Programme

Date & Time	Subject	Speakers
Thursday, 29/06/2000	Arrival	
Friday, 30/06/2000	**Organising the network: internal structures and outside contacts**	
9^{00}-9^{15}	Introduction	T. Löscher, Munich
9^{15}-10^{45}	"Past deeds and present challenges": presentation of the current situation of TropNetEurop	T. Jelinek, Munich
10^{45}-11^{00}	Break	
11^{00}-12^{00}	Election of a steering committee for TropNetEurop, discussion on by-laws	T. Jelinek, Munich
12^{00}-13^{00}	Lunch break (buffet)	
13^{00}-15^{00}	Construction of a computerized reporting system: networking co-ordination, electronic data transmission, construction of a web page	C. Schulte, Munich T. Jelinek, Munich
15^{00}-15^{30}	Afternoon break	
15^{30}-17^{15}	Financing opportunities for the network: national and European perspectives	R. Behrens, London; A. Matteelli, Brescia; T. Jelinek, Munich
17^{15}-18^{00}	TropNetEurop and other networks: modes of interaction	F. von Sonnenburg, Munich
19^{30}	Invited dinner	
Saturday, 01/07/2000	**Research projects within the network**	
8^{30}-8^{45}	Introduction	T. Jelinek, Munich
8^{45}-$9^{\wedge 5}$	Research project: Reactogenicity of combination vaccines in travel medicine	H. Kollaritsch, Vienna
9^{15}-9^{45}	Research project: Leptospirosis	F. Cobelens, Amsterdam
9^{45}-10^{15}	Research project: Fever in returning travellers	J. Clerinx, Antwerp
$10^{15-}10^{30}$	Break	
10^{30}-11^{00}	Research project: Amoebiasis	A. Kotlowski, Gdynia
11^{00}-11^{30}	Research project: Imported dengue fever	M. Corachan, Barcelona
11^{30}-12^{00}	Research project: Immunity to malaria in semi-immune immigrants	A. Matteelli, Brescia
12^{00}-12^{30}	Research project: Therapy of uncomplicated malaria	A. Björkmann, Stockholm
12^{30}-13^{15}	Buffet lunch	
13^{15}-13^{45}	Research project: Malaria drug resistance	T. Jelinek, Munich
13^{45}-14^{015}	Project discussion, pending proposals	T. Jelinek, Munich
14^{15}-14^{30}	Summary of proceedings and closure	T. Löscher, Munich
15^{00}-17^{00}	Steering committee meeting	

Workshop Organizer and Contact Address

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- **Deutsche Forschungsgemeinschaft (DFG)**
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- **Aventis Pasteur MSD**
- **SmithKline Beecham Pharma**

Contents

Welcome

Dear members of TropNetEurop:

It is my pleasure to welcome you to Munich.

When we together started TropNetEurop as an initiative for the surveillance of imported diseases to Europe in February 1999 we could not expect the network beeing so successful during its first year already.

This workshop will give us the opportunity to evaluate and summarize results obtained so far, and to discuss and identify appropriate strategies for improvement and further growth of the network. An important task will be the election of a steering committee and the preparation of appropriate by-laws in order to establish TropNet Europ as a branch of TROPMEDEUROP, the association of the Institutes and Schools of Tropical Medicine in Europe.

In addition, the network provides a unique opportunity for collaborative research projects. Some of these will be presented during the workshop.

I am covinced that together we will be able to establish TropNetEurop as an important and recognized initiative within the current and future European net of networks in public health.

I wish you a successful meeting and a pleasant stay in Munich.

Thomas Löscher

A word of thanks

Dear colleagues!

I am happy to welcome you to our first TropNetEurop workshop in Munich. The network has surpassed all expectations during its first year. We hope that this meeting will build the foundation for a truly collaborative and successful venture that shall benefit all of us.

First of all, a word of thanks to all colleagues in Europe that decided to participate in this initiative and contributed to its fast growth and recognition.

I wish to express gratitude to all staff of the Department who supported the organization of this workshop with their enthusiasm. Among others, members of my research group provide tremendous help in running the network. Specific thanks go to Gaby Peyerl-Hoffmann, Clemens Schulte, and Sabine Jordan for their support in organizing this workshop.

Invaluable help and assistance was provided by my wife Claudia who has truly taken TropNetEurop to her heart and continues to give active support and, most important understanding. We spent many nights at the computer together. Thank you!

Munich, 05.07.00

Tomas Jelinek

About TropNetEurop

1 Summary

While public health services all over Europe are sorely lacking data on number, nature and impact of infectious diseases that are increasingly imported to the continent, infectious disease clinics dealing with the patients carrying those infections are ideally situated to effectively detect emerging infections of potential global impact at their point of entry into the domestic population.

Thus, the objectives and expected achievements of TropNetEurop are

1. *to maintain a collaborative network of European professionals dealing with imported infectious diseases;*
2. *to create European consensus for clinical guidelines for diagnostic and therapeutic procedures in imported infectious diseases;*
3. *to identify emerging pathogens by sampling returning international travellers, immigrants, and foreign visitors;*
4. *to add information and accuracy to the current, divergent European systems of disease notification;*
5. *to provide grounds for cluster investigation and intervention strategies by Public Health authorities;*
6. *to provide the basis for permanent research collaboration of infectious disease centres in Europe*

Partners of the network come from all parts of Europe. Collaborating sites have the opportunity to co-operate within the network at different levels:

a) all sites receive regular epidemiological information by the co-ordinating site;
b) reporting sites that collect standardised denominator data on travel related disease are carefully chosen; and
c) all sites have the possibility to participate in one or more scientific projects. The projects are designed to monitor emerging infectious diseases of potential public health significance and to provide a baseline of knowledge about the spectrum of infectious diseases that are imported to Europe.

Reporting started February 1999 and consists now of three diagnose-centred surveillance projects:

- *Epidemiology of imported malaria*
  Malaria is obviously one of the most important imported diseases, causing high morbidity among European travellers. A thorough recording of epidemiological and clinical aspects of imported malaria will certainly be helpful in detecting new outbreaks and areas of developing drug resistance and will trigger further planning further prevention strategies.
- *Epidemiology of imported schistosomiasis*
  Schistosomiasis is currently not reported in any European public health system. Still, this infection appears to be surprisingly common among returnees from endemic areas. The infection can easily be prevented by avoiding exposure. More information about epidemiological details in travellers will certainly be helpful to decrease the number of cases.
- *Epidemiology of imported dengue fever*
  Without any doubt, dengue fever is one of the emerging infectious diseases with world-wide impact. Numbers of imported dengue cases into Europe are unknown and management is far from standardized. More information is urgently needed in order to understand the epidemiology of the disease in travellers.

2 Background and Rationale of the Initiative

Infectious diseases remain the leading cause of death world-wide. Reduction in mortality from many infectious diseases has been described as the single most significant public health achievement of the past century. Unfortunately, historical success in treating and controlling some of these diseases left some policymakers with the false perception that the threat to public health from infectious agents is almost non-existent. Emerging infectious diseases that threaten the European public health originate from both domestic and international sources. In recent years, emerging infectious disease threats from abroad have increased significantly. Cholera has recently returned to the Western Hemisphere in epidemic proportions after almost a century's absence. Similarly, various parasitic diseases, once considered exotic in Europe, are emerging or re-emerging as public health threats. Numbers of malaria patients are constantly increasing in various European countries, with drug resistance of the parasite posing an important therapeutical and epidemiological problem for clinicians and the public health service. These and other examples suggest that the concept of "domestic" as distinct from "international" health is outdated. Such a dichotomous concept is no longer germane to infectious diseases in an era in which commerce, travel, ecological change, and population shifts are inter-twined in a truly global scale. Surveillance is the single most important tool for identifying infectious diseases that are emerging, are causing serious public health problems, or are diminishing in importance. The morbidity, mortality, and cost of infectious diseases can be measured through surveillance. The quality of a national health care system and effectiveness of health regulations can only be adequately assessed if effective surveillance systems are in place. The varied strata of modern society present numerous challenges to such an effective surveillance. For example, assessing the health of traditionally underserved or transient populations, such as migrant workers, asylum seekers, the homeless, or inner-city minorities, is difficult, but such populations are often the first and most seriously affected by emerging infectious diseases. A very similar situation exists in the highly inhomogeneous group of international travellers who are exposed to a variety of infectious diseases that will become clinically apparent only after their return to Europe.

