

ABSTRACTS BOOK

ULYSSES IN THE THIRD MILLENNIUM

New Trends in Tourism and Medicine

IIND
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ON TRAVEL MEDICINE

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ULYSSES IN THE THIRD MILLENNIUM

Venice, Italy - Fondazione Cini, Isola di San Giorgio

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FOREWORD

What will the travellers of the third millennium be like? What will be their destinations, their aims, their sense of wanderlust and of its place in life? What complex itineraries will they follow over the span of their lifetime? Travel is indeed a metaphor for life. It has a start, it leads somewhere, there are stops along the way, it comes to an end. There is an outbound journey, and there is a journey home.

We have chosen to define the traveller of the future as "The Ulysses of the Third Millennium". We could have used the name of some famous traveller by land, like Marco Polo, or a navigator like Columbus, or an explorer like Livingstone. We have instead chosen this hero of classical Greek legend because, as in Dante's interpretation, Ulysses represents the traveller who journeys in pursuit of virtue and knowledge, the traveller who uses all the resources of his considerable intelligence to overcome every conceivable trial, returning to his homeland to give some kind of sense to his Odyssey accomplished.

To ask what travellers will be like in the third millennium is to ask what Man himself will be like in the third millennium, where and how long humans will live, what their values will be, what rules they will apply to their social coexistence. What dangers will Ulysses encounter in the third millennium? Will biological terrorism, chemical warfare, population explosions, environmental catastrophes, natural disasters and epidemics of emerging or re-emerging diseases supplant the insidious perils of Polyphemus, the Sirens, Charybdis and Scylla, or the sorceress Circe?

What will be the fundamental conquests of medicine, and in what way can they serve the needs of international travellers? What will be the distinctive characteristics of tourism in the new millennium: ecological tourism, tourism for health, or tourism in space?

"The Ulysses of the Third Millennium" is a natural continuation of the March 1998 conference "Mobility and Health: from Hominid Migration to Mass Tourism", also held in Venice, and as in the case of its predecessor the overall aim will be to provide medical providers with cultural instruments to safeguard the health of travellers.

The Conference sees the presence of experts from the World Health Organization, the International Organization for Migration, Centers for Disease Control and Prevention and from many European and non European Universities.

The conference is directed towards healthcare providers and health authorities of European countries at all levels, travel agents and tour operators, maritime and air transport companies, and all other persons with an interest in the topic.

The conference is divided into 24 sessions. The conference is interdisciplinary, and speakers include specialists in medical, social and other relevant sciences. All the themes are addressed from a futurological viewpoint.

Walter Pasini
Conference Chairman

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Emerging Infectious Diseases: Addressing the Challenges

JAMES M. HUGHES, *National Center for Infectious Diseases Centers for Disease Control and Prevention Atlanta, GA, USA.*

Infectious diseases are the leading cause of death worldwide and the third leading cause of death in the United States. Nevertheless, considerable complacency has developed over the past 30 years regarding infectious diseases because of the availability of effective antibiotics and vaccines. In 1992, an Institute of Medicine (IOM) report entitled *Emerging Infections: Microbial Threats to Health in the United States* highlighted this complacency, emphasized the threats posed by infectious diseases, identified the factors that contribute to disease emergence and re-emergence, and stressed the need to heighten vigilance and strengthen disease detection and response capacity.

Outbreaks of hantavirus pulmonary syndrome in the United States, plague in India, Ebola hemorrhagic fever in Zaire and Gabon, leptospirosis in Nicaragua and the United States, H5:N1 influenza in Hong Kong, Nipah virus infection in Malaysia and Singapore, Marburg virus infection in the Democratic Republic of the Congo, and West Nile encephalitis in the United States have presented major challenges and reminded us that we live in a global village.

The Centers for Disease Control and Prevention has developed a strategy for addressing emerging infections in consultation with outside experts in clinical infectious diseases, microbiology, and public health. Incremental implementation of this strategy has occurred since 1994, and an updated version was published in late 1998. The strategy contains four goals which focus on strengthening surveillance and response capability, addressing applied research priorities, improving prevention and control strategies, and strengthening the public health infrastructure at local, state, national, and global levels. Continued implementation will require effective partnerships with other federal, state, and local public health agencies, infectious disease and travel medicine clinicians, clinical microbiologists, academic institutions, industry, the World Health Organization, and other international organizations and agencies.

Infectious diseases are important, evolving, complex public health problems. An integrated approach involving clinical, epidemiologic, laboratory, and behavioral sciences is critical to their prevention and control. A strong and flexible public health infrastructure with linkages to clinicians is the best defense against any disease outbreak.

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Update on Marburg and Ebola Viral Hemorrhagic Fevers.

MARGARETHA ISAACSON, *The South African Institute for Medical Research and the University of the Witwatersrand, Johannesburg, Gauteng, South Africa*

The Marburg and Ebola strains of filoviruses, together, have caused fewer than 1500 recorded cases of illness since their recognition. Despite extensive research, the natural reservoir host(s) and modes of transmission of these viruses remain unknown. Very few recorded human cases were infected in nature, but a relatively high number of these were travellers. The notoriety of the filovirus infections may largely be due to their propensity to attack health care personnel and others directly involved in caring for the sick, as well as to the often dramatic and rapidly fatal hemorrhagic course of the illness. Nosocomial transmission of any viral hemorrhagic fever (VHF) is, however, almost entirely preventable by the practice of basic precautionary measures when handling patients whose history and clinical presentation suggest inclusion of a VHF in the differential diagnosis. Similarly, universal precautions when processing suspect pathological material in the hospital and laboratory, is also effective in preventing secondary spread. Recent developments include simpler and safer means for laboratory confirmation of infection and for surveillance, as well as promising therapeutic drug results in Ebola virusinfected mice.

