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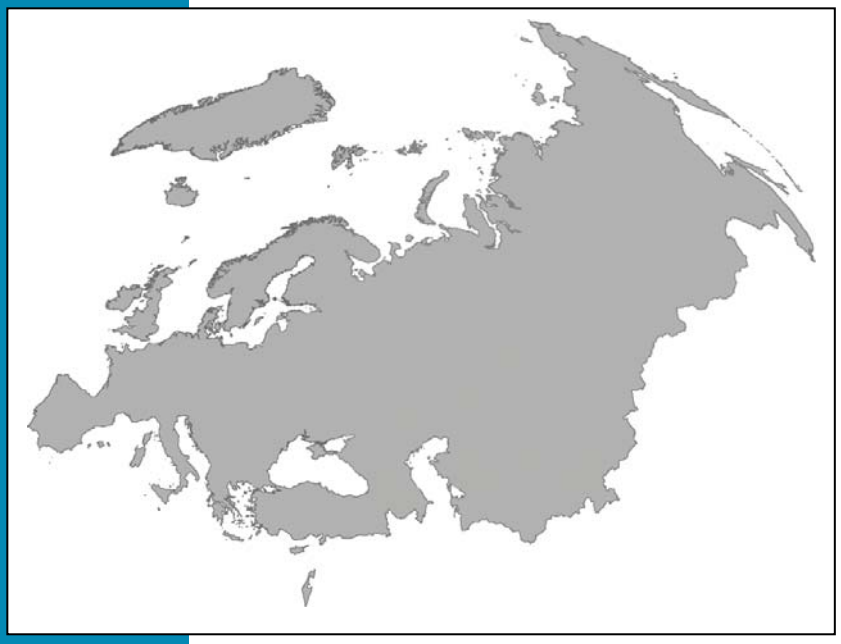

OUTLINING A STRATEGIC FRAMEWORK ON LEISHMANIASIS CONTROL

Report of a WHO meeting
Tbilisi, Georgia, 16–18 April 2013

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ABSTRACT

Recent resolutions of the World Health Organization have highlighted the urgent need for updated information on leishmaniasis in the WHO European Region. Leishmaniasis is considered a neglected disease with an underestimated public health burden. Cases of visceral and cutaneous leishmaniasis are found in western European, Balkan, south Caucasian and central Asian countries as well as in Turkey. The complex nature of the disease, characterized by high morbidity and mortality rates, especially among children, is a matter of concern in the Region. In recent years, as a result of co-infection with HIV, there has been an increase in adult cases of visceral leishmaniasis that are difficult to diagnose and treat. This report underlines the need to develop a strategic framework on leishmaniasis control to address the existing challenges and problems in the Region.

Keywords

CO-INFECTION
COLLABORATION
CONTROL
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We express our sincere gratitude to all participants of the meeting (country representatives, WHO experts and consultants, leading staff at the WHO headquarters and WHO/Europe) who provided assistance during the meeting and the preparation of this report. We are also grateful to those national managers and experts in prevention and control of leishmaniasis who helped us with their invaluable advice and guidance.

CONTENTS

Introduction

The World Health Assembly resolution WHA60.13 (2007) and the Technical Report of the Expert Committee of the World Health Organization (*Control of the Leishmaniases*. *Report of a meeting of the WHO Expert Committee on the Control of Leishmaniases (Geneva, 22-26 March 2010*) highlighted the urgent need for updated information on leishmaniasis in the WHO European Region. Such information can help in the development of appropriate policies and strategies for leishmaniasis control at the regional and national levels.

Due to low detection rates leishmaniasis can be considered as a neglected disease and the associated public health burden in the WHO European Region is underestimated. Cases of visceral leishmaniasis (VL) caused by *L. infantum* were detected in western European, Balkan, south Caucasian and central Asian countries and in Turkey. Nearly 75% of all cases were reported from Albania, Georgia, Italy and Spain. In recent years, as a result of co-infection with HIV, there has been an increase in adult cases of visceral leishmaniasis that are difficult to diagnose and treat. Currently, almost 80% of all cases of cutaneous leishmaniasis (CL) are registered in Turkey, Uzbekistan and Turkmenistan.

The ultimate objective of the meeting was to develop and agree on a strategic framework for leishmaniasis control in the Balkan, south Caucasian, central Asian and eastern European countries.

The specific objectives of the meeting were:

- to describe and discuss the current situation of leishmaniasis at the regional and national levels;
- to analyze the challenges for control of leishmaniasis;
- to exchange the experience in surveillance and control of leishmaniasis;
- to review the practical approaches and modalities for leishmaniasis control in the countries participating in the meeting;
- to develop strategic approaches to leishmaniasis control in the Balkan, south Caucasian, central Asian and eastern European countries.

The meeting was attended by representatives of the state epidemiological service responsible for leishmaniasis control in all 12 invited countries where leishmaniasis poses a serious public health problem: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Uzbekistan, Albania, Bulgaria, Turkey, Tajikistan, Turkmenistan and Ukraine. The meeting was attended by experts from Armenia, Italy, Georgia, Spain and Russia, as well as technical experts from the WHO headquarters and the World Health Organization Regional Office for Europe (WHO/Europe). The list of participants is attached.

The opening statement was made by Dr Mikhail Ejov, Programme Manager on Malaria and other Vector-borne and Parasitic Diseases of WHO/Europe, who briefed the participants on the WHO position on the issue and on the purpose and objectives of the meeting.

Welcoming remarks on behalf of the Ministry of Health, Labour and Social Affairs of Georgia (host country) were made by Dr Amiram Gamkrelidze, Director of the National Centre for Disease Control and Public Health. The speaker expressed his gratitude for holding the meeting in Georgia, warmly welcomed all the guests, technical experts and other participants and wished them fruitful work. He emphasized that leishmaniasis in Georgia is a priority public health problem. An increase in morbidity and mortality due to leishmaniasis poses a serious epidemiological threat for the country. The speaker also highlighted that an active and productive role of WHO in the fight against malaria in Georgia is a guarantee of success for future activities to control vector-borne diseases.