Health care delivery and earlier recognition of infectious diseases are enhanced when susceptible populations are targeted for surveillance. Especially infectious diseases from abroad challenge existing surveillance capabilities in Europe severely because global surveillance of such diseases is fragmentary at best. In addition to monitoring specific diseases and syndromes, gathering information about the numerous factors that affect disease emergence is also important. Understanding and controlling infectious diseases imported to Europe requires denominator studies on important symptoms (e.g. fever and diarrhoea) to define the prevalence of important infections, their source countries and potential behavioural risks associated with them. Second, the pathophysiological basis of a variety of imported infectious diseases is still unclear and needs to be understood in order to develop adequate therapeutical measures.

Developing appropriate responses and control strategies for emerging infectious disease threats depends on linking laboratory science and epidemiology with public health practice. Innovative approaches to combining surveillance and applied research are essential for controlling infectious diseases. Epidemiological studies, including investigation of both outbreaks and sporadic disease, are critical to the rapid identification of risk factors for new diseases and provide important prevention information early in the evolution of a potential epidemic. Such studies are often the first integral step toward identifying the cause of an imported infectious disease outbreak. Other areas of applied research in imported infectious disease epidemiology needed may include economic analyses of the impact of imported infectious diseases, cost-effectiveness analyses of proposed interventions, the study of behaviours that affect risk, and measurement of the effectiveness of public health interventions. When a new or previously unrecognised infectious disease is suspected, clinicians, epidemiologists, and laboratorians need to work together to obtain case histories and collect and evaluate specimens. Such multidisciplinary efforts need a co-

ordination authority to gather all information and distribute it to all relevant collaborators. Establishing the causes of infectious diseases is fundamental to controlling them. Therefore, rapid and accurate diagnostic tools need to be constantly evaluated.

To provide the vigilance and rapid response required to effectively address imported infectious diseases, significant improvements in public health policy, program design and infrastructure are needed. One of the essential tools of this improvement, surveillance, serves several purposes: a) it characterises disease patterns by time, place, and person; b) it detects epidemics; it suggests hypotheses and themes for epidemiological investigation; c) it evaluates prevention and control programs; and d) it projects future health care needs. In addition to monitoring and identifying needed public health responses for known infectious diseases, a well-functioning surveillance system maintains vigilance for imported infectious diseases. The ability to detect what is new or emerging depends on the capacity to identify and track the routine as well as the unusual. The use of sentinel events to enhance surveillance is an effective public health tool that has proven useful in the monitoring of many diseases. Sentinel networks, linking groups of participating individual or organisations to a central data receiving and processing centre, have been particularly helpful in monitoring specific infections or designated classes of infections.

3 Objectives and Expected Achievements

The major objective of this venture is to establish and maintain the European Network on Imported Infectious Disease Surveillance (TropNetEurop), an electronic network of clinical sites related to imported infectious diseases. The network is designed to effectively detect emerging infections of potential regional, national or global impact at their point of entry into the domestic population. Sentinel Surveillance reporting is carried out by participating sites by use of a standardised and computerised reporting system. Immediate transmission of anonymized patient and laboratory data to the central database assures timely detection of sentinel events. TropNetEurop can serve as convenient tool to alert Public Health authorities and trigger further cluster investigation. The comprehensive collection of data on notifiable and not-notifiable infectious diseases in travellers makes it possible to identify needs for further surveillance and investigation and provides the potential for future case-control studies by identification of specific risk factors. Furthermore, advantages and hidden pitfalls of the currently used systems of notifiable diseases in Europe can be evaluated by TropNetEurop. Although only three defined surveillance projects were proposed initially, design of the network allows for developing into an eventually sufficiently comprehensive and felxible system to detect unexpected events and and to allow inclusion of new surveillance parameters with only minor modifications. Additional specific research projects are initiated by the network steering committee, the co-ordinating site or by participating sites themselves.

The objectives and expected achievements of TropNetEurop are

1 *to maintain a collaborative network of European professionals dealing with imported infectious diseases;*
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6 *to provide the basis for permanent research collaboration of infectious disease centres in Europe*

4 Institutional Profile and Partners

The network is headed by a steering committee (five members) that has been elected for two years by all site managers. The co-ordinating site of TropNetEurop, the Department of Infectious Diseases and Tropical Medicine of the University of Munich, is part of the medical clinic of Munich´s university hospital. It maintains an exceptionally active travel clinic, an outpatient clinic for infectious and tropical diseases, participation in inpatient clinical care at the University Hospital, laboratories for routine diagnostic procedures in infectious diseases, a wide array of research laboratories, and various field projects in Africa and South East Asia. As such, it forms a link between clinical practice, laboratory sciences, epidemiological sciences, and applied field research in endemic countries.

Network partners have been selected under aspects of a wide coverage in Europe with inclusion of major travel clinics as well as inpatient and outpatient sites serving international migrants, asylum seekers, professional travellers and tourists. The network is defined as a constantly changing and growing entity. Therefore, further collaborating sites may be included over time and some partners listed now might decide to leave the network. Several partners have a history of joint publication with each other and many have previously served as co-investigators in multi-centre projects. Participants of the network been chosen carefully from a group of clinics that have acquired ample experience in collaborating together in a wide array of scientific studies within the last years. Therefore, although the selection of collaborating partners does not provide complete coverage of all European travel clinics, TropNetEurop has the advantage to build up on existing links and knowledge between the collaborating partners from the beginning. The network grows steadily over time. With additional reporting sites, full coverage of travel clinics can be reached. The system of partnership within the network is based on different levels of participation: a) all sites collaborate as information receiving sites (epidemiological information is distributed regularly by the co-ordinating site) with the option to report single, unusual sentinel events from their clinic; b) all reporting sites collect standardised surveillance data on imported malaria, dengue and schistosomiasis; and c) all sites have the possibility to participate in one or more research projects.

5 Design and Methods

The backbone of the European Network on Imported Infectious Disease Surveillance are formed by reporting sites who report travellers presenting to their clinics on a standardised and anonymised questionnaire which is progressively being replaced by a customised computer program. The computer program is provided by the co-ordinating site and will be established successively at all reporting sites. Data are preferably reported by e-mail, or by fax. The received data are analysed by the system operator at the co-ordinating site in Munich and placed in the context of received messages from international epidemiological newsgroups (e.g. ProMed). A condensed report on the analysis of current data and international mailings is posted on monthly basis by e-mail and is published on the TropNetEurop webpage. All members of the network, whether reporting or not, receive these regular reports. All members are asked to report unusual presentations and diseases to the network, which serve as a warning system for imported infectious diseases with potential regional or national impact. Institutions of the National Health Service are invited to form an integral part of this system with all possibilities to participate as information receiving and reporting sites. They also have the opportunity to receive raw data and analysis of all reports on request with the possibility to implement short-term intervention strategies, if necessary. The network is constantly being extended after careful selection of new and evaluation of existing sites. It is growing to a partnership of largely independent partners that are linked together by the goal of intensified emerging infectious disease control.

TropNetEurop is designed to add complementary activities to the current surveillance measures of the National Public Health Services and to provide an additional layer of international surveillance effort that is currently not pursued. Data derived from travellers, immigrants, and asylum seekers

seen at infectious disease clinics are currently not recorded on a regular, standardised basis. Especially the latter group - which contains a large number of individuals with an exceedingly high risk for infectious diseases - escapes current surveillance measures because its members are frequently seen in specialised institutions. Therefore, TropNetEurop augments and not duplicates the activities of the existing National Health Services. Strengthening of local and state health department infrastructure and communication capabilities primarily enhances the reporting of domestically transmitted reportable infectious diseases. Once fully functional, TropNetEurop will capture a wide array of "exotic" infectious diseases, which, while sometimes notifiable (e.g. malaria), are notoriously under-reported. Due to the enhanced reporting method by electronic media, the fast detection of infectious disease trends will become possible. First monthly, later weekly transmission of anonymized patient and laboratory data to the central database will assure timely detection of sentinel events. The comprehensive collection of data on notifiable and not-notifiable infectious diseases in travellers makes it possible to identify needs for further surveillance and investigation and provides the potential case-control studies by identification of specific risk factors. Furthermore, advantages and hidden pitfalls of the currently used and significantly diverging systems of notifiable diseases in Europe can be evaluated by TropNetEurop.

