendix I

Table 2. Question 1: "Incidence trend in humans in your country (for the last five years)". Number of countries reporting decreasing, stable, increasing or unknown (no data) incidence

Human Incidence	Countries (N=21)*			
	Decreasing	Stable	Increasing	No data (ND)
Brucellosis	4	12	3	2
Campylobacteriosis	0	9	3	0
Crimean Congo Haemorrhagic Fever	1	8	1	10
Tickborne Encephalitis	1	6	2	11
Echinococcosis	5	8	3	3
Rickettsioses	4	9	1	7
Hantavirus infection	2	7	0	11
Leishmaniasis	1	14	4	2
Listeriosis	2	9	2	7
Malaria	5	14	0	1
Tb caused by Mycob. Bovis	3	9	0	8
Rabies	1	15	2	1
Trichinellosis	3	10	1	7
VTEC infection	0	9	1	9

* On the occasion that certain countries did not provide any answer for a certain pathogen the sum of reports is less than 21

Table 3. Question 3: “Carriage rate estimation in animals (reservoirs/vectors) in your country (for the last five years)”. Number of countries reporting no animal reservoir surveillance, surveillance in outbreaks, surveillance once annually, or systematic sampling.

Animal reservoirs surveillance	Countries (N=21)*			
	None	Only in case of outbreaks	Annually	Systematic sampling
Brucellosis	1	4	2	11
Campylobacteriosis	8	3	0	6
Crimean Congo Haemorrhagic Fever	15	0	1	0
Tickborne Encephalitis	15	0	0	1
Echinococcosis	7	2	0	9
Rickettsioses	13	2	0	2
Hantavirus infection	14	3	0	1
Leishmaniasis	6	7	0	5
Listeriosis	1	3	0	7
Malaria	14	1	0	1
Tb caused by Mycob. Bovis	3	1	1	13
Rabies	3	4	0	10
Trichinellosis	7	1	0	10
VTEC infection	12	1	0	3

*On the occasion that certain countries did not provide any answer for a certain pathogen the sum of reports is less than 21

Table 4. Questions 4a: “ For endemic agents, occurrence in NOVEL geographic areas in your country” and 4b : “For endemic agents, detection in NOVEL animal species in your country”. Number of countries reporting Emergence of endemic agents in novel geographic areas or novel animal species affected.

	Countries (N=21)*	
	Emergence in novel geographic areas	Novel animal species affected
Brucellosis	5	3
Campylobacteriosis	1	1
Crimean Congo Haemorrhagic Fever	0	0
Tickborne Encephalitis	1	1
Echinococcosis	1	1
Rickettsioses	1	0
Hantavirus infection	1	0
Leishmaniasis	5	3
Listeriosis	0	0
Malaria	2	2
Tb caused by Mycob. Bovis	2	2
Rabies	4	4
Trichinellosis	1	2
VTEC infection	1	1
Others	Schistosomiasis, tularemia	Schistosomiasis, tularemia

*On the occasion that certain countries did not provide any answer for a certain pathogen the sum of reports is less than 21

Table 5. Question 5: “Necessity for improvement of intersectoral collaboration in your country”. Number of countries reporting High, Intermediate and Low necessity for improvement, or no need to improve intersectoral collaboration.

Necessity for improvement of intersectoral collaboration	Countries (N=21)*			
	High	Intermediate	Low	No need
Brucellosis	10	6	4	1
Campylobacteriosis	3	10	5	3
Crimean Congo Haemorrhagic Fever	3	4	5	5
Tickborne Encephalitis	3	6	3	7
Echinococcosis	9	6	5	1
Rickettsioses	3	9	7	1
Hantavirus infection	2	7	4	6
Leishmaniasis	9	8	3	1
Listeriosis	5	9	5	2
Malaria	3	3	6	7
Tb caused by Mycob. Bovis	4	9	7	0
Rabies	10	3	4	3
Trichinellosis	7	4	4	5
VTEC infection	5	7	5	4

*On the occasion that certain countries did not provide any answer for a certain pathogen the sum of reports is less than 21

Appendix II

Questionnaire for identifying zoonoses of priority

- ▶ Name:Affiliation:
- ▶ Institution:Department:
- ▶ Address: Country:
- ..
- ▶ Tel – fax: E-mail.
- ..

Question 1:		<i>Incidence trend in humans in your country (for the last five years)</i>			
DISEASES	<i>Decreasing</i>	<i>Stable</i>	<i>Increasing</i>	Not available data	
Brucellosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Campylobacteriosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Crimean Congo Haemorrhagic Fever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tickborne Encephalitis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Echinococcosis (Hydatidosis)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rickettsioses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hantavirus infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Leishmaniasis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Listeriosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Malaria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tuberculosis caused by Mycobact. bovis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rabies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Trichinellosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VTEC infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other1 (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other2 (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Question 2:		<i>Surveillance system(s) of human cases in your country</i>			
DISEASES	Surveillance System NOT available	Laboratory Surveillance System	Mandatory Notification System	Other (specify)	
Brucellosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Campylobacteriosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Crimean Congo Haemorrhagic Fever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Tickborne encephalitis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Echinococcosis (Hydatidosis)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rickettsioses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Hantavirus infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Leishmaniasis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Listeriosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Malaria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tuberculosis caused by Mycobact. bovis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rabies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Trichinellosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VTEC infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other1 (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other2 (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Question 3: *Carriage rate estimation in animals (reservoirs/vectors) in your country (for the last five years)*

Agent	No surveillance practices	Only in case of outbreaks	Once annually	Systematic sampling
Brucella spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Campylobacter spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crimean Congo Haemorrhagic Fever virus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tickborne encephalitis virus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Echinococcus granulosus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rickettsia spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hantaviruses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leishmania spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Listeria spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plasmodium spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mycobacterium bovis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rabies virus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trichinella spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VTEC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other1 (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other2 (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 4: *4a. For endemic agents, occurrence in NOVEL geographic areas in your country* *4b. For endemic agents, detection in NOVEL animal species in your country*

Agent	4a. For endemic agents, occurrence in NOVEL geographic areas in your country			4b. For endemic agents, detection in NOVEL animal species in your country		
	Yes	No	Unknown	Yes	No	Unknown
Brucella spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Campylobacter spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crimean Congo Haemorrhagic Fever virus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tickborne encephalitis virus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Echinococcus granulosus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rickettsia spp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hantaviruses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