Welcoming speech on behalf of WHO was made by Dr Daniel Dagne (Manager, Leishmaniasis Control Programme, Department of Control of Neglected Tropical Diseases, WHO headquarters, Geneva). The speaker welcomed the participants, thanked the host country and emphasized the importance and timeliness of the meeting. He also stated that leishmaniasis is a issue of concern for a number of countries in several regions of the world. Therefore, the meeting organized in Tbilisi to discuss this issue and develop recommendations for further activities is very important.

Welcoming speech on behalf of the WHO Regional Office for Europe was made by Dr Guénaël Rodier, Director of the Division of Communicable Diseases, Health Security and Environment. He pointed out that in recent years leishmaniasis had become an urgent problem for a number of countries in the WHO European Region. Increasing morbidity and mortality due to leishmaniasis in the countries of the Region has become a major concern for WHO. Therefore, this meeting is a necessary and timely event and its recommendations will help countries significantly increase the effectiveness of leishmaniasis control activities.

After the presentation of the participants Dr Mikhail Ejov presented the meeting agenda. The agenda was approved without changes (attached). Then the participants elected two co-chairs of the meeting: Professor Vladimir Sergiev (Russia) and Professor Vladimir Davidyants (Armenia).

At the end of the opening part of the meeting Dr Mikhail Ejov presented a report on the current leishmaniasis situation, control measures and challenges to be solved.

Executive summary in Russian

Докладчики констатировали сложность сложившейся ситуации по лейшманиозу в странах Региона, где прослеживается тенденция к росту заболеваемости и расширению ареалов её распространения. Относительно высокой остается заболеваемость и смертность, особенно среди детей.

В процессе открытой и конструктивной дискуссии были обсуждены основные проблемы, стоящие перед странами, которые создают серьезные барьеры для организации эффективной системы мер борьбы и профилактики лейшманиозов. Это касается таких вопросов, как низкая подготовка медицинского персонала в целом, поздняя диагностика заболеваний, проблемы с доступностью лечения и лекарственным обеспечением, слабое межсекторальное взаимодействие и межгосударственное сотрудничество, недостаточная нормативная и учебно-методическая база. Подчеркивалось необходимость укрепления систем лабораторного, клинического, эпидемиологического и энтомологического надзора в общей системе построения мероприятий по борьбе и профилактике лейшманиозов, а также проведения научных исследований и медико-гигиенического образования населения. Особое внимание уделялось необходимости разработки национальных стратегий по борьбе и профилактике лейшманиоза в странах, в связи с чем основополагающие документы ВОЗ будут иметь для стран крайне важное значение.

Было отмечено, что в течение ряда лет в странах создана и эффективно действует система по борьбе и профилактики малярии, которая достигла высоких результатов, продемонстрировав свою действенность, эффективность и способность решать серьезные задачи на уровне стран и региона в целом. Было рекомендовано, что система по борьбе и профилактике лейшманиозов должна строится на базе действующей противомалярийной службы.

В результате работы участники совещания согласились с основными целями и задачами стратегической рамочной программы по борьбе с лейшманиозом, представленной ВОЗ.

На ближайшую перспективу были определены следующие цели:

- снижение до нуля смертности от висцерального лейшманиоза;
- значительного снижения распространенности и заболеваемости висцеральным и кожным лейшманиозами в странах, где это заболевание является проблемой для общественного здравоохранения;
- улучшение состояния здоровья населения, подвергающегося риску заражения лейшманиозом;
- снижение бремени, наносимого лейшманиозом системе общественного здравоохранения, и социально-экономических потерь, вызванных этим заболеванием.

Были также определены стратегические направления действий для достижения целей и круг первостепенно задач, которые необходимо решить с учетом существующей эпидемиологической ситуации в странах Региона:

- укрепление институционального потенциала здравоохранения для принятия решений, связанных с борьбой с лейшманиозом (как системы здравоохранения в целом, так и служб, ответственных за проведение противолейшманиозных мероприятий в странах);

- укрепление системы кадрового потенциала стран (укомплектованность, подготовка и усовершенствование);
- улучшение системы раннего выявления, а также доступа к лечению выявленных больных;
- улучшение системы эпидемиологического надзора и быстрого реагирования;
- улучшение системы энтомологического мониторинга за лейшманиозом;
- укрепление научно-исследовательского потенциала;
- повышение информированности населения и участии населения в профилактике лейшманиоза;
- расширение партнерства и межсекторальной деятельности;
- укрепление международной координации и сотрудничества.

Следующие положения были рекомендованы странам-участникам, в сотрудничестве с ВОЗ и другими партнерами:

- сохранить за собой обязательства в области борьбы с лейшманиозом как одну из приоритетных задач здравоохранения и социально-экономического развития стран;
- разработать или провести ревизию существующих национальных стратегий и подходов к борьбе с лейшманиозом в соответствии с существующей региональной рамочной стратегией ВОЗ;
- продолжить проведение исследований по оценке проблем и потребностей, связанных с местной ситуации по лейшманиозу и борьбе с ним;
- обеспечить, чтобы программы по подготовке кадров были адаптированы и соответствовали потребностям, реализуемой стратегии, направленной на борьбу с лейшманиозом;
- продолжить укрепление эпидемиологических и энтомологических служб и информационных систем, включая научно-исследовательский компонент, для обеспечения адекватного планирования, проведения и оценки мероприятий, связанных с борьбой с лейшманиозом;
- разработать или провести ревизию национальной политики по диагностике и лечению больных лейшманиозом в соответствии с существующей региональным протоколом ВОЗ;
- способствовать проведению мероприятий, направленных на привлечение населения и межсекторальное сотрудничество в деле предупреждения лейшманиоза;
- улучшить взаимодействие между странами Европейского и Восточно-Средиземноморского регионов в деле борьбы с лейшманиозом;
- расширить сотрудничество в вопросах борьбы с лейшманиозом с существующими и потенциальными партнерскими и донорскими организациями.