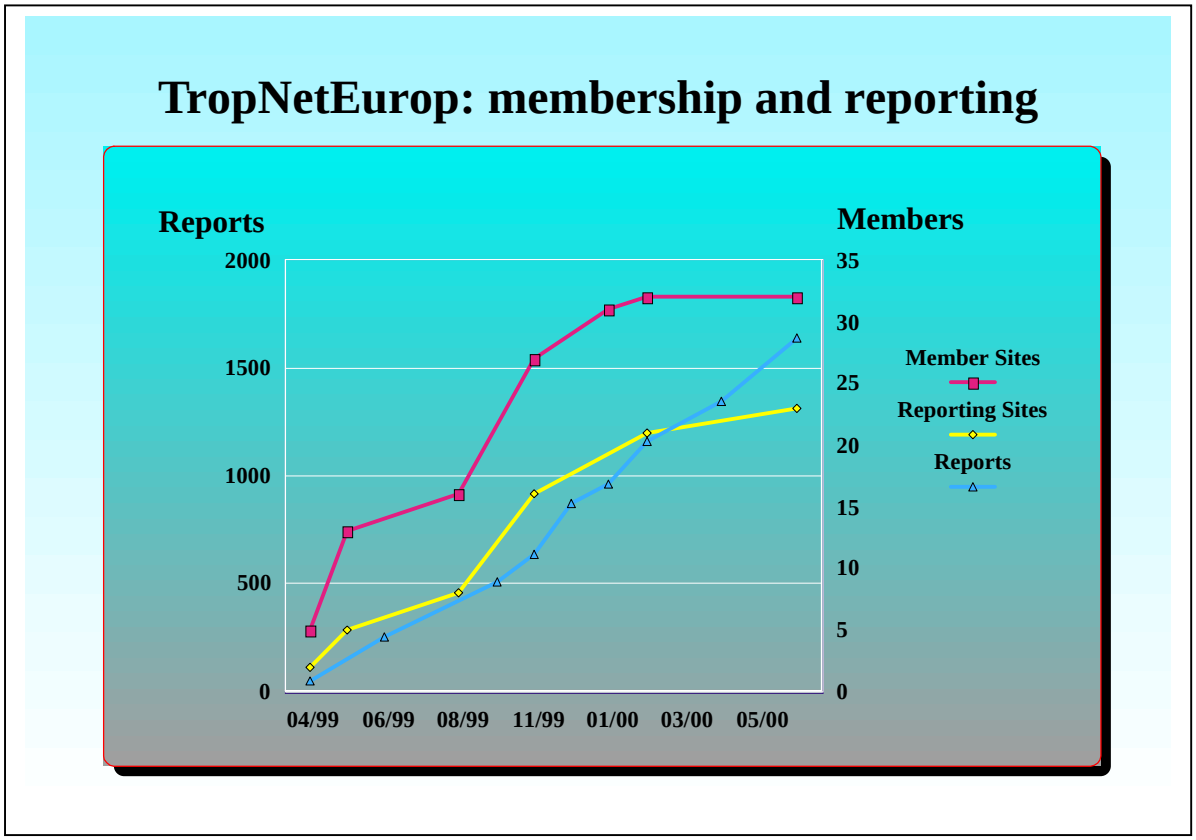
All participating sites receive regular epidemiological information derived from the collected data and also have the opportunity to report patients. Vigilance within the network towards imported infectious diseases is increased, Subsequently, the traveller might well be seen as a "canary" bird:. an indicator of outbreaks going otherwise unnoticed in host countries of travel. Detection of even single patients with a disease from a geographically unexpected area or of small numbers of patients with similar unusual events might have immediate scientific significance. Apart from gathering of information and distribution of analysis, the network serves an important purpose as platform for scientific multi-centre studies on topics that cannot be investigated sufficiently by single institutions. Participating laboratories will be selected from the membership of the network. It is anticipated that all required specimens will be submitted directly to the appropriate laboratory with reporting back to both the submitting site and the co-ordinating centre.

For the start of the network, a set of three specific surveillance projects on the epidemiology of malaria, schistosomiasis and dengue fever in travellers have been chosen:

- *Malaria* is obviously one of the most important imported diseases, causing high morbidity among European travellers. A thorough recording of epidemiological and clinical aspects of imported malaria will certainly be helpful in detecting new outbreaks and areas of developing drug resistance and will trigger further planning further prevention strategies.
- *Schistosomiasis* is currently not reported in any European public health system. Still, this infection appears to be surprisingly common among returnees from endemic areas. The infection can easily be prevented by avoiding exposure. More information about epidemiological details in travellers will certainly be helpful to decrease the number of cases.
- Without any doubt, *dengue fever* is one of the emerging infectious diseases with world-wide impact. Numbers of imported dengue cases into Europe are unknown and management is far from standardized. More information is urgently needed in order to understand the epidemiology of the disease in travellers.

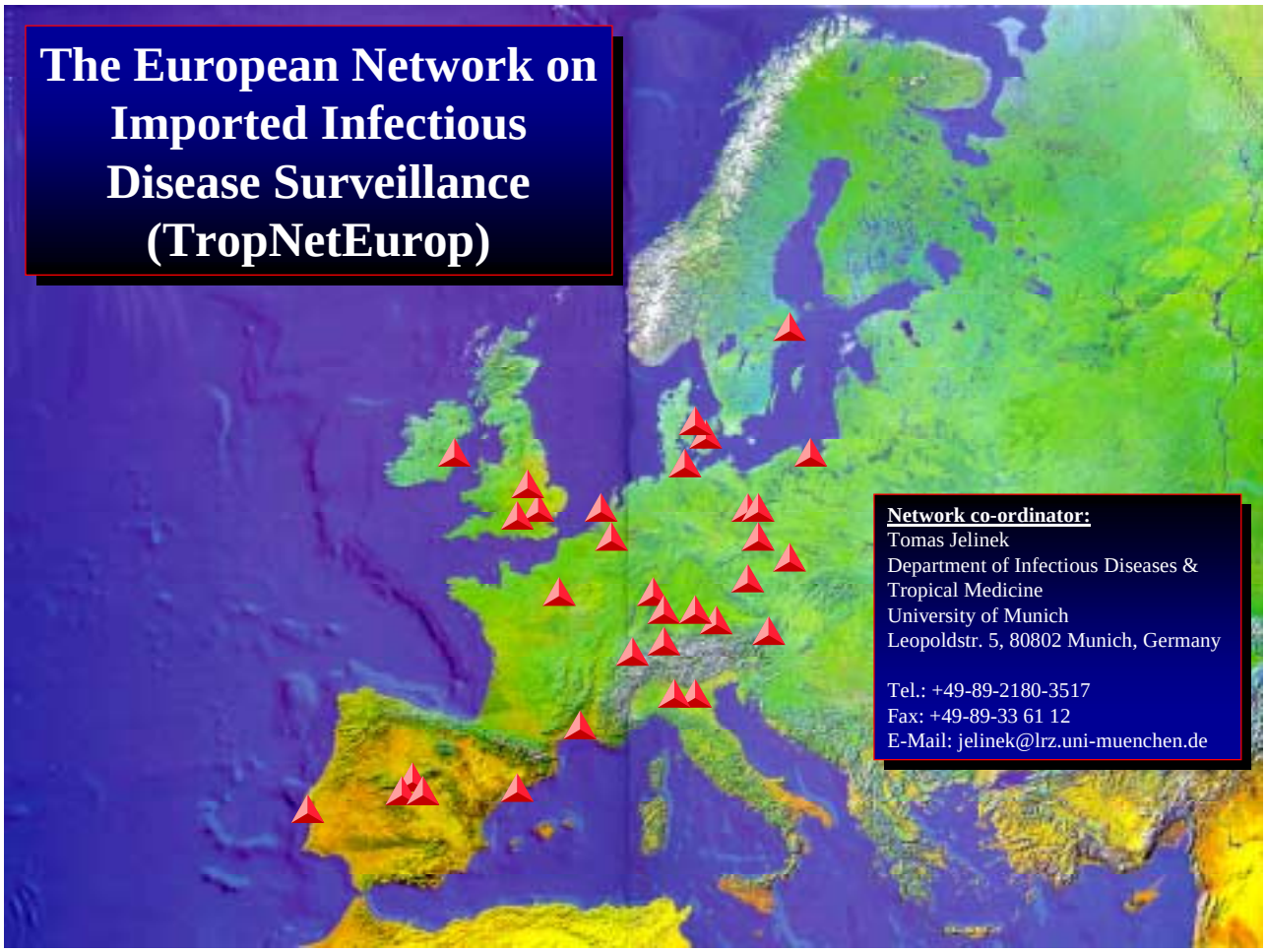
"Past deeds and present challenges": current situation of TropNetEurop

TropNetEurop has started in February, 1999 with few selected members of TropMedEurop, the European Association for Tropical Medicine. From the beginning, support has been surprisingly strong and it has been very easy to recruit new member sites. Considering that only 3 diagnoses are reported and that the network has still not found an equilibrium of reporting an member sites, the number of reported patients within one year is very high.