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The Emergence of Infectious Diseases Due to Global Travel of Food and People

T. BREUER, *Robert Koch Institute, Germany*

Emerging infectious diseases are defined as new or reemerging infections that have increased in frequency in the last two decades or threaten to increase in the near future. One aspect of the emergence of infectious diseases is the improved ways of global transportation. Whereas the spread of infectious diseases and the occurrence of outbreaks mainly used to be a local problem, they now must be discussed in a global context. The presentation will focus on presenting examples of recent outbreaks due to transportation of food products as well as travel of humans. Further, the need of establishing global surveillance to monitor the spread of infectious diseases, mechanisms to detect outbreaks, as well as financial aspects due to the global spread of diseases will be discussed.

Every location on the surface of the world is now accessible by cellular telephone, and more and more locations are accessible by E-Mail and fax machines. It is conceivable that within several years all travelers to remote areas will be carrying cellular telephones and digital cameras. Cellular telephones can transmit ECGs, CAT scans, MRIs, and transdermal blood findings. Pictures generated by digital cameras - of wounds or skin rashes, for example - are transmittable by cellular telephone. Also being perfected are numerous user-friendly devices for use by non-medically trained personnel to diagnose various illnesses - finger sticks for malaria, for example. Important issues that need to be resolved to make telemedicine a meaningful part of travel medicine include: maintaining compatibility of the ever changing software and hardware technology; creating facilities and staff to receive the data, interpret the data, and advise and treat travelers/patients; establishing means of reimbursements for telemedicine services, especially in view of the extremely high costs of satellite transmission of data; and ethical and legal guidelines for giving advice to unseen and unknown travelers/patients. Beginning to appear in the marketplace are entrepreneurs with the necessary skills and the capital to facilitate, coordinate, and operate these technical and logistical aspects. Likely, in the near future, telemedicine will be the acceptable standard of practice in travel medicine.

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Portable Telemedicine the British Forces Way – a Simple Solution with Civilian and Humanitarian Applications.

D.J. VASSALLO, *British Defence Medical Services, Royal Army Medical Corps, UK*

Since January 1998 doctors in the British Defence Medical Services have been using store-and-forward telemedicine based on commercially available digital cameras (the Olympus C1400L, the C1400XL and their successor the C2500L) to capture diagnostic quality still images of clinical importance.

The resulting JPEG images of patients' wounds, blood films, electrocardiograms, eye and skin lesions, and radiographs (ranging in size between 30 and 500 kilobytes) are downloaded onto laptop computers. They are then transmitted by email via conventional telephone lines or satellite telephones (depending on whether the medical unit is static or mobile) to specialists at the Royal Hospital Haslar for prompt advice on diagnosis and management. Medical confidentiality is preserved by the use of sequential code numbers. Urgent referrals are preceded by a telephone call to forewarn specialists. Less urgent referrals are usually replied to within 24 hours.

This portable, versatile, and simple yet effective telemedicine method has been used by medical officers in Bosnia, the Falkland Islands, South Georgia, Gibraltar, Cyprus, Belize and the aircraft carrier HMS *Invincible*. More recently it has been used in Kuwait, Macedonia and Kosovo.

Some 300 referrals to date have been sent from previously isolated practitioners over distances as great as 14,000 km (e.g. from South Georgia and the Falkland Islands), with patient management being significantly altered in over 100 cases, and reassurance provided in most of the others. Considerable cost savings have resulted from the prevention of several unnecessary aeromedical evacuations.

Particular use was made of this digital-camera-based system from the British field hospital in Kosovo in summer 1999 to aid in the aeromedical evacuation of wounded civilians requiring specialist reconstructive surgery abroad. Digital photographs of such wounded patients acted as a catalyst for the setting up of previously non-existent evacuation chains. One such patient, "the man with the missing face", had lost his right eye, his right maxilla, and his nose when he had been shot fleeing a massacre. There were no reconstructive maxillofacial surgical facilities available in Kosovo, nor was there any mechanism to evacuate such patients for care abroad. A doctor working with a non-governmental organisation brought him to the attention of the British field hospital. Images of his wounds were transmitted to a maxillofacial surgeon in the UK, and as a result he was aeromedically evacuated to Manchester, where he successfully underwent reconstructive surgery.

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Tele Medicine and Travel Medicine **RICKY J RICHARDSON**, *FRCP FRCPH, London, UK*

As telemedicine becomes more widely deployed as a central process in the delivery of healthcare in a terrestrial setting telemedicine applications are being tested to enhance both the quality and the range of health care services that can be made available to the traveller. Remotely located resort hotels and cruise liners will no longer be limited in terms of health care services that can be accessed thus placing the travellers always within reach of expert diagnostic skills and treatment advice. This process is likely to remove one of the major remaining anxieties limiting travel for the elder citizens in our society. Thus telemedicine is likely to become an important factor in the travel sector for the foreseeable future.

Telemedicine, the provision of medical care from a distance, using advanced satellite communications and state of the art software technology, is currently enjoying rapid proliferation. It seems to offer the perfect solution to the problem of how to deliver a high quality primary and emergency healthcare to crews on board vessels. This paper discusses the achievements made by a project conducted by a multinational consortium of partners concerning the development of an integrated automated Telemedicine system, NIVEMES (Network of Integrated Vertical Medical Services) targeting ships and remote populations.