Следующие положения были рекомендованы ВОЗ (Европейское региональное бюро и штаб-квартира):

- продолжить оказывать содействие странам в деле борьбы с лейшманиозом;
- доработать окончательный текст региональной рамочной стратегии по борьбе с лейшманиозом в странах Балканского, Южно-Кавказского и Центрально-Азиатского регионов, и Восточной Европы с учетом

предложений, высказанных в процессе групповых обсуждений и пленарной дискуссии;

- продолжить оказывать странам поддержку в деле проведения научных исследований по лейшманиозу и обеспечения препаратами для лечения лейшманиоза;
- обеспечить необходимую техническую поддержку странам в отношении разработки или проведения ревизии существующих национальных стратегий по борьбе с лейшманиозом и протоколов по диагностике и лечению больных лейшманиозом;
- оказать помощь в организации встречи региональной рабочей группы ВОЗ по вопросам разработки регионального протокола по диагностике и лечению лейшманиоза в 2014 году, и
- оказать помощь в организации межрегионального совещания ВОЗ по вопросам борьбы с лейшманиозом между странами Европейского и Восточно-Средиземноморского регионов в Туркменистане в 2014 году.

Country reports

The meeting began with country reports entitled "Leishmaniasis control at the country level: current situation and challenges".

Session 1: Armenia, Azerbaijan and Georgia

Dr L. Paronyan, Chief Specialist, Department of Communicable and Non-Communicable Diseases, State Hygiene and Anti-Epidemic Inspectorate, Ministry of Health of Armenia.

Cases of leishmaniasis (almost exclusively of visceral form) have been recorded in Armenia since 1999. Sporadic cases of cutaneous leishmaniasis have also been registered. Vectors of leishmaniasis in Armenia are: *Ph. papatasi, Ph. balcanicus, Ph. kandelakii, Ph. caucasicus, Ph. mongolensis, Ph. jacusieli, Ph. transcaucasicus, Ph. alexandri, Ph. minutus, Ph. tobbi, Ph. neglectu and S. hodzoni pavlovski.* The main challenges facing the country are: inadequate training of health personnel, late diagnosis of leishmaniasis, poor drug supply, inadequate intersectoral cooperation and weak regulatory and methodological capacities.

Dr S. Mammadov, Head of Parasitology, National Centre for Epidemiology and Hygiene, Ministry of Health of Azerbaijan.

Cases of visceral leishmaniasis have been registered in Azerbaijan for more than 100 years. In Azerbaijan, as in Europe in general, visceral leishmaniasis of the Mediterranean type (*Leishmania donovani infantum*) is the predominant form of the disease. Most patients are children under the age of two years. 86% of cases occur in the foothill areas. Anthroponotic cutaneous leishmaniasis (ACL) can be considered as a classic form of the disease in Azerbaijan. Zoonotic CL cases have been registered in the lowlands of Azerbaijan since the late 1980s. The most persistent endemic foci of zoonotic CL in the country are Geokchay, Agdash and Ujar regions. The main challenges facing Azerbaijan are: development of a national strategy for leishmaniasis control; improving the case registration system; strengthening of laboratory facilities for leishmaniasis diagnosis; raising the level of knowledge of medical staff on the diagnosis, prevention and treatment of leishmaniasis; social mobilization; and provision of drugs.

Dr M. Iosava**,** Chief Specialist, Department of Bioterrorism and Pandemics, National Centre for Disease Control and Public Health, Ministry of Health, Labour and Social Affairs of Georgia.

From 1991 to 2012 a total of 2,103 cases of leishmaniasis were registered in the country, showing a tendency for steady growth. Most cases (1,226) were recorded in the capital Tbilisi. The following 16 vectors were found in Georgia: *Ph. kandelakii, Ph. halepensis, Ph. balcanicus, Ph. wenioni, Ph. sergenti, Ph. perfiliewi transcaucasicus, Ph. tobbi, Ph. alexandri, Ph. caucasicus, Ph. jacusieli, Ph. mongolensis, Ph. papatasi, Ph. grimi, Ph. major syriacus, Ph. chinensis simici*

and Ph. chinensis rauriaa. However studies conducted in the last two years have revealed that major vectors in Tbilisi, Kvemo, Kartli and Kutaisi are *Ph. kandelakii, Ph. halepensis, Ph. balcanicus, Ph. wenioni* and *Ph. sergenti.* The studies also revealed a high seroprevalence of leishmaniasis infection among dogs.

Then the speakers answered questions from the floor. A number of comments and suggestions were made.

Session 2: Kazakhstan, Kyrgyzstan and Uzbekistan

Dr Z. Shapieva, Head. Department of Epidemiology and Parasitology of the Republican Sanitary-Epidemiological Station, Ministry of Health of Kazakhstan.