Currently, recruitment of new member sites has not stopped. We are trying to interest all major European "centres of excellence" on Imported Infectious Diseases for our network and we are trying to cover "empty or under-represented areas (e.g. Scandinavia, France, Greece, Eastern Europe). However, we are also trying to interest all members within TropNetEurop to participate in reporting and hope to achieve an reporting rate near 100% within this year. Only active sites make an active network!

The European Network on Imported Infectious Disease Surveillance (TropNetEurop)



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TropNetEurop: current situation

- **Partner sites: 32 (45,000 patient encounters/ year)**
- **Reporting sites: 23 (71.9%)**
- **Data base: 1639 entries**
- **Reported diseases:**
  - **Malaria**
  - **Schistosomiasis**
  - **Dengue fever**
- **Reporting: standardized questionnaire**
- **Clinical trials:**
  - **Evaluation of malaria dipstick tests**
- **Funding: None!**

Official initiative of TropMedEurop

Co-operation with CDC, Atlanta

Co-operation with ISTM

Contacts to EC and WHO

Member sites of TropNetEurop:

No	Institution	Site Director
1	Div. of Infectious Diseases, Tropical Medicine and AIDS, Travel Immunization Clinic, Academic Medical Center, Amsterdam, The Netherlands	Dr. F. Cobelens
2	Prins Leopold Instituut voor Tropische Geneskunde, Clinical Services, Antwerp, Belgium	Dr. J. Clerinx
3	Sección de Medicina Tropical, Hospital Clinic, Barcelona, Spain	Prof. M. Corachán
4	Swiss Tropical Institute, Basel, Switzerland	Dr. C. Hatz
5	Institut für Tropenmedizin, Berlin, Germany	Prof. U. Bienzle
6	Medizinische Klinik mit Schwerpunkt Infektiologie, Charite/Campus Virchow-Klinikum, Berlin, Germany	Dr. M. Grobusch
7	Clinica di Malattie Infettive e Tropicali, Universitá di Brescia, Italy	Prof. F. Castelli
8	Centre of Medical Parasitology, University of Copenhagen, Denmark	Prof. I. Bygbjerg
9	Tropical Medical Bureau, Dublin	Dr. Graham Fry
10	Institute of Maritime and Tropical Medicine, Gdynia, Poland	Prof. A. Kotlowski
11	Institute de Médecine Sociale et Préventive, Centre Médical Universita, Geneve, Switzerland	Prof. L. Loutan
12	Imperial College School of Medicine, Dept of Infection & Tropical Medicine, Harrow, Middlesex, UK	Prof. G. Pasvol
13	Tropenmedizin, Abteilung Tropenhygiene und Offentliches Gesundheitswesen, Universitatsklinikum Heidelberg, Germany	Dr. T. Junghanss
14	Epidemiological Services, Military Medical Academy, Hradec Kralove, Czech Republic	Dr. J. Beran
15	Hvidovre Hospital, Dept. of Infectious Diseases, Hvidovre, Denmark	Dr. J. Iversen
16	Schiffahrtmedizinisches Institut der Marine, Infektion-, Tropen- und Präventivmedizin, Kronshagen, Germany	Dr. G. Boeken
17	Städtische Kliniken "St. Georg", Leipzig, Germany	Dr. M. Schulze
18	Universidade Nova de Lisboa, Instituto de Higiene e Medicina Tropical, Lisbon, Portugal	Prof. J. Costa
19	Hospital for Tropical Diseases Travel Clinic, London, UK	Dr. R. Behrens
20	Microbiologia Clinica, Ctra. de Meco, Alcala de Henares, Madrid, Spain	Dr. J. Cuadros
21	Servicio de Microbiologia Clinica, Unidad de Enfermariades Infecciosas, Hospital General Gregorio Maranon, Madrid, Spain	Dr. P. Martin-Rabadan
22	Tropical Medicine & Clinical Parasitology Unit, Infectious Diseases - Microbiology Department, Hospital Ramon y Cajal, Madrid, Spain	Prof. R. Lopez-Velez
23	Centre de Formation et de Recherche en Médecine et Santé Tropicale, Faculté de Médicine, Marseille, France	Prof. J. Delmont
24	Department of Infectious Diseases & Tropical Medicine, University of Munich, Germany	Dr. T. Jelinek

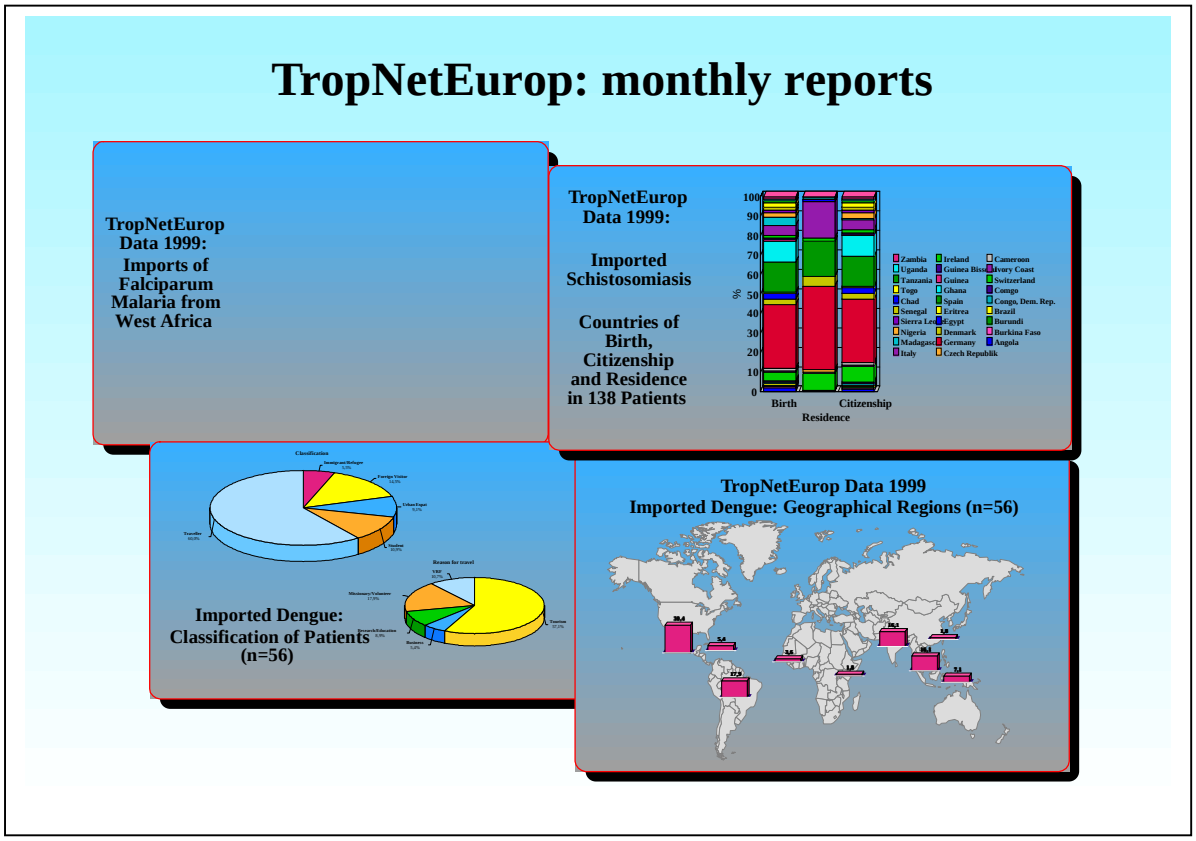
Institutions and partners of TropNetEurop (continued)		
No	**Institution**	**Site Director**
25	The Centre for Tropical Medicine, John Radclif Hospital, Oxford, UK	Prof. D. Warrell
26	Centro per le Malattie Tropicali, Ospedale S. Cuore, Negrar (Verona), Italy	Dr. Z. Bisoffi
27	Institut de Medicine et Epidemiologie Africaine, IMEA, Hôpital Bichat - Claude Bernard, Paris, France	Prof. J.P. Coulaud
28	Tropical Medicine Laboratory, Praha, Czech Republic	Dr. I. Rubik
29	Karolinska Hosiptal, Department of Medicine, Unit of Infectious Diseases, Stockholm, Sweden	Prof. S. Britton
30	Institut für Tropenmedizin, Eberhard-Karls-Universität Tübingen, Germany	Prof. J. Knobloch
31	Sektion Infektionskrankheiten, Universität Ulm, Germany	Prof. P. Kern
32	Institut für Spezifische Prophylaxe und Tropenmedizin, Universität Wien, Austria	Prof. H. Kollaritsch