The main features of the project were to develop software to transfer medical data to and from a ship to a shore based medical institution. In this context, a ship node and a hospital node were designed and developed to transfer data electronically. These “nodes” had the facility, not only to transfer information, but also the results of some basic clinical investigations and images of investigations (e.g. X’ray, CAT Scan images, electrocardiograms etc.) could be transferred in quick time. Further, video conferencing facility allows the doctors ashore to see the patient, talk to him if he is conscious, or to the medical attendant on board and to give instructions for medical care, especially for surgical intervention if necessary. Apart from its use for emergency purposes, seafarers who are suffering from chronic illnesses, but fit to work on board, can be managed with frequent consultations with physicians ashore. Refresher medical education is another aspect that will be available.

The service will, in the long run, bring about cost reductions and is expected to provide better health care to seafarers. One of the most important issues, however, is that medical attendants on board should be geared with better medical training to take up the challenge.

* Presently at MRC Institute for the Environment and Health, Leicester, UK

Rapidly increasing medical knowledge and accelerated speed of communication technologies could lead to a virtual flood of knowledge in all medical fields. In Travel Medicine the simultaneously increasing world wide travel activities raise the demand of qualified medical advice to travelers of all ages, to all regions of the world. Not only to handle these multiplying effects, we consider a structured data-management and a powerful, close to realtime presentation of these data to both, traveler and medical consultant an absolute necessity. New Information technologies and the merging means of telecommunications are dare and chance to meet this challenge.

The DRTM (German Tourist Health Association) has established a relational database, including structured medical data on 150 tropical and travel related diseases, detailed information on vaccination and prophylaxis as well as basic geographic and political information to 230 countries and travel destinations.

To achieve accurate data maintenance and update we systematically review, evaluate, translate and store incoming primary data sources for automated linkage to other associated topics, geographic projection and to await possible exposure to future queries. These operations are executed within a SQL compatible relational database management system.

Data input is currently located at our local offices, data publishing although has to meet multiple requirements. Using database clients inside the local network, the widespread platform of TCP/IP based networks, intra- or internet, distribution of HTML (and derived languages/add-ons) formatted information gives us practically unlimited ways to customize the presentation to reach the individual consumer.

Currently these services are used for our own Travel Medicine helpdesk for travelers, internet information services for travelers and medical staff, and within the Intranet of the German automobile association as a basis for travel medical consultation.

The revolution in information technology gives us plenty of tools to meet the challenge of handling the abundance and complexity of medical data. It will hopefully also lead to a new quality of information and prevention in the field of travel health, easily and efficiently providing more current and accurate advice, in order to avoid misinformation as a cause for travel medical distress.

Nearly two decades after the first recognition of AIDS in 1981, HIV-1 is responsible for the death of over 14 million people and the number of persons living with HIV/AIDS in the world is estimated at 35 million. New infections are occurring in every country of the world but the focus of the pandemic has shifted to developing countries and especially to Sub-saharan Africa where the HIV-prevalence among adults can reach 30-35% in some areas. Since 1996 effective anti-retroviral drugs have become available which resulted in a strong decrease of AIDS cases and deaths in industrialized countries. However, until now complete cure is not achieved as the virus can not be eradicated from certain resting cells, changing HIV infection from an always fatal disease into a very serious chronic condition. Anti-retroviral drugs in combination with Cesarean section decrease the vertical transmission risk from an infected mother to child from approximately 20 to under 2%. The price of anti-retroviral drugs and the complexity of the treatment regimens are prohibitive for developing countries but simple and cheap regimens are being used in pregnant women. An effective vaccine would be the best solution but this appears to be very difficult to develop and it can not be predicted when such a vaccine will be available.

Travellers are at risk for HIV (and other Sexually Transmitted Infections) through sexual contact especially in areas where HIV is highly endemic. There are no data on the HIV risk for travellers but studies have been done among soldiers participating in peace keeping operations. Among 3627 soldiers from Indonesia who participated in such an operation in Cambodia, 7 HIV infections were detected and all were HIV-1 subtype E which is the prevalent subtype in this area. The incidence was 0.6% per 100 soldier years. Similar data have been reported about soldiers from Uruguay who participated in the same peace keeping operation. Travellers should be well informed about such risks and the ways to prevent infection (condoms). Travellers can also be at risk for HIV if they receive injections with unsterile needles and syringes e.g. in Africa but also in certain Eastern European countries and if such situations are anticipated, it may be advisable that travellers bring their own sterile needles/syringes. Medical personnel and students who are going to work in hospitals in areas where the HIV prevalence is high are at risk through needle stick accidents and if anti-retroviral drugs are locally not available, they can be given a package containing a starting dose of anti-retroviral drugs in case Post Exposure Prophylaxis (PEP) is necessary.

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The Risks of Tropical Travel for People with HIV and How to Manage Them.

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The increase in overseas travel that has occurred over the past two decades has been paralleled by an enormous increase in the number of people infected with HIV. In the past, many HIV-infected individuals rapidly became ill and few travelled to exotic locations. However, the use of highly active antiretroviral treatments (HAART) has turned a terminal illness into a chronic infection. Survival is greatly improved and with restored health and optimism, it is likely that those with HIV will be more adventurous travellers. Data show that HIV infection leads to poorer and less durable vaccine responses and immunisation may increase HIV replication in the host. Whether HAART will affect these responses is not yet clear. When people visit areas endemic for malaria, the options for prophylaxis are becoming more limited and there are few data concerning the interactions between antimalarials and HAART. Also, it is clear that HAART does not render people non-infectious so the risk of widespread transmission of resistant strains of HIV to the tropics is a serious one. HIV positive travellers should practice safe sex abroad as well as at home.