The northernmost border of VL distribution in the eastern hemisphere lies in Kyzylorda province of Kazakhstan. Most cases of VL are recorded in rural areas of the central part of Kyzylorda province (oasis). Sources of infection are dogs, jackals and corsacs. VL foci are divided into urban and rural by type and into episodic, unstable and stable by duration of existence. Both VL and Cl cases are registered in Kyzylorda province. In South-Kazakhstan province only CL cases are recorded, whereas Zhambyl province is leishmaniasis-free. In the period from 2000 to 2012 a total of 327 cases of CL were registered in the country, most of them (170) in South-Kazakhstan province. In 2002-2012 11 cases of visceral leishmaniasis were recorded, including eight deaths (73%). VL cases were recorded in Zhalagash, Zhanakorgan, Shieli and Syrdarya districts and in the city of Kyzylorda. Two most recent cases of VL were registered in 2011 in Shieli and Zhanakorgan districts of Kyzylorda province. Both were characterized by late diagnosis of the disease following hospitalization. All cases of VL were confirmed by parasitological examination. The main challenges of the country are: inadequate alertness of the general health care services with regard to leishmaniasis; lack of necessary drugs; inadequate training of clinical laboratory staff; delayed diagnosis and treatment of patients; reduction in the monitoring of phenology and seasonal variations in the number of sandflies; unknown composition of vector species; lack of comprehensive investigation of foci; need for regular training in the diagnosis of leishmaniasis; urgent need for wider use of molecular diagnostic methods for studying vectors and pathogens; lack of adequate educational materials (videos, manuals, booklets, etc.). There is an urgent need to develop a national programme for integrated control of vector-borne diseases, including leishmaniasis, and to revise the species of sandflies living in Kyzylorda province.

Dr Z. Usubalieva**,** Head, Laboratory of Parasitology of the State Sanitary and Epidemiological Service, Ministry of Health of Kyrgyzstan.

The current conditions in the country may contribute to the emergence of leishmaniasis foci. The national ranger service reports more than 20,000 foxes and jackals living in the country. According to the municipal data the numbers of animals that are put to sleep or killed annually are as follows: 25,000-60,000 stray dogs, 500-1,500 stray cats, about 200 jackals and over 20 foxes. Each year from 1500 to 2500 people are bitten by rats (black and grey species). Moreover there are 10 species of sandfly vectors of Leishmania in the country: one species in the north and nine in the

southern areas; the most prevalent species are *Pn. chinensis, Ph. longiductus, Ph. papatasi, Ph. sergenti, Ph. cancazicus and Ph. alexandri.* Challenges facing the country include poor knowledge about the composition and prevalence of vector species (sandflies), left unmonitored in the last 30-40 years, and inadequate diagnostic capacity due to lack of doctors trained in leishmaniasis diagnosis. On the other hand, the country has a developed, vertically controlled, system for diagnosis and treatment of malaria, which can be extended to cover visceral and cutaneous leishmaniasis. An order of the Ministry of Health (No. 610 of 26.11.08) envisages the reporting of leishmaniasis cases but the respective surveillance system is still under development. The reported cases of leishmaniasis in the southern region and the presence of both infection reservoirs and vectors indicate the need for a national, financially supported, programme for control and prevention of leishmaniasis. Due to the existence of natural foci in the bordering states comprehensive entomological, epidemiological and epizotological investigations should be conducted to study the current situation and to develop joint activities. It is also necessary to develop a training programme on diagnosis, clinical manifestations, treatment and prevention of leishmaniasis.

Dr I. Tyo, Head, Parasitic Diseases Department, National Centre of Sanitary and Epidemiological Surveillance, Ministry of Health of Uzbekistan.

The health services of Uzbekistan have registered cases of zoonotic cutaneous leishmaniasis, visceral leishmaniasis and anthroponotic cutaneous leishmaniasis. Children under the age of 14 years account for 39.3% of zoonotic cutaneous leishmaniasis cases and 100% of visceral leishmaniasis cases. The vectors that are found in the republic include *Ph. papatasi, Ph. caucasicus, Ph. alexandri* and *Ph. sezgenti*. Two generations of sandflies are usually recorded per a year in Uzbekistan, with the peak in their numbers in early June and early August. The main vectors of the disease in the country are *Ph. caucasicus* and *Ph. papatasi*. The season when sandflies become infected by leishmaniasis parasites begins in May. However in the southern regions (Surkhandarya and Kashkadarya regions) this season starts at the end of April. The leishmaniasis transmission season lasts from May to October, which poses a high risk of infection propagation. The reservoirs of zoonotic cutaneous leishmaniasis are great and (to a lesser extent) red-tailed gerbils. The reservoirs of visceral leishmaniasis are pet animals and stray dogs. Challenges facing the country are as follows: high staff turnover and lack of personnel in the parasitology service, especially of entomologists and laboratory doctors; lack of alertness and preparedness for clinical diagnosis of leishmaniasis among primary health care workers and for laboratory diagnosis of leishmaniasis among personnel of the Centre of Sanitary and Epidemiological Surveillance (CSES), clinics and other health care facilities; lack of rapid diagnostic assays for leishmaniasis; inadequate supply of drugs for leishmaniasis treatment; inadequate supervision and control of leishmaniasis in remote and border areas; lack of cross-border coordination among neighbouring countries; need for further capacity strengthening in the CSES and Veterinary Service; risk of importation and spread of leishmaniasis in the non-endemic areas of the country due to the expansion of economic and social ties and increased internal and external migration of the population.

Then the speakers answered questions from the floor. A number of comments and suggestions were made.

Session 3: Albania, Bulgaria and Turkey

Professor P. Pipero**,** Director, General Directorate of Policy and Planning, Ministry of Health of Albania.

A total of 867 cases of visceral leishmaniasis were recorded in 1997-2001, with the annual rate averaging 83 cases. In the period from 2004 to 2008, 572 cases of visceral leishmaniasis were recorded. The incidence was 4.3 per 100,000 population in 2004 and 3.4 per 100,000 population in 2007. Cases of leishmaniasis are registered in most districts (89%). The main vector of *L. infantum* in the country is *Ph. neglectus.* The following vectors are recorded: *Ph. neglectus, Ph. perfiliewi, Ph. papatasi, Ph. tobbi, Ph. similis, Ph. simici, S. minuta* and *S. dentata.* Cases of visceral leishmaniasis are registered in 90% of the country districts, being most prevalent in the southern regions. Challenges facing the country include: a need for strengthening the epidemiological surveillance and laboratory diagnosis systems, need for development of a national programme; study of leishmaniasis prevalence; study of co-infection of leishmaniasis and HIV; study of the infection prevalence among dogs; vector control; health workers training; and health education of the population. Cases of resistance to glucantime, lomidine and ambisome have been recorded, which requires the development of new treatment protocols.