TROPNETEUROP: PATIENT ENCOUNTERS AND PATIENT REPORTS

N°	Town	Site Manager	In- and outpatients [per year]	Pre-travel advises [per year]	Reported patients [total]
1	**Amsterdam**	F. Cobelens	1000	12000	0
2	**Antwerp**	J. Clerinx	7700	12000	0
3	**Barcelona**	M. Corachan	1400	3500	154
4	**Basel**	C. Hatz	2500	10000	28
5	**Berlin (1)**	U. Bienzle	4000	27000	103
6	**Berlin (2)**	M.P. Grobusch	400	0	115
7	**Brescia**	F. Castelli	400	30	158
8	**Copenhagen**	I. Bygbjerg	300	2000	83
9	**Dublin**	G. Fry	1200	12000	14
10	**Gdynia**	A. Kotlowsky	7000	6000	54
11	**Geneva**	L. Loutan	300	7000	0
12	**Harrow, Middlesex**	G. Pasvol	600	0	0
13	**Heidelberg**	T. Junghanss	?	?	27
14	**Hradec Kralove**	J. Beran	200	1200	31
15	**Hvidovre**	J. Iversen	200	300	0
16	**Kronshagen**	G. Boecken	500	1000	0
17	**Leipzig**	M. Schulze	200	4000	3
18	**Lisbon**	J.V. Costa	400	3100	0
19	**London**	R. Behrens	5000	8000	117
20	**Madrid (1)**	J. Cuadros	100	75	15
21	**Madrid (2)**	P. Martin-Rabadan	?	?	0
22	**Madrid (3)**	R. Lopez-Velez	?	?	31
23	**Marseille**	J. Delmont	2700	1700	39
24	**Munich**	T. Jelinek	1700	13000	241
25	**Oxford**	D. Warrell	?	?	0
26	**Negrar (Verona)**	Z. Bisoffi	2000	25000	128
27	**Paris**	J.P. Coulaud	1500	6500	154
28	**Prague**	I. Rubik	?	?	32
29	**Stockholm**	S. Britton	600	30000	19
30	**Tübingen**	J. Knobloch	1000	6000	43
31	**Ulm**	P. Kern	?	?	4
32	**Vienna**	H. Kollaritsch	200	22000	46
	TOTAL		**44800**	**227730**	**1639**

Monthly reports

Monthly reports on accumulated and analysed data have been mailed on (almost) monthly basis since April, 1999. Outfit and content of the reports have changed, feedback was overwhelmingly positive. TropNetEurop members receive the reports as WinWord-files which is supposed to make use of the graphics in lectures and presentations easy. Every graphic can be copied to any presentation programme (such as PowerPoint) and modified for further use. As data in the data base are owned by all TropNetEurop members, so are reports and their content. Members can use he material without further permission, yet acknowledgement of the network is encouraged.



Material from monthly reports has been used for presentation of TropNetEurop and its results at conferences:

Posters and Oral presentations were submitted and presented at

- 2. European Conference on Travel Medicine, Venice, March, 29th-31st, 2000
- 5. German Conference for Infectious Diseases and Tropical Medicine, Munich, November, 24th-27th, 1999

At latter conference, our poster on imported malaria was awarded the price for the best poster presentation. All contributing site managers have been named as authors.

Poster and oral presentations have been submitted at:

- 2nd International Conference on Emerging Infectious Diseases, Atlanta, July, 16th-19th, 2000
- Oxford 2000: New challenges in tropical medicine and parasitology, Oxford, September, 18th-22nd, 2000
- 49th Annual Meeting of ASTMH, Houston, October, 29th-November, 2nd, 2000

Material in print:

- Jelinek T, Corachan M, Grobusch M, Harms-Zwingenberger G, Kollaritsch H, Richter J, Zieger B for TropNetEurop. Emergence of Falciparum malaria among European tourists to the Dominican Republic. *Emerging Infect Dis*

Material in preparation:

- Jelinek et al. Imported malaria in immigrants and European travellers.
- Gjörup et al. Malaria in elderly patients.
- Jelinek et al. Imported Schistosomiasis.

IMPORTED MALARIA IN EUROPE: SENTINEL SURVEILLANCE DATA 1998-1999

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Abstract

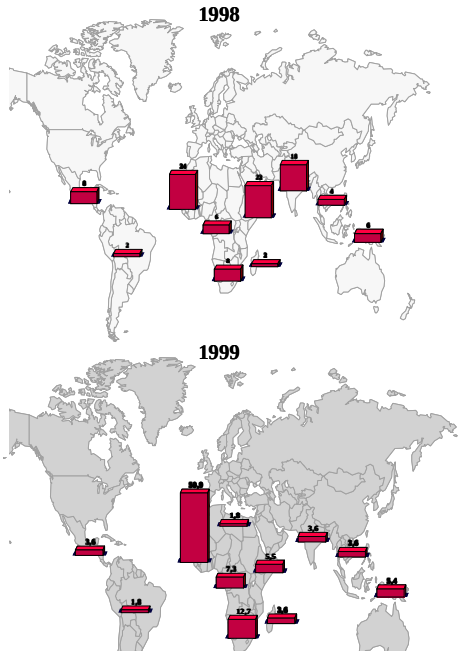
Malaria is one of the most important imported diseases, causing high morbidity among European travellers. A thorough recording of epidemiological and clinical aspects of imported malaria will certainly be helpful in detecting new outbreaks and areas of developing drug resistance and will trigger further planning further prevention strategies. Surveillance has been started within the framework of a European network for imported infectious disease surveillance. Data from 1999 were collected prospectively and complemented by retrospective data from 1998, one of the strengths of the network being the timely reporting of sentinel events. An overview of current data on epidemiological and clinical features of imported malaria will be presented.

Introduction

TropNetEurop, a European network for sentinel surveillance of infectious diseases, has been launched in February 1999. Twenty-six infectious disease clinics from most European countries are currently participating in this scheme. Targets are: a) to identify emerging pathogens of public health importance by sampling returning international travellers, immigrants, and foreign visitors; b) to identify trends in specific infectious agents, risk factors, clinical outcomes, and microbial resistance patterns in this population; c) to develop innovative, efficient, and effective data collection and analysis methods for the rapid identification of emerging infectious diseases; d) to develop strategies for the delivery of information on relevant public health prevention and containment measures to practitioners, to governmental bodies, and to the public; e) to provide grounds for cluster investigation and intervention strategies by Public Health Authorities; f) to foster epidemiological and clinical teaching of infectious diseases within Europe; and g) to assist the international exchange of data and research on emerging and re-emerging infectious diseases.

Species and outcome	1998 (n=50)		1999 (n=55)	
	n	%	n	%
P. falciparum	27	54	41	74.5
P. vivax	19	28	9	16.4
P. ovale	2	4	4	7.3
P. malariae	2	4	0	0
Mixed Infections (*P. falciparum* + *P. vivax*)	2	4	0	0
unspecified			1	1.8
Complicated malaria	2	4	2	3.6

Geographical regions in 1998 (n=50) and in 1999 (n=55)



	1998		1999	
		%		%
M	37	74	37	67.3
F	13	26	18	32.7
Age average [y]	36		33	
Age median [y]	33		33	

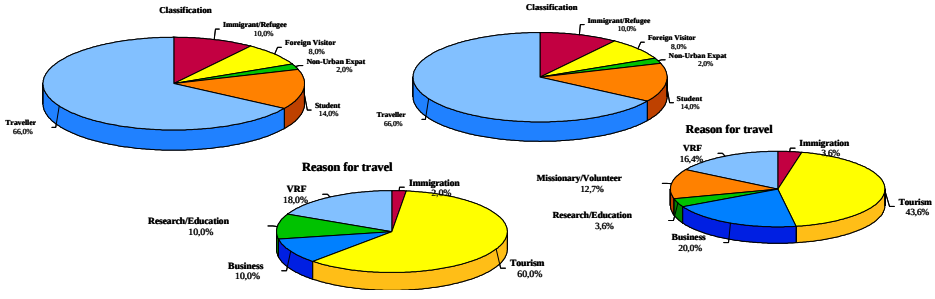
Pre-Travel advice	1998		1999	
		%	n	%
Yes	10	20	16	29
No	32	64	32	58.3
No data	8	16	7	12.7
Inpatient	34	68	39	71

Type of symptoms (multiple entries possible)

Symptom	1998		1999	
	n=	%	n=	%
Fever	50	100.0	53	96.4
Fatigue	3	6.0	24	43.6
Skin	1	2.0	4	7.3
Resipiratory	0	0.0	1	1.8
Headache	26	52.0	28	50.9
Diarrhoea	5	10.0	5	9.1
ENT	0	0.0	1	1.8
Genitourinary	4	8.0	1	1.8
Neurologic	0	0.0	3	5.5
Psychologic	1	2.0	1	1.8
Asymptomatic	0	0.0	0	0.0
Other	12	24.0	9	16.4