Apparently, the number of travellers to a given destination and their sexual mixing pattern with locals are factors influencing the spread of STIs between sending and receiving countries. However, not only if the traveller being infected, but also if the person is contagious at the time of arrival must be considered in analysis of factors of importance for the geographic epidemiology of STIs as highlighted by the differences in contagiousness during the natural history of infections by HIV.

It is also essential to know if the infected traveller and the new acquaintance is a male or a female, incl. the sexual preference of the persons as the transfer rate of HIV between the genders may differ up to 1000-fold. Also the sexual intercourse practice influence the transfer rate of this and other STI agents.

Obviously, the epidemiological situation at the destination and at the place of origin of the traveller is of importance for the geographic epidemiology. If the traveller for each STI and local partner(s) belong to a core group for STIs is of relevance to know. If the traveller belongs to a cohort with frequent sexual contacts outside the core it may have an important impact on the epidemiology of STIs. The number of sexual partners during the stay at the destination, the selectivity of partners by the traveller and the traveller's local sexual contact(s). The immune status, incl. genetic resistance to infections by STI agents, in the population at the destination and the vaccination status (e.g. against hepatitis) may also influence the spread of STIs by infected travellers. The age of the sexual contacts of the traveller at the destination can be another factor influencing the transfer rate of STI agents. The health status of commercial sex workers (in areas where prostitution involving tourists is common) is essential for the STI-related health of the general population. The possibilities for establishing sexual relations and "contact surfaces" between on one hand travellers and on the other hand locals and travellers from other destinations differ by category of the traveller, i.e. between business-, back-pack (globetrotter)- and charter travellers. The availability, quality of and the use of both barrier and hormonal contraceptives in the population at the destination and by the traveller influence the transfer rate of STI agents. The viability of some STI agents may differ, like their antibiotic susceptibility, which can contribute to difficulties to control them.

Travel medicine epidemiologists should be concerned with analysing all the above-mentioned factors in order better to understand the spread of each type of STI by tourism and migration

HIV and Seaman

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This work has evaluated the problem of HIV in seamen. In the period from July 1, 1994 to June 30, 1997, 2000 seamen were examined by an anonymous questionnaire. In the same period blood samples of 520 seamen were analysed for HIV by standard methods. Those were seamen who had frequent sexual relations with promiscuous partner or they were themselves promiscuous during the year before investigation. The same seamen never had homosexual relations, never used intravenous narcotics nor had they undergone medical intervention with the possibility of blood contact during the year before the investigation. The results have been statistically analysed by X2 test. Seamen were more often sick of sexual diseases than the other people (odds ratio (OR) - 6.52; 95% confidence interval (CI) = 7.50 - 5.7). The right-thinking characteristics of the foreign seamen in relation to domestic seamen and in connection with sexual behavior or the knowledge of HIV disease were: They were better informed about AIDS, because the information about AIDS was more accessible to them. Also, they more often used preventatives during the sexual relations (OR 0,4; CI 0.40 - 060). In the sample of 520 seamen, laboratory tested on HIV, four (0.8%) were seropositive.

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Traveling Women.

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Women make up a growing number of those who travel internationally and those who travel to more exotic and remote locations. During this workshop, illustrative cases will be used to review gender-specific challenges that traveling women face. Issues discussed will include gynecologic disturbances (e.g. irregular menses, contraceptive issues, and unwanted pregnancy) as well as those problems that women may encounter more frequently than men (e.g. venous thrombosis). Case histories will also review the concerns of traveling women who are contemplating pregnancy or who are pregnant and thus require special consideration with regard to administration of immunizations, malaria chemoprophylaxis, as well as management of routine ailments such as traveler's diarrhea. Cultural issues will also be mentioned as they can be a significant problem for women as they travel through or emigrate to different countries.

If travel medicine, in danger of dealing only with a narrow spectrum of movement and with strong commercial overtones, is to expand into an intellectually valid and challenging medicine of migration on all scales, it will need some degree of structure as a topic. Travel covers a great range of movements from a short holiday journey a few miles from home through to extremely long displacement of refugees across the globe. It is also one way in which the environment changes for an individual (the other being where the person remains in one place and the surroundings are altered). Travel leads to the mixing of pathogen gene pools, an area for which measurements are now possible. It also affects the spatial structure of disease transmission (of particular importance in vector-borne diseases). The relative importance of travel in epidemiology of such infections will determine whether a multi-layered or a homogeneous mixing model is more appropriate to describe the system. Hazards of the journey itself form a separate category of risk unless the movement is so slow as to integrate with the static population. As we become able to view the epidemiology of infections as the interacting population genetics of pathogen, vector and human host, the importance of migration and its accurate measurement increases. Travel and migration are the factors transforming environmental potential risk into actual risk. These issues will be explored at several scales. There is also a historical effect of earlier travel, whether by the same route or by the same person, in modulating the perception of health risks of travel.

The White House Medical Unit (WHMU) prepares for all medical contingencies faced by the President when traveling abroad. WHMU personnel follow a standardized protocol for each trip, which includes preparing travel medicine advisories, packaging travel kits and equipment, and surveying hospitals at the destination sites.

Military physicians have provided medical care to the President since the 1790's. The WHMU is comprised of military health care providers. As the activities of the President have expanded over the years, so have the structure and function of the WHMU expanded to meet the increasing needs for travel support and security protection.

Filling the ranks of the operational WHMU are physicians with specialties in Family Medicine, Emergency Medicine and Internal Medicine, as well as a complement of seasoned physicians assistants, nurses and paramedics. All operational and administrative personnel are drawn from the armed forces.