Dr I. Raynova, Head, Department of Parasitology and Tropical Medicine, National Centre for Infectious and Parasitic Diseases, Ministry of Health of Bulgaria.

Leishmaniasis incidence is highest among children up to 18 years old (68 cases or 56.67%). Distribution of cases by age groups of children is as follows: under 1 year – 15 cases (22.06%), 1-2 years – 18 cases (26.7%), 0 to 5 years – 48 cases (70.58% of all affected children and 40% of all cases of leishmaniasis). Leishmaniasis is also recorded in HIV-infected people. Of the 120 cases recently recorded in the country in the recent period, 116 are local (96.67%). There are natural and synanthropic foci in Bulgaria. Most cases are recorded among men (75%) and among urban residents (70.83%). Leishmaniasis is most prevalent in the southern part of Bulgaria. Challenges facing the country are as follows: assessment of the entomological situation and the development of combined activities; investigation of foci; and personnel training.

Dr S. Topluoglu**,** Deputy Director, Department of Zoonotic and Vector-borne Diseases, Public Health Agency of Turkey.

Sources of leishmaniasis infection are domestic and wild members of the family *Canidae*. Regions endemic for cutaneous leishmaniasis are SanliUrfa, Osmaniye, Adana, Hatay, Mus, Aydin, Mersin and Diyarbakır. Seasonal agricultural workers play a key role in transmission of the infection. Some cases of leishmaniasis were imported from Central Anatolia and the Mediterranean and Aegean regions. The incidence of cutaneous leishmaniasis in the country is 2.54 per 100,000 population, with the following distribution by regions: S.Urfa: 59,14, Osmaniye: 36,47, Adana:

13,75, Hatay: 10,65, Mus: 4,1, Aydin: 3, Mersin: 2,76, Diyarbakir: 2,6. The main vector of visceral leishmaniasis (*L. infantum*) is recorded sporadically and usually in the same regions of the country. Dogs are the main natural reservoir of *L. infantum*.

Then the speakers answered questions from the floor. A number of comments and suggestions were made.

Session 4: Tajikistan, Turkmenistan and Ukraine

Dr S. Karimov**,** Director. Republican Centre for Tropical Diseases, Ministry of Health of Tajikistan.

Leishmaniasis is endemic in the country and activities aimed at its control are considered as a national priority. Cases of both cutaneous and visceral leishmaniasis are recorded. Areas endemic for visceral leishmaniasis include Gorno-Badakhshan Autonomous Province (cities Khorog, Vanj and Darvoz) and Sughd Province (Panjakent, Aini, Istaravshan, Spitamen and Chkalovsk). A total of 606,398 people are at risk of contracting visceral leishmaniasis. The incidence of the disease is on the rise. Areas affected by cutaneous leishmaniasis include Sughd Province (Panjakent, Zafarabad, Spitamen, J. Rasulov, Istaravshan, Kanibadam, Ganci, B. Gafurov, Aini, Asht, Hudzhand and Chkalov) and Khatlon Province (Shahrituz). A total of 312,800 people are at risk of this infection. Challenges facing the country include: lack of measures against insects and reservoirs of infection (especially rodents and stray dogs); lack of public knowledge about leishmaniasis and means to control it; lack of funds for vector control and studies for identification of infection reservoirs; limited opportunities for early diagnosis and effective treatment of leishmaniasis, especially in remote endemic areas; lack of modern laboratory equipment and supplies; inadequate training and experience of medical personnel in the prevention, diagnosis and treatment of leishmaniasis; and lack of financial resources for leishmaniasis control. These challenges can be solved by improving the technical and managerial capacity of the Centres for Tropical Diseases and the general health services for prevention and early detection, diagnosis and treatment of leishmaniasis; conducting research on leishmaniasis vectors and their geographical distribution; improving the system for the detection and control of leishmaniasis foci; involvement of partners and donors into leishmaniasis control activities in the country; specialized training in the diagnosis and treatment of leishmaniasis; conducting combined activities to control sandflies in areas of intense transmission of leishmaniasis; raising awareness of the population; involving communities in leishmaniasis control activities; strengthening inter-sectoral collaboration and partnerships with international organizations and neighboring countries.

Dr T. Suhanova, Head, Department of Parasitology, Development and Production Centre of the State Sanitary and Epidemiological Service, Ministry of Health and Medical Industry of Turkmenistan.

The climatic and geographical conditions in Turkmenistan are favourable for leishmaniasis transmission. Cases of leishmaniasis infection, including the following three forms, were often recorded in the past: visceral leishmaniasis (VL), anthroponotic cutaneous leishmaniasis (ACL) and zoonotic leishmaniasis (ZL). Only

occasional cases of ZL are reported at present. However, the continuing expansion of economic, social and cultural ties with leishmaniasis-endemic countries and the intensive development of new territories in the country dictate the need for a national strategy for leishmaniasis prevention. Close cooperation with the neighbouring countries is particularly important to deal with this challenge.

Dr O. Zaika**,** Chief Specialist, Department of State Sanitary and Epidemiological Supervision, Ministry of Health of Ukraine.