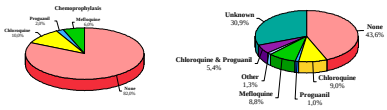
Classification of patients in

1998 1999



Chemoprophylaxis

1998 (n=50) 1999 (n=406)



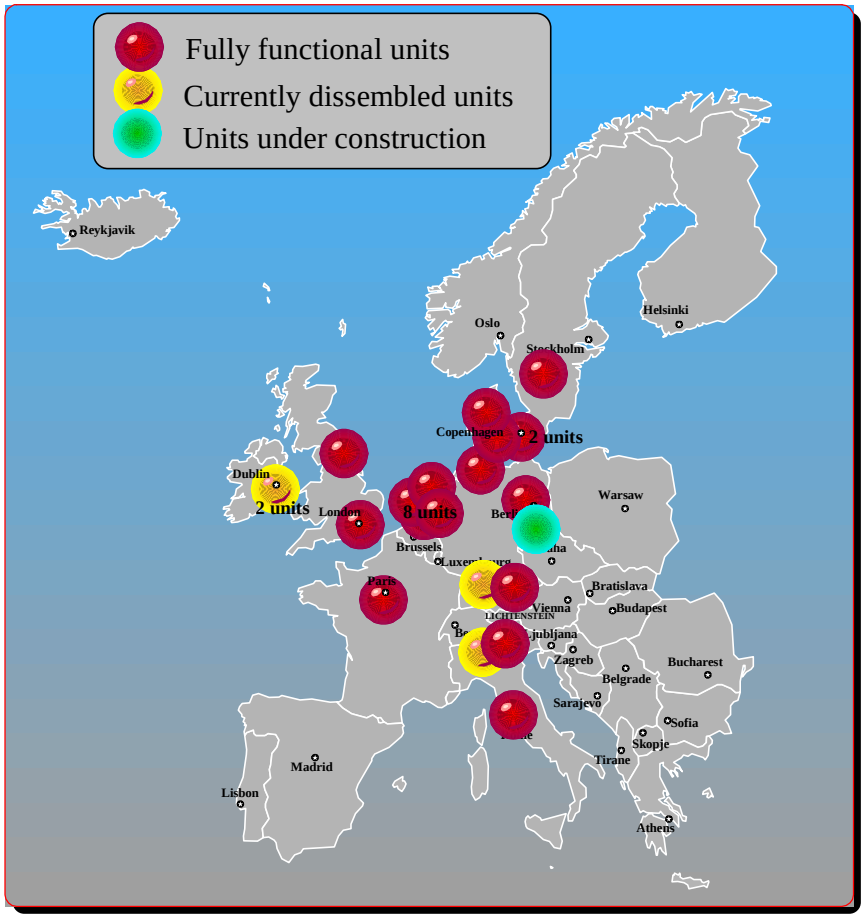
Conclusions

Malaria is certainly an imported emerging infectious disease to be reckoned with in Europe. Occurrence of complicated malaria and death due to lack of awareness among physicians and travelers poses still a significant risk. Most cases of imported malaria could have been avoided by intake of adequate chemoprophylaxis.

Special reports of TropNetEurop included:

- Availabiliy of isolation units for patients with hemorrhagic fever in Europe
- Outbreak of falciparum malaria among European travellers to the East coast of the Dominican Republic

TropNetEurop survey: availability of isolation units for patients with haemorrhagic fever in Europe



Efficacy and potential usefulness of TropNetEurop were exemplary demonstrated by detection of an outbreak of falciaprum malaria among European returnees from the East coast of the Dominican Republic in December 1999. This area has been non-endmic for decades and conseqeuntly, no malaria prophylaxis was redcommended throughout Europe. In November and December 1999, 10 patients with manifestation of falciparum malaria upon return from the Dominican Republic were reported within TropNetEurop. The analyzed reports were passed to national public health organizations in Europe and the Dominican Republic, the CDC, and distributed widely through the epidemiological internet tool “ProMed”. As conseqeunce, authorities in the Domician Republic were able to recognize an severe outbreak of falciparum amalria among their own population at the east coast of the country, brought in by infected, semi-immune construction workers from Haiti. Timely reaction to the outbreak and implementation of prevention measures (spraying, adequate supply of antimalarials, distribution of bed nets) ensured the rapid decline of cases in January-February 2000. Changes in the recommendations for malaria prophylaxis in most countries of the western world ensured awarenes among travellers and rapid decline of cases among foreingners visiting the area.

TropNetEurop Alert: Falciparum Malaria from Dominican Republic

Nov., 27th, 1999:
- first patient with falciparum malaria from Punta Cana diagnosed in Munich;
- information to all TropNetEurop members and observers and request for reports of similar cases

Dec., 2nd, 1999:
- report on 5 cases within the network, information of all members and observers;
- messages to ProMed and national public health organisations

Dec., 3rd, 1999:
- report on 2 more cases within the network

Dec., 12th, 1999:
- posting of an alert in ProMed

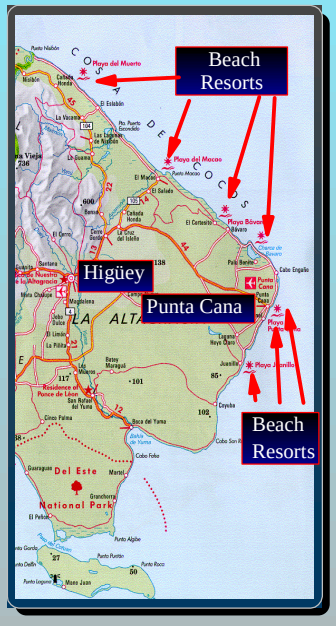
Dec., 16th, 1999:
- report on 2 more cases within the network

Dec., 17th, 1999:
- revised CDC guidelines for malaria prophylaxis in DomRep are posted;
- TropNetEurop is officially introduced in a ProMed posting

Dominican Republic: tourism centres in the East and malarious areas

TropNetEurop Alert: Patients with Falciparum Malaria from Dominican Republic

#	Sex	Age	Nationality	Month	Journey	Therapy
1	F	26	DE	06/99	14 days in Punta Cana	Chloroquine
2	M	28	DE	11/99	14 days in Punta Cana (honey moon with #3)	Mefloquine
3	F	28	DE	11/99	14 days in Punta Cana (honey moon with #2)	Mefloquine
4	F	34	DE	11/99	7 days in Punta Cana	Mefloquine
5	F	28	ES	11/99	7 days in Punta Cana	Chloroquine
6	F	45	DE	11/99	14 days in Punta Cana	Atovaquone + Proguanil
7	M	27	DE	11/99	flight assistant, overnight stays in Puerto Plata (October) and in Punta Cana (November)	Quinine
8	F	30	DE	11/99	10 days in Punta Cana	Mefloquine
9	F	47	AU	12/99	14 days in Punta Cana	Quinine
10	M	34	ES	12/99	10 days East Coast	Quinine + Doxycycline



Country codes: DE = Germany, ES = Spain, AU = Austria

Proposed structure of the network

TropNetEurop is no society but a loose (tough successful!) association of interested clinics. Yet, a few rules of conduct and by-laws may be helpful for the future. Points listed below are for discussion at the workshop only. A final version based on the decisions during the workshop will be distributed afterwards.

A) Membership at TropNetEurop

- Membership of clinical "centre of excellence" dealing with imported infectious diseases within Europe is actively encouraged
- New members are required to agree to start reporting of patients as soon as possible
- Membership at TropNetEurop is voluntary, free and can be terminated by the member site at any time
- Exclusion of member sites has to be decided by the steering committee

B) Management structure

- Every member site names one site manager who represents it at TropNetEurop
- Every member site has one vote at TropNetEurop meetings, no matter how many reports were submitted
- The steering committee consist of five members: the network coordinator plus four representatives of other sites
- The network coordinator is directly elected by the site representatives for two years
- Like the coordinator, steering committee members are directly elected by the site representatives for two years
- Representatives of members sites meet once per year
- Membership decides on all fundamental issues of TropNetEurop (majority vote), e.g. reporting of additional diseases, data merger with other networks, etc.
- The steering committee controls the coordinator, is responsible for "foreign policy" of the network, decides on structural changes (e.g. recruitment of new member sites, uptalke of research projects, etc.)
- The network coordinator fulfils largely organizing functions, e.g. execution of decision of steering committee and membership, maintenance of communication, etc.