While it provides travel medicine preparations and operates a mobile medical team to accompany the President, WHMU also delivers medical care to the President and other VIPs under conditions of tight security. In coordination with the United States Secret Service, WHMU has developed the unique field of "protective medical support."

WHMU's experience suggests that effective protective medical support requires (1) keen awareness of differences in medical standards of care in other countries, (2) constant attention to details in planning for contingencies including severe trauma or infectious disease, and (3) maximal flexibility to adapt to changes in itinerary and security level at a moment's notice.

The Incoming Jubilee Year: A First Analysis of Health Care Services Availability in Rome and Lazio and the Estimated Health Needs Due to the Inflow of Pilgrims and Tourists.

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Health care is one of the key service areas for the Jubilee Year, during which health services - above all medical ones - in Rome and Lazio region will have to cope with a sharp increase in demand associated with the huge inflow of pilgrims and tourists.

The authors move from the experience held in health status analysis and monitoring in the Local Health Unit ASL RM E - where Vatican State is and most of the Jubilee events in 2000/2001 would be faced - which will be published in the "Relazione sullo stato di salute della popolazione del territorio dell'Azienda USL RM E", co-promoted by the WHO Program "Healthy Cities". The purpose of the current analysis is to analyse the actual health services supply in Rome, evaluated according the latest health indicators available in 1996 by the National Statistics Institute (ISTAT) and referred to Rome city, Rome district and Lazio region. Among these, beyond hospital admissions/year and average length of stay, total availability of NHS beds for clinical area (a total of 20.345 beds in Rome in 1996, i.e. 0,54% of resident inhabitants); medical personnel employed in NHS (8.693 m.d. in Rome in 1996, i.e. 0,23% of resident inhabitants, 4,27% of NHS beds). These data will be compared with health care demand, as analysed in 1998 by the Roman Agency for the Jubilee on behalf of Lazio region and recently published. The Jubilee' events and the pilgrims inflow will create an additional daily demand: various concerns focus on public health related issues. Among these, the authors will describe the following items:

- Health Services Requirements (i.e. The Roman Agency for the Jubilee has evaluated a forecast additional daily demand in 150 walk-in hospital visits; 20 specialist visits; 680 pharmacy prescriptions; 15 calls to the 118 emergency number; 10 ambulance trips; 70 emergency room visits, etc..)
- Prevention
- Basic Medical Care
- Emergencies and Special Events

Saudi Arabia is a rapidly developing country, where its enormous wealth has catapulted the Saudi people from an 18th century way of life into the 20th century in less than one generation. The health services system began in 1951 by the establishment of the Ministry of Health. Its national health budget has increased 1000% over the first three decades. A large portion of it was used to build technologically advanced hospitals and health centers, which has placed it on par with developed countries, providing efficient and comprehensive primary, secondary and tertiary services. Although most developing countries take little interest in the preventive services, Saudi health authorities have given it due care. This is mainly due to the millions of Muslims who travel annually to Mecca to perform the holy pilgrimage. This large congregation of people from all over the world with different customs, languages and health backgrounds are a fertile area for the propagation of infectious and communicable diseases, which can spread to other parts of the world. This paper highlights the health services of Saudi Arabia and elucidates the role played by the Saudi health authorities in providing comprehensive and efficient health services to the pilgrims.

Five million pilgrims will arrive in Italy for the Jubilee year. Many of them will stay in Rome and in the proximal area of the town. Abruzzo area is 100 kilometers far from Rome. For this reason and for the presence of many churches and shrines it will be interested in Jubilee. The health office of Abruzzo region has planned public health interventions for the Jubilee year. As a matter of fact, its territory will be involved in this event for several reasons.

- presence of the airport
- presence of numerous Jubilee churches and shrines
- easy motorway communications from Rome and return
- presence of hotels and comfortable hostels

Therefore we have made a regional coordination for the programming and the administration of Jubilee's sanitary problems.

At first we have worked out a risk map with the cooperation of priest, of tourist agencies and association of hotel keepers. In the second place we have planned in our hospitals for the reception of pilgrims. We have identified health structures which will be able to carry out emergency, chronic diseases services such as hemodialysis. Moreover it will be possible to treat diabetes, hemophilia, oncologic, infectious diseases. We will buy diagnostic kits for tropical contagious diseases (meningitis, tuberculosis, cholera). We are also going to buy several drugs for the prophylaxis of infectious diseases.

Hotels worldwide usually perform regular disinfection of guest rooms as well as of kitchen and restaurant areas to control pests like cockroaches, ants or flies. In tropical countries control measures are also important to reduce insect vectors of diseases like malaria, dengue or yellow fever. In the past few years travel industry in Germany faced a number of complaints from customers and professionals in the travel sector concerning health problems presumed to be caused by insecticide exposure predominantly of the pyrethroid type. To assess insecticide exposure in the environment of aircraft cabins and hotel rooms we had conducted a number of surveys in 1995/96 and 1998/99. In a first step the quantity of insecticides in the cabin air as well as their presence on cabin surfaces were analyzed. We found very low concentrations (nanogram level) of insecticides in the cabin air and on the surfaces of the cabin despite regular residual insecticide treatment of the long-haul aircrafts. This low level of insecticide concentration in the aircraft cabin is probably due to the extremely high air exchange rate on board which rapidly clears the cabin environment from any contamination. To investigate other possible ways of insecticide exposure in international travel we decided in a second step to conduct a hotel survey. Details of their pest control program were received from 30 international hotels through a questionnaire. Five hotels in tropical areas were selected for a comprehensive survey: Bangkok, Bombay, Mexico City, Nairobi and Lagos. Six volunteers of each air crew and two airline ground staff members collected 24-hour urine samples for the biological monitoring of pyrethroid metabolites the day before the travel and at the end of the three day stay in the hotel. Blood samples were drawn before and after staying in the hotel for determination of Acetylcholinesterase (AChE) activity indicating organophosphate exposure. Eight-hour air samples were taken in the guest rooms of the study group for analyzing the insecticide concentration of the indoor air.