Epidemiology of leishmaniasis in Ukraine at the beginning of 2013 is considered as favourable. This is confirmed by the analysis of the identified cases of leishmaniasis in 1995-2010. 41 cases of leishmaniasis were imported into Ukraine during this period. 37 cases were imported from Iran, Turkmenistan and Syria (including 29 cases of cutaneous leishmaniasis). Eight cases of visceral leishmaniasis were imported from 6 countries (Armenia, Egypt, Italy, Spain and Malaysia). The first fatal cases of imported visceral leishmaniasis were recorded in 2008 (a 9-year-old child in Kiev and a 42-year-old man in Lviv). One imported case of visceral leishmaniasis was recorded in 2009 in a patient with HIV/TB co-infection. Three cases of leishmaniasis were reported in 2010: two imported cases of visceral leishmaniasis in Odessa, one in Simferopol. Four cases of imported cutaneous leishmaniasis were registered in 2011 in Ukraine (Crimea, Vinnytsia, Donetsk and Kharkov) – one in a four-year-old child. Two cases of leishmaniasis were recorded in 2012 (they were imported from Turkmenistan). Most cases were recorded in men; 16.2% of cases were recorded in children under the age of 14 years. Six species of sandflies are found in the Crimea: *Ph. papatasi scopoli, Ph. major krimensis perfiliewi, Ph. perfiliewi perfiliewi Parrot, Ph. chinensis tauriae perfiliewi, Ph. sergenti similes perfiliewi* and *Ph. alexandri sinton*. The presence of sandflies is registered in the following cities: Yalta, Alupka, Gursuf, Alushta, Feodosia, Simferopol and Sevastopol. In the Odessa region sand flies are found in Izmail district, including the city of Izmail.

The speakers answered questions from the floor, comments and suggestions were made and a plenary session was held to discuss the reports on the situation in countries.

Reports and plenary discussion

The next part of the meeting was devoted to the guidelines and reviews presented by WHO consultants.

Session 5: Main challenges for leishmaniasis control

Professor V. Sergiev (Director, E.I. Martsinovsky Institute of Medical Parasitology and Tropical Medicine of the Ministry of Health and Social Development of the Russian Federation) made a report entitled "The epidemiology and control of leishmaniasis in the countries of the former Soviet Union. Historical aspects". He gave a detailed description of the experience with control and prevention of leishmaniasis in a historical perspective. An educational film on leishmaniasis made by Professor Sergiev was shown to the participants.

Professor E. Ponirovsky (Senior Fellow, Protozoology Department at the E.I. Martsinovsky Institute of Medical Parasitology and Tropical Medicine of the Ministry of Health and Social Development of the Russian Federation) made a report entitled "Leishmaniasis control: methods of vector control". The speaker gave a detailed description of the composition of vector species in the Caucasus, Central Asia and other regions, the characteristics of different species and methods of vector research and control.

Dr L. Gradoni (Research Director, Department of Vector-borne Diseases, Department of International Health of the National Institute of Health, Italy) made a report entitled "Leishmaniasis. Control of infection reservoirs and monitoring of risk factors". The speaker gave a detailed description of the characteristics and determinants of infection reservoirs and methods for their research and monitoring.

The speakers answered questions from the floor, comments and suggestions were made and a plenary session was held to discuss the summarizing reports.

Session 6: Main challenges for leishmaniasis control (continued)

Dr M. Nuncio (Department of Parasitology, National Centre of Microbiology, Institute Carlos III, Spain) made a report entitled "Leishmaniasis control. The factors determining the spread and transmission of leishmaniasis in the WHO European Region". About 2000 cases of leishmaniasis (*Leishmania infantum*) were reported in Spain in 2000-2010. Dogs are the main reservoir of infection. Clinical forms of leishmaniasis are cutaneous and visceral. Transmission of infection mostly occurs in cities and recreational areas. The situation in the country can be described as sub-endemic (0.45 cases per 100,000 population), but leishmaniasis outbreaks are also recorded in some areas including the capital Madrid. The disease mainly affects children up to four years of age. A significant challenge for public health is leishmaniasis and HIV co-infection (998 cases, accounting for 36% of all cases of leishmaniasis). The principal vectors are *Ph. perniciosus* and *Ph. ariasi*. Factors increasing the urgency of the situation are global warming (movement of vectors in the northbound direction and prolongation of the transmission season), urbanization (growth of suburbs, larger numbers of infected pet dogs with asymptomatic disease), immunosuppressive conditions (HIV infection, immunosuppressive therapy, etc.), tourism, migration and environmental changes.

Dr I. Kokaia (Director, Virsaladze Institute of Medical Parasitology and Tropical Medicine of the Ministry of Labour, Health and Social Affairs, Georgia) made a report entitled "Treatment of visceral leishmaniasis in the WHO European Region". The speaker gave a detailed description of leishmaniasis treatment with the help of such drugs as pentavalent antimoniates, miltefosine, paromomicina, pentamidine and liposomal amphotericin. Glucantime and ambisome showed high clinical efficiency (>90%). The use of ambisome was associated with a shorter treatment course and faster improvement of clinical and laboratory parameters as well as fewer side effects (7%). Glucantime treatment was associated with more frequent and more severe side effects (13%); the treatment of some patients was discontinued due to hepatotoxicity and cardiotoxicity of the drug. Several deaths (1.25%) were also reported. Hepatotoxicity and cardiotoxicity of the drug was mainly observed in adults with liver

damage caused by hepatitis B or C infection. Hepatotoxicity and cardiotoxicity of glucantime was manifested after 10-20 days of treatment. The clinical efficacy of both drugs used as monotherapy in HIV-infected patients was very low; in almost all cases there was a recurrence of disease even when the total dose of ambisome was increased to 30 mg/kg of body weight. Treatment of the HIV-infected patients with both drugs was repeated. However, the second course of therapy also failed. All HIV-infected patients had a reduced number of CD4+ lymphocytes and several co-infections. Treatment with multiple drugs or secondary prevention is recommended for all HIV-infected patients.