C) Ownership of data

- Reported data are owned by all reporting members
- Coordinator has to ensure anonymity and proper usage
- Data can be requested by every reporting member for specific research issues

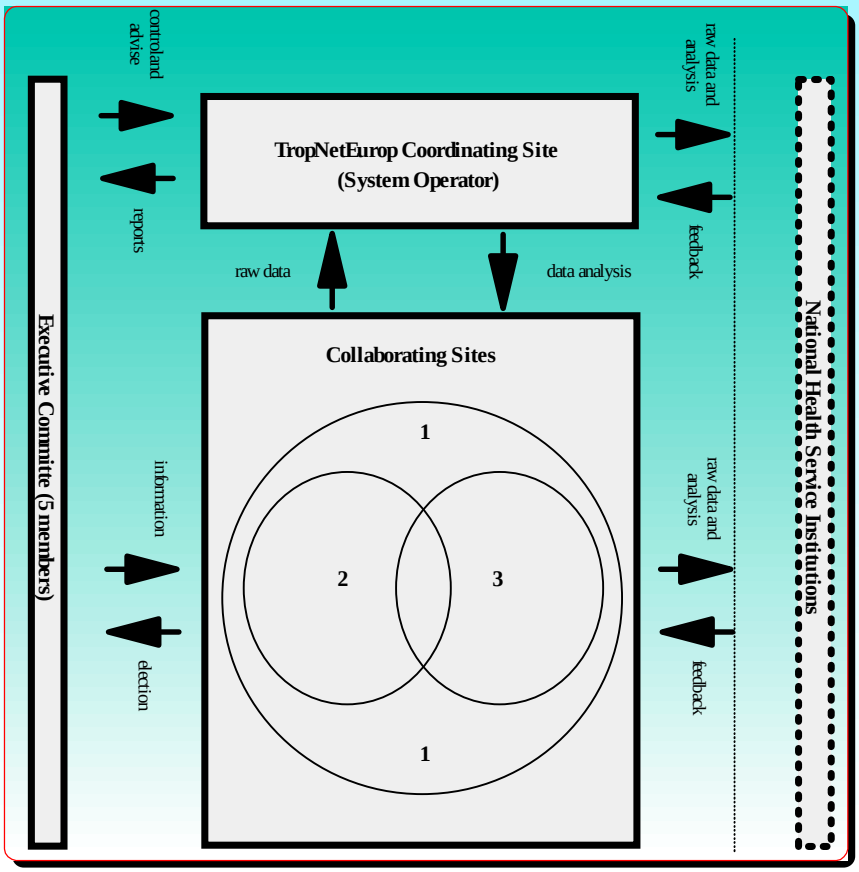
D) Publication of results

- Upon publication of results derived from data of the TropNetEurop data base, all site managers contributing to that specific set will be named as authors (reflecting the number of submitted reports in descending order except the first author who is the person writing the publication)
- All prospective authors shall be informed prior to submission of the material

E) Ownership of funds

- Funds obtained by members of TropNetEurop for network-specific research projects are owned and managed by those individuals
- Though the steering committee approves of TropNetEurop projects prior to submission, it has no access to acquired funds

TropNetEurop: networking structure



Legend
1 = Information receiving and occasionally reporting site
2 = Reporting site (regular)
3 = Participation in Research Projects

TropNetEurop: functions within the network

Steering Committee
- Executes decissions of membership
- Controls coordinator
- Foreign policy
- Structural decissions, e.g.
  - recruiting of new member sites
  - changes in questionnaire
  - uptake of research projects

controls

reports

Coordinator
- Executes decissions of membership and Steering Committee
- Ensures communication within the network
- Maintains data base
- Produces reports
- Ensures anonymity of data

reports

elects
controls

reports

elects
controls

Membership
- Fundamental decissions, e.g.
  - reporting of additional diseases
  - data merger with other networks, etc.
  - elects steering committe
  - elects coordinator

Changes in reporting

Electronic reporting shall become the standard of TropNetEurop! Please refer to the attached CD-Rom for all necessary material. However, the faxable form will be kept for emergencies and as introductionary method for new sites.

Suggested changes in the current questionnaire include:

- Closed (Yes/No) and open questions for “Complications” and “Death”
- Abolishment of “History of Previous Travel”
- Change in History of Recent Travel: the questionnaire now asks for all diseases relevant to this visit at the hospital (no matter how long ago the journey was done)

Please see next page for draft of new questionnaire! The electronic version will be adapted accordingly.

Surveillance Questionnaire for Imported Infectious Diseases

(Fax to 0049-89-33 61 12, att. Dr. T. Jelinek)

Clinic (Town)	Patient ID	Sex	Age	Country of birth	Residence	Citizenship	
		$_1$M $_2$F					$_1$Inpatient $_2$Outpatient

If not born in Europe, indicate the date of first arrival	DD/MM/YY	Date Initial Visit	Updated	Pre-Travel counselling by health care provider? $_2$ Yes $_1$No $_3$Don't know

HISTORY OF RECENT TRAVEL
List, in order, journeys to all countries relevant for this visit

			Trip Began DD/MM/YY	Trip Ended DD/MM/YY

Patient Classification
$_1$Immigrant / Refugee
$_2$Foreign Visitor
$_3$Urban Expatriate
$_4$Non-Urban-Expatriate
$_5$Student
$_6$Traveller
$_7$Military

Reason for most recent travel
$_1$Immigration
$_2$Tourism
$_3$Business
$_4$Research / Education
$_5$Missionary / Volunteer / Humanitarian Aid
$_6$Visiting Relatives / Friends (VRFs)

Chief complaint (CHECK ALL THAT APPLY)
$_1$Fever
$_2$Fatigue
$_3$Skin
$_4$Respiratory
$_5$Headache
$_6$Lymphadenopathy
$_7$Musculoskeletal
$_8$Diarrhoea
$_9$ENT
$_{10}$Genitourinary
$_{11}$Neurologic
$_{12}$Psychologic
$_{13}$Vomiting
$_{14}$ Asymptomatic Screening
$_{15}$Other: _____

ONSET OF SYMPTOMS (before initial visit) : _____ days / weeks / months

Malaria Prophylaxis
Chemoprophylaxis $_0$None $_1$Chloroquine $_2$Proguanil $_3$Mefloquine $_4$Doxycycline $_5$Other: _____
Compliant $_2$Yes $_1$No

Diagnoses

Dx#	Working Diagnosis	Wkg Dx Status	Final Diagnosis	Final Dx Status
1		C P S E T		C P S U
2		C P S E T		C P S U
3		C P S E T		C P S U
4		C P S E T		C P S U
Legend: C= Confirmed; P = Probable; S = Suspected; T = Status post; E = Exclusion of; U = Unknown Etiology				

Most likely place of exposure: _____

Treatment

Drug	Resistance?
	$_2$Yes $_1$No
	$_2$Yes $_1$No
	$_2$Yes $_1$No
	$_2$Yes $_1$No

COMPLICATIONS? $_2$Yes $_1$No If Yes, which? _____
DEATH? $_2$Yes $_1$No If Yes, why? _____

Reporting of additional diseases will increase scope of the network and, through reporting and publications, will therefore increase public (and donor!) awareness of the network.

Proposed diagnosis for additional reporting within TropNetEurop:

- Legionellosis
- Leishmaniasis
- Rickettsial Infections
- Typhoid and Paratyphoid Fever
- Filariasis
- Mycobacterial infections
- Amoebic Liver Abscess

All selected diagnosis are relatively rare and will (hopefully) not increase the work load unseemly. Yet, increased coverage of imported diseases will provide the network with additional material for reports, public announcements (and thus, advertising for the network!) and, last not least, opportunities for research projects and publications.

Electronic communication

Communication within TropNetEurop has gone a long way during the last year. Current standards include:

- A moderated mailing list for all members that ensures reception of all postings within the network (see <http://www.egroups.com/group/tropneteurop>)
- A mailing list for friends and observers of TropNetEurop that provides information on selected topics
- Construction of a web page (see <http://www.tropnet.net/>)
- Possibility for reporting by electronic questionnaire (either MS Access 2000 or 97)

The CD-Rom added to this booklet offers following material:

- Presentation material on TropNetEurop ("TropNetEurop Presentation"), including
  - the introductionary text of this booklet "About TropNetEurop" (MS WinWord)
  - the TropNetEurop Logo (MS PowerPoint)
  - the Workshop Poster (MS PowerPoint)
  - a slide presentation of TropNetEurop containing 25 slides (MS PowerPoint)
- Material for electronic reporting ("Data Entry"), including
  - the electronic questionnaire (MS Access 2000 and 97)
  - a "Read me" file explaining the use of the questionnaire
  - our questionnaire manual (same version for fax and electronic reporting)
  - coding lists for countries, drugs, diagnoses and geographic regions (electronic questionnaire only)
- A freeware version of WinZip for opening our reports
- A freeware version of Adobe Acrobat Reader for reading our reports at the TropNetEurop web page

Financing opportunities

For long-term survival of the network, financial support of our efforts will be crucial. As yet, TropNetEurop continues to be a largely un-funded initiative, drawing support from the enthusiasm of its members.