Results:

- * In two hotels an airborne insecticide contamination could not be detected in most of the rooms or the concentration was slightly above the detection limit.
- * In two hotels we found a profile of low pyrethroid and organophosphate level, indicating a regular disinfection by spraying or fumigation.
- * In one hotel the test results showed a clear overdosing of organophosphates.
- * In 28 out of 46 members of the study group detectable amounts of pyrethroid metabolites in urine were found at the end of the hotel stay ranging from 0,5 - 3mg/L urine (detection limit 0,5 mg/L).
- * In no case significant reduction of AChE activity as a toxic effect of organophosphates was found.
- * There was no clear correlation between indoor air results and results of biological monitoring.

Results and health aspects will be discussed.

Personal protection from blood sucking flies, kissing bugs, fleas, mites, and ticks and the diseases they transmit (malaria, yellow fever, dengue, filariasis, leishmaniasis, plague, Lyme disease, ehrlichiosis, Chagas disease, trypanosomiasis) can be achieved using clothing, screens, nets and netting enclosures, by avoiding insect infested areas, and by using repellents. Natural and synthetic repellents can be applied to the skin to protect against biting insects, whereas toxicants, such as permethrin (3-phenoxyphenyl) methyl (+/-) cis/trans 3-(2,2-dichloroethenyl) 2,2-dimethylcyclopropanecarboxylate, can be applied to the fabric used for clothing, tents, bednets, sleeping bags, and ground cloths. Natural repellents include the use of pyrethrum and essential oils, such as citronella, and the use of folk remedies. Synthetic repellents include (a) KBR 3023 (1-(1-methyl-propyl-carbonyl)-2-(2-hydroxyethyl)-piperidine), which is effective against mosquitoes, black flies, stable flies, and ticks; (b) IR 3535 (3-(N-butylacetamino)-propionate), which is effective against mosquitoes, deer flies, and tsetse fly; (c) USDA AI3-37220 (1-(3-cyclohexen-1-ylcarbonyl)-2-methylpiperidine), which is repellent to mosquitoes, stable flies, deer flies, black flies, and biting midges; and (d) deet (N,N-diethyl-3-methylbenzamide). Deet effectively repels mosquitoes and other biting flies, chiggers, fleas, and ticks. In 1999, the US Environmental Protection Agency (EPA) renewed registration eligibility for deet-containing products in the USA. Clothing fabric treated with permethrin provides protection from mosquitoes and other flying and crawling arthropods. Permethrin is stable in light and remains active on fabric after many washes. It is registered by the EPA for fabrics used to construct tents, shelters, truck covers, awnings, hunting blinds, ponchos, sleeping bags, netting, and ground covers. An optimal strategy for protection against blood sucking and disease-bearing arthropods is to use deet on the skin and to wear permethrin-treated clothing. Mechanical insect repellent devices such as electric light traps with electrocution grids and ultrasound devices are ineffective. In contrast, electric heating plates for vaporizing pyrethroids reduce mosquito landing rates on humans. No effective systemic insect repellents are available.

Bacterial Contamination of Tap Water and Water for Medical Purposes in an East African University Hospital

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Tap water in medical facilities is used as drinking water but also for medical purposes: e.g. for producing medicaments, as rinsing fluid in surgeries or as oral rehydration solution. In a microbiological study in an east african university hospital tap water and water in medical equipment was controlled for germ counts and pathogens.

Results showed a clear difference between both kinds of water. Tap water specimens from the hospital water cistern up to the water-faucets in several units had low (<100 cfu/ml) or acceptable (<1000 cfu/ml) germ counts and never coliforms, Legionellae or *P. aeruginosa*. On the other hand germ counts in specimens from water reservoirs in medical equipment (dental unit, oxygen-respirator, Berkefeld filter unit, steam sterilizator) showed with the exception of boiled water for washing hands in the operating ward high germ counts (>1000 cfu/ml). The most remarkable contamination was found in filtered water for underfed children with a count of >4300 cfu/ml and detecting *Klebsiella pneumoniae* and finding moving larvae on the agar plate.

Desinfection of tap water supplied to the university hospital is working effectively. Problems arise when stagnation occurs e.g. in water reservoirs. This is a risk for patients to acquire nosocomial infections as pneumoniae or wound infections and can be avoided with low costs by training medical staff in handling this water as a kind of medicament.

There has been considerable debate about the effectiveness of the ways in which water quality information is provided to the public. The EC Bathing Water Directive requires the results from the microbiological analysis carried out by the Environment Agency to be displayed during the bathing season thereby allowing people to make an informed choice on participating in water based activities. There continues to be great debate over the appropriateness of the indicator species and levels adopted. A Blue Flag is awarded to bathing waters that meet the more stringent EC Bathing Water Directive guideline levels together with a range of other criteria such as water safety. The Seaside Award is based on meeting the mandatory EC Directive standards together with other criteria concerned with safety and provision of certain facilities.

The standards are not well understood by the public, although there has been a growth in public interest. Surveys on the Dorset Coast show that out of the 500 people questioned, 56% were aware of the EC Bathing Water Directive, 84% of the European Blue Flag, 47% of the Seaside award and only about 8% were aware of the microbiological results displayed at each site.