Dr M. Ejov (Programme Manager, Malaria and other Vector-borne and Parasitic Diseases, WHO/Europe) made a report entitled "Strategic approaches to leishmaniasis control in the Balkan, south Caucasian, central Asian and eastern European countries of the WHO European Region". The report focused on the following issues: regional vision of the goals and objectives of the Programme, strategic approaches and priority activities, monitoring and evaluation. Dr Ejov also touched upon the necessity of proper timing of activities.

The speakers answered questions from the floor, comments and suggestions were made and a plenary session was held to discuss the summarizing reports.

Group work

Session 7: Discussion and elaboration of the strategic plan for leishmaniasis control in the Balkan, south Caucasian, central Asian and eastern European countries

Dr M. Ejov summarized the preliminary results of the first part of the meeting as follows. The countries described the current epidemiological situation of leishmaniasis and analysed challenges associated with leishmaniasis control. They also shared experience on surveillance and control of leishmaniasis and summarized the practical approaches to leishmaniasis control used in each country attending the meeting. The main objective of the meeting was to finalize the strategic framework for leishmaniasis control in the Balkan, south Caucasian, central Asian and eastern European countries by discussing and solving all relevant issues within work groups. Two working groups were set up.

The first group consisted of representatives of Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Professor V. Sergiev and Professor V. Davidyants were elected as facilitator and rapporteur.

The second group consisted of representatives of Albania, Bulgaria, Turkey and Ukraine. Drs L. Gradoni and D. Dagne were elected as facilitator and rapporteur.

Session 8: Group work

The working groups discussed and elaborated a document entitled "The strategic plan for leishmaniasis control in the Balkan, south Caucasian, central Asian and eastern European countries" which was prepared by WHO/Europe.

Session 9: Discussion of the results of the group work

Professor V. Davidyants and Dr D. Dagne reported the results of the group work on the strategic plan for leishmaniasis control in the Balkan, south Caucasian, central Asian and eastern European countries. These results included specific comments, suggestions and recommendations on increasing the efficiency of leishmaniasis control activities. Members of the working groups pointed out some risky aspects of the Programme as well as possible obstacles and challenges.

The rapporteurs submitted the amended strategic plan prepared by the working groups.

Plenary discussion and closure of the meeting

Session 10: Plenary discussion and closure of the meeting

The participants discussed the Strategic Plan for Leishmaniasis Control in the Balkan, south Caucasian, central Asian and eastern European countries. They raised and discussed a number of issues and gave suggestions concerning the following aspects:

- prematurity of leishmaniasis elimination goals (Russian Federation, Uzbekistan, and Tajikistan);
- exchange of data on cases of leishmaniasis, especially of imported leishmaniasis (Armenia, Georgia, Tajikistan and Azerbaijan);
- WHO's coordinating role (Bulgaria) and ECDC (Italy);
- preparation of the final version of the document and its translation into Russian (WHO, Turkmenistan and Azerbaijan);
- staff training and publication of guidelines and textbooks (Italy, WHO and Kazakhstan);
- stimulation of research (Georgia, Armenia and Italy);
- development of guidelines on leishmaniasis epidemiology, manifestations, diagnosis and treatment (Spain, Russian Federation, Georgia, Tajikistan, Turkmenistan, Kyrgyzstan and Armenia);
- development of entomological research (Azerbaijan, Russian Federation, Armenia, Bulgaria and Kazakhstan);
- intersectoral cooperation (Armenia and Tajikistan);
- possibilities for increasing the knowledge of the population (Kyrgyzstan and Turkmenistan);
- cross-border cooperation (Turkey, Tajikistan and Uzbekistan).

Conclusions

Speakers emphasized the complex nature of the current epidemiology of leishmaniasis in the countries, characterized by a tendency for incidence increase and expansion of affected areas. High morbidity and mortality, especially among children, is another priority concern. The current situation can develop into a serious

epidemiological problem in some countries and in the European Region as a whole. Increasing population migration in the countries is an important contributing factor.

Open and constructive discussions during the meeting helped to identify the main obstacles to establishing an effective system of leishmaniasis prevention and control in the countries. These obstacles include the following: poor training of medical personnel in general; late diagnosis of disease; inadequate access to treatment and necessary drugs; poor intersectoral and cross-border cooperation; inadequate regulatory and educational capacities. The participants identified the following priority needs: development of an integrated framework of laboratory, clinical, epidemiological and entomological surveillance services within the general system for leishmaniasis prevention and control; increase in research activities; and improvement and intensification of health education of the population within the above framework. The participants highlighted the urgent socio-economic challenges facing a number of countries.

They particularly emphasized the need for development of national strategies for leishmaniasis prevention and control and indicated that WHO policy framework documents on this subject will be a very important tool for the countries.

The countries have an effective system for malaria prevention and control (created and developed over a number of years) which has proved its effectiveness, efficiency and ability to overcome major country and regional challenges. Therefore the system for leishmaniasis prevention and control should be built on the basis of the existing antimalarial service.

The participants approved the goals and objectives of the strategic plan for leishmaniasis control that was presented by WHO.

The following short-term objectives were identified:

- elimination of mortality from visceral leishmaniasis;
- significant reduction in the prevalence and incidence of visceral and cutaneous leishmaniasis in countries where this disease is a public health problem;
- improvement of the health of the population at risk of leishmaniasis infection;
- reduction of the public health burden and socio-economic losses due to leishmaniasis.