Following support has been acquired by the co-ordinator during the first year:

Source	Nature of Funding
Friedrich Baur Foundation	Travel grant for proposed application at Biomed5
Dr. Democh Maurmaier Foundation	Costs for one junior doctor (AiP) and one student (one year)
Deutsche Forschungsgemeinschaft	Partial coverage for workshop costs
Bayerisches Staatsministerium für Arbeit und Sozialordnung, Familie, Frauen und Gesundheit	Partial coverage for workshop costs
Aventis Pasteur MSD	Partial coverage for workshop costs
SmithKline Beecham Pharma	Partial coverage for workshop costs

Overall, travel and organizing costs during the first year were clearly higher than support gained for TropNetEurop!

Rejected proposals:

Donor	Application
NATO Science Programme	Infrastructural grant for networking
EC, DGXII	Networking grant
EC, DGV, Biomed5	Cluster proposal for TropNetEurop

Pending proposals:

Donor	Application
Dr. Democh Maurmaier Foundation	Continuation of funding for staff support

Planned proposals:

Donor	Application
EC, DG Public Health	Networking grant (2001?)
EC, DGV, Biomed5	Modified cluster proposal for TropNetEurop (Deadline Oct., 11th)

Biomed5
The current EC programme of most interest to TropNetEurop is following Biomed5 –component
QUALITY OF LIFE PROGRAMME
CALL OF 15 DECEMBER 1999
FIXED DEADLINE CALL FOR PROPOSALS
for collaborative RTD actions, including INCO bursaries
Call identifier : 1999/C 361/06

Details of the work programme and guidelines for proposals can be downloaded at <http://www.cordis.lu/life/calls/200001.htm>.

EC definition of clusters is as follows:

Clusters

A cluster is a defined group of RTD projects. Its aim is to guarantee complementarity among projects, to maximise European added value within a given field and to establish a critical mass of resources at the European level.

An integrated approach towards research fields and projects financed is needed to solve complex multidisciplinary problems effectively. Clusters reflect this problem-solving approach. Indeed, in a cluster, projects are joined together because they complement each other in addressing major objectives in the context of a key action or a generic activity (sometimes even across different key actions or Specific Programmes). Clusters are expected to optimise scientific networking, management, co-ordination, monitoring, the exchange of information and, on voluntary basis, the exploitation and dissemination activities. The cluster may thus become a natural process to generate European added value, wherever it makes sense, beyond the limited resources of an isolated project.

All types of projects can be assembled and integrated within a cluster, including those funded by different EU RTD activities (key action, generic activity, infrastructure). By the same token, and as part of an overall European approach, relevant activities under other research frameworks (notably EUREKA, COST) could also be taken into account whenever this can reinforce synergy. Clusters will be set up through thematic networks or complementary clauses.

Conclusion:
Funding for all activities of TropNetEurop and especially for complete reporting requires large amounts of money. Only EC funding will provide us with an opportunity to compensate financially for reporting. Yet, other sources offer opportunities for funding of selected areas of TropNetEurop. Other European and international donors may be interested in research possibilities within the network. National sources may finance selected ventures, too.

As TropNetEurop can offer increasingly results that have been reached without significant support from outside sources, it will become easier to convince donors that this network may achieve much more when adequately funded.

TropNetEurop and other networks: modes of interaction

Informative and helpful contacts to several networks have been established. Among them is the **European Network for the Diagnostics of "Imported" Viral Diseases** (ENIVD). Contacts to this network will provide excellent opportunities for research initiatives on imported viral diseases and access to high quality diagnostic. Details of the networks can be checked at < http://www.enivd.de/>. The manifest of ENIVD as downloaded from their web page can be found below:

Manifest of the
European Network for the Diagnostics of
"Imported" Viral Diseases (ENIVD)

Through Ebola epidemics in Zaire and Gabon over the past two years, we all became aware that dangerous infections could be imported to Europe in a very short time. Because of such emerging problems and due to the great number of viral pathogens it is necessary to establish a European network of collaboration in this field. The improvement of diagnostics of these "imported" and emerging virus infections is the most important step in detecting the pathogens and dealing with them. Therefore there should be a European collaboration in the area of diagnostics of these virus infections.
In four meetings scientists from laboratories working in the field of diagnostics of "imported" viral diseases in the United Kingdom, Sweden, France, Greece, Spain, Denmark, Netherlands, Belgium, Portugal, Finland, Italy and Germany have started to build up a network to improve the diagnostics of "imported" viral infections and have worked out objectives to be addressed in this collaboration:

1. Build a network of European laboratories working on diagnostics of "imported", rare and emerging viral infections. Provide mutual help in the exchange of diagnostic samples, i.e. sera, viruses, methods, and information in order to improve diagnostics
2. Identify those viral infections more likely to be imported and co-ordinate the objectives and identify laboratories, capable and willing to perform the rapid diagnostics (<24h) of an acute case, suspected to be infected with a viral haemorrhagic fever.
3. Work out recommendations for standardisation and quality control in diagnostics laboratories involved in the diagnostics of such diseases.
4. Identify and operate standard assays according to defined quality control criteria.
5. Optimise limited resources by exchanging reagents, methodologies, and expertise.
6. Encourage regular contact within the network through meetings, exchange and training of laboratory personnel.
7. Open the network for members of other European laboratories.
8. Organise and co-ordinate international activities with the "Surveillance network group", the "Task force on vaccines and viral diseases", or other European or international organisations like WHO and CDC.

For further development and the integration of other European members, the project needs European funding in order to establish the European network and to improve and standardise diagnostic techniques. This will offer an opportunity for technology transfer within the European community and result

in a better and more efficient diagnostics in the individual countries. In the long run, this initiative offers a chance of increasing the awareness of responsible medical institutions in each country of the EU regarding the problem of emerging and re-emerging viral diseases. By creating these surveillance activities, we will be able to better recognise and respond to threatening emerging and re-emerging diseases in the future. In supporting this group of experts, it will be possible to initiate a co-ordinated international effort to deal with these problems. This offers the chance for future interventions and an effective and close co-operation with the WHO, and also for the future implementation of proposed activities.

Another interesting contact has been established to **TropEdEurop**, the training and educational branch of TropMedEurop. This very active initiative provide excellent training opportunities. Details can be downloaded at <http://www.troped.org/>.
The manifest of TropEdEurop as downloaded from their web page can be found below:

Who are we?
TropEdEurop. Is the training and educational branch of TROPMEDEUROP - the association of the Institutes and Schools of Tropical Medicine in Europe. It is the association of 18 institutions active in the field of International Health mainly through training and research from 10 different European countries.
What is our general aim?
TropEdEurop aims to:

Contribute to sustainable human resource development, particularly in low and middle income countries
To promote collaboration and co-ordination between institutions within Europe and between the Northern and Southern hemispheres.

What is our educational aim?
The aim of TropEdEurop is the promotion of excellence in postgraduate education and training in International Health.

This is accomplished by:

Promoting excellence with the specific objectives to:

Establish common standards for quality, contents of the courses.
Set common standards for assessing quality (eligibility and quality criteria).
Stimulate curriculum development, course design and creation of new courses and degree.
Encourage professionalization of teachers through Training of Trainers courses.

Fostering mobility with the specific objectives to:

Promote the use of modular flexible courses and approaches.
Achieve mutual course recognition and student eligibility.
Assist institutions to widen access for students to courses and degrees programmes whilst maintaining quality.
Develop mechanisms for teachers institutional exchange.
Assist student mobility.

Facilitating the exchange of knowledge and skills between students, teachers and institutions with the specific objectives to:

Promote training exchange.
Stimulate the exchange of training materials.
Develop mechanisms, including the use of internet, for training and exchange.

Encouraging interdisciplinary approaches with the specific objectives to:

Include courses from faculties and areas outside the Health/Medicine fields.
Encourage a broad perspective on international health.

Finally, contacts were established to **GeoSentinel**, a mainly US-based sentinel network on imported infectious diseases that has been proposed the global surveillance network of the International Society for Travel Medicine. Following an informative visit in Atlanta in 1999, future collaboration including a possible future data merger were proposed. However, no concrete initiative has materialized, as yet. Information on GeoSentinel is not available on the internet. In the future, some material may eventually be found at the web page of ISTM <http://www.istm.org/>.