The study revealed that most people made a decision on using recreational waters based on: 1) appearance of the water; 2) its use as a regular bathing location; 3) Blue Flag or Seaside Award; 4) recommendation; 5) number of people at the location and 6) the ban of dogs on the beach. Although the basic requirements of the EC Directive are being met, only a small proportion of the public are aware of the microbiological data available and therefore few people are using this to make a fully informed choice when determining whether to use particular recreational waters. This suggests that the spirit of the EC Bathing Water Directive is not being met and therefore action should be taken to address this issue. In an attempt to remedy this situation a number of different approaches to the display and dissemination of bathing water data were tested on Dorest beaches during the 1999 bathing season. The evidence so far from these tests suggests that the balance between the needs of the Directive, the scientific background and presentation of the information for a poorly informed public requires more detailed investigation.

Millions of European citizens live in urban areas without parks, gardens and other green spaces. The scarcity of green spaces in European cities has its origins in their historical backgrounds, since medieval communities were small, compact, fortified and with only the strict essentials. However, citizens of the third millennium want to live in an urban setting where it is possible to move in open spaces and to enjoy the natural beauty. In order to implement the well-being of the European citizens and travellers, the World Health Organization Collaborating Centre for Travel Medicine in Rimini, Italy, will organize with the Municipality of Forli an international conference on Green Cities of Europe, to be held in Forli, Italy, 12-14 October 2000. The Conference will address the main environmental aspects of cities, including air quality, urban traffic organization, quantity, location and maintenance of greenery, organization of parks to cater for children and the elderly, and the relationship between tourism and environment. Green spaces in cities have an impact on human health and well-being. The conference will therefore focus on:

- Management of green areas in cities
- Green tourism
- Green spaces and air quality, especially the problems of asthma and allergies to tree and bush pollens
- Green spaces as an incentive to sport.
- Green spaces and urban employment.
- Green spaces and biodiversity.
- Green spaces and urban fauna.
- Green spaces and safety.
- Conflicts of interest when using public spaces

In addition to experts of WHO, the conference will be attended by environmental health experts of other international organisations (European union Environment Agency, Council of Europe, UNEP, etc.), of European countries, and of local authorities. In addition to examining scientific and cultural topics, the conference intends to establish a network of green cities that are committed to collaborate to improve the quality of life of Europe's citizens in the coming decades. This network of green cities, united in the "Green Cities of Europe" association, will continue its activities over the next years.

The surveillance of communicable diseases relies on a composite approach in which laboratory and epidemiology capacity are the main technical elements at international, regional, and national levels. Global/regional laboratory surveillance include primarily disease-specific global laboratory networks such as Flunet for influenza, the AR-InfoBank for antimicrobial resistance or the viral haemorrhagic fever network. These global networks rely on numerous national or international reference laboratories, including WHO Collaborating Centres. Global epidemiological surveillance includes the International Health Regulations that are being updated and epidemic intelligence recently set up in WHO to improve international epidemic preparedness. At the national level WHO makes special efforts to strengthen laboratory and epidemiological capacity for the surveillance of priority diseases. This is done in an integrated approach as reflected in WHO Recommended Surveillance Standards. In addition many specific outbreak response guidelines and news tools are developed such as the joint WHO/UNICEF HealthMap project or TEPHINET, the international network of field epidemiology training programmes.

Dengue is a potentially fatal arthropod-borne viral infection present in most tropical and subtropical regions of the world. Approximately 2.5 billion people living in urban areas are presently at risk of acquiring dengue. The geographic distribution has greatly expanded and the number of cases increased considerably in the past 30 years. Over 1.2 million cases were reported to WHO in 1998, the greatest number ever for a single year. The increase is due to uncontrolled population growth and urbanization in the absence of appropriate water management, to global spread of dengue strains via travel and trade, and to erosion of vector control programs.

There are 4 dengue serotypes and infection with one type provides immunity to only the homologous type, thus one can acquire multiple dengue infections. Fever and myalgias that are debilitating typically characterize dengue infection, but infection can also result in hemorrhagic manifestations and shock (DHF/DSS). The case fatality rate for DHF/DSS can be as high as 15% if not treated correctly. The risk of DHF/DSS is approximately 0.2% during primary infection but increases 10-fold during a secondary infection.

For diagnosis of dengue in a non-endemic setting, the patient must give a history of travel to an endemic area within two weeks of fever onset. Detection of anti-dengue IgM or IgG is widely used for laboratory diagnosis. Commercially available serologic tests for dengue have recently been marketed, but are of limited diagnostic value during the febrile phase (viremia) of the illness. Identification of the infecting dengue requires virologic assays. Diagnostic testing, including virus detection, is available through an extensive network of specialized laboratories in Europe.

Controlling dengue epidemics, once established, is difficult. Therefore, it is important to implement control measures when an increase in disease activity is first detected. This requires an effective disease surveillance program and intervention plan. Proactive surveillance systems that facilitate and collection, referral, and testing of blood samples; and reporting and analysis of results, can also be used to predict outbreaks.

The mosquito responsible for dengue virus transmission is *Aedes aegypti*, a day-biting domestic mosquito. In the absence of effective vaccines, prevention for the traveller focuses on anti-mosquito measures including the use of repellents, wearing trousers and long-sleeve shirts and avoiding, when possible, areas that have breeding sites favorable for *Aedes aegypti*.

With continuing globalization in travel, trade and commerce, increased importance is being attributed to co-ordinated global epidemic surveillance for epidemic diseases as a means of ensuring international public health security.