The participants identified strategic activities for achieving the objectives and goals that had been set on the basis of the current epidemiological situation in the countries. These activities include the following:

- strengthening the institutional capacity of health services and the capacity for decision-making related to leishmaniasis control (both in the general health care system and in the services responsible for leishmaniasis prevention and control);
- development of human capacity (adequate staffing, personnel training and improvement of knowledge and skills);

- improvement of early diagnosis and patients' access to treatment;
- improvement of the surveillance and rapid response system, as well as studying the effects of climate and other factors on the spread of the disease;
- improvement of entomological monitoring of leishmaniasis;
- strengthening research capacity with the involvement of WHO collaborating centres;
- raising public awareness and community involvement in activities aimed at leishmaniasis prevention;
- expanding partnerships and cross-sectoral activities.
- strengthening international coordination and cooperation.

Recommendations

Member States where leishmaniasis is a public health concern should, in collaboration with WHO and other partners:

- remain committed to leishmaniasis control as a priority task of the public health and socio-economic development of the countries;
- develop or revise the existing national strategies, approaches and guidelines for leishmaniasis control in line with the relevant WHO regional strategic framework;
- continue to perform need and risk assessments with regard to leishmaniasis at both national and local levels and strengthen efforts aimed at improving methods of leishmaniasis control;
- ensure that national training programmes are adapted to and based on the existing strategy for leishmaniasis control;
- strengthen epidemiological and entomological services and information systems, including research activities, with the aim of ensuring adequate planning, implementation and evaluation of leishmaniasis control interventions;
- develop or revise the national leishmaniasis diagnosis and treatment policies based on the relevant WHO regional treatment protocol;
- strengthen community involvement and intersectoral collaboration for leishmaniasis prevention;
- promote collaboration on leishmaniasis prevention and control between countries of the WHO European and Eastern Mediterranean regions;
- enhance collaboration on leishmaniasis control with existing and potential partners and donors.

WHO (WHO Regional Office for Europe and WHO headquarters) should:

- continue supporting countries in leishmaniasis control activities;
- finalize the WHO regional strategic framework for leishmaniasis control in the Balkan, south Caucasian, central Asian and eastern European countries

taking into account the suggestions made during the group and plenary discussions of the meeting;

- continue supporting countries in leishmaniasis research and in coordinating the procurement of drugs for leishmaniasis treatment;
- support countries in developing or revising national strategies for leishmaniasis control and protocols for diagnosis and treatment of leishmaniasis;
- assist in organizing a WHO regional working group to outline and agree on the regional protocol for diagnosis and treatment of leishmaniasis to be held in 2014; and
- assist in organizing a bi-regional meeting on leishmaniasis control between European and Eastern Mediterranean countries to be held in Turkmenistan in 2014.

After closing remarks made by Drs D. Dagne, M. Ejov, V. Sergiev and V. Davidyants the meeting was closed.

Annex 1. Programme

Tuesday, 16 April	
09.00–09.15	Welcome by *Ministry of Health*, *Georgia*
09.15–09.30	Welcoming address by WHO *WHO headquarters, WHO/Europe*
09.30–09.45	Introduction of participants Meeting objectives and arrangements Election of Chairperson and Rapporteur
09.45–10.00	Leishmaniasis global epidemiology and control: Current situation, progress made and challenges *WHO headquarters*
10.00–10.15	Progress towards Leishmaniasis control in the WHO European Region *WHO/Europe*
10.15–10.30	Plenary discussion
11.00–11.45	Leishmaniasis control: Current situation, progress made and challenges at country level *Armenia, Azerbaijan, Georgia*
11.45–12.30	Leishmaniasis control: Current situation, progress made and challenges at country level *Kazakhstan, Kyrgyzstan, Uzbekistan*
13.30–14.15	Leishmaniasis control: Current situation, progress made and challenges at country level *Albania, Bulgaria, Turkey*
14.15–15.00	Leishmaniasis control: Current situation, progress made and challenges at country level *Tajikistan, Turkmenistan, Ukraine*
15.00–15.15	Plenary discussion
15.15–15.30	Leishmaniasis epidemiology and control in NIS: Historical aspects *Professor V. Sergiev*
16.00–16.15	Short film on Leishmaniasis in ancient artefacts *Professor V. Sergiev*
16.15–16.30	Leishmaniasis control: Vector control options *Dr E. Ponirovsky*
16.30–16.45	Leishmaniasis control: Reservoir control and monitoring risk factors *Dr L. Gradoni*
16.45–17.00	Plenary discussion
17.00–17.30	Wrap-up session – closure of first day, *Rapporteur*

Wednesday, 17 April	
09.00–09.15	Leishmaniasis control: Factors facilitating the spread and transmission dynamics of Leishmaniasis in the WHO European Region *Dr J. Moreno Nuncio*
09.15–09.30	Leishmaniasis control: Treatment of visceral Leishmaniasis in the WHO European Region *Dr I. Kokaia*
09.30–10.00	Outlining a strategic framework for Leishmaniasis control in the Balkan, South Caucasian and Central Asian countries as well as in Eastern Europe *WHO/Europe*
10.00–10.30	Plenary discussion
11.00–11.15	Introduction of group work
11.15–12.30	Group work: *Reaching agreement on a strategic framework in the Balkan, South Caucasian and Central Asian countries as well as in Eastern Europe and next steps:* Working group 1: Representatives of Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, international experts, WHO staff Working group 2: Representatives of Albania, Bulgaria, Turkey and Ukraine, international experts, WHO staff
13.30–15.00	Group work continued
15.30–17.00	Group work continued
17.00–17.30	Wrap-up session – closure of second day *Rapporteur*
Thursday, 18 April	
09.00–10.30	Group work continued: Group presentations to be finalized
11.00–12.00	Working group presentations
12.00–12.45	Plenary discussion and adoption of a strategic framework for Leishmaniasis control in the Balkan, South Caucasian and Central Asian countries as well as in Eastern Europe
12.45–13.00	Closing statements

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The WHO Regional Office for Europe

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