Global epidemic surveillance is the process by which the World Health Organization (WHO) and its partners seek to do this. Its key components are: Epidemic Intelligence, Epidemic Preparedness, Co-Ordination of Epidemic Response.

Epidemic Intelligence: As a part of global epidemic surveillance, epidemic intelligence (accurate and timely information) about important disease outbreaks should be delivered systematically and rapidly to key professionals in international public health.

Outbreak verification (OV) aims to improve epidemic disease control by actively collecting and verifying information on reported outbreaks and informing key public health professionals of confirmed and unconfirmed outbreaks which are potentially of international public health importance.

Epidemic Preparedness: WHO is working to improve global, regional and national preparedness for epidemics through: establishing global epidemic surveillance standards, creating networks of partners for preparedness and rapid response, strengthening laboratory capacity and laboratory networks, training in field epidemiology and assessing and strengthening national surveillance systems.

Epidemic Response: WHO applies three basic criteria to assess whether international assistance is required in response to an outbreak: 1) Humanitarian criteria - a country lacks the capacity to respond to an epidemic; 2) Criteria of international spread - a disease has the potential to spread beyond national borders; 3) Criteria of travel and trade - an epidemic which may result in international travel and trade restrictions.

Since January 1, 1997, 474 outbreak reports have been investigated, verified and disseminated if found to be of potential international public health importance. Cholera, viral hemorrhagic fevers and meningococcal meningitis represented half of the published events, other outbreaks included plague, anthrax, viral encephalitis, dysentery and influenza.

Recent examples of outbreaks with direct WHO participation in the field are: Rift Valley Fever in Kenya and Somalia, monkeypox in the Democratic Republic of the Congo, avian influenza (H5N1) in Hong Kong, Special Administrative Region of China, Ebola hemorrhagic fever in Gabon, relapsing fever in southern Sudan, influenza in Afghanistan and Marburg virus infection in the Democratic Republic of the Congo.

Active involvement in co-ordinating epidemic response allows WHO to attend not only to the immediate need, but also to initiate measures which result in permanent benefit, such as the development of laboratory networks and active surveillance systems.

GeoSentinel is a network of 25 member travel/tropical medicine clinics (16 in the United States and nine in other countries) initiated in 1995 by the International Society of Travel Medicine (ISTM). GeoSentinel is based on the concept that these clinics are ideally situated to effectively detect geographic and temporal trends in morbidity among travelers. The core surveillance tool is a single-page faxable form submitted to a central data site for each post-travel patient, including immigrants, refugees, and foreign visitors. Diagnoses are entered either as specific etiologies or as syndromes, and are then linked to geographic locations, reference dates, and clinical presentations. As of late 1999, a subset of sites utilize direct electronic submission of data via the Internet. In addition, electronic communication with the larger body of worldwide ISTM member clinics is periodically done to obtain broader data collection in response to specific inquiries. The present goals are 1) to monitor global trends in disease occurrence among travelers; 2) to ascertain risk factors and morbidity in groups of travelers categorized by travel purpose and type of traveler; 3) to respond to urgent public health queries; 4) to develop educational priorities for travelers' health; and 5) to effect a rapid response by electronically disseminating alerts to surveillance sites, to all ISTM members in 55 countries, and to public health authorities. In addition, a major by-product of the network, and now one of its strongest assets, has been the growth of partnerships between ISTM, CDC, other surveillance networks such as TropNetEurop and health-care providers around the world, as well as other medical societies, government, and private organizations. To date aggregated data on 5,141 travelers and migrants is contained in the GeoSentinel database and the sample is expanding rapidly.

Travelers' diarrhea is arguably the most important health problem affecting tourism among travelers moving from developed to developing countries. Mortality is uncommon; however, morbidity is substantial. Approximately 1% of sufferers are hospitalized, 20% are confined to bed, and nearly 40% change their itinerary. Most of the identified causal organisms are bacterial. Considerable overlap exists in clinical manifestations.

Risk averages 7% in developed countries such as the United States, Canada, Europe, Australia, New Zealand, and other industrialized nations; 20% in southern Europe, Israel, Japan, South Africa, and certain Caribbean Islands; and 20-50% in the rest of Africa, Latin America, the Middle East and most of Asia. Risk of travelers' diarrhea has been related to water and food consumption. Differences in hosts are difficult to demonstrate as risks for the acquisition of diarrhea.

Options for the prevention of travelers' diarrhea include education and chemoprophylaxis with either bismuth subsalicylate-containing compounds or antibiotics. Vaccination is a promising option, however vaccines against all enteropathogens that cause travelers' diarrhea might never be possible or cost effective due to the large number of strains that cause disease. Most authorities agree that routine prophylaxis of travelers' diarrhea, especially with antibiotics, should be discouraged.

Less severe disease can be treated with a variety of non-antibiotic agents. Bismuth subsalicylate-containing compounds (BSS) decrease the passage of unformed stools by almost 50%. The anti-secretory and anti-motility agent, loperamide, is more efficacious than BSS. When patients are treated with loperamide, the use of oral rehydration solution confers no additional benefit. A novel calmodulin inhibitor, zaldaride, is effective but not yet marketed. A novel anti-secretory agent, SP 303, has been shown to be effective, but it is now marketed as a botanical, SB Normal Stool Formula, rather than a drug.

Presently, a fluoroquinolone is the antibiotic of choice for treatment. A single dose can be recommended for most patients. One disquieting observation has been the development of fluoroquinolone resistance during treatment of *Campylobacter* disease. Non-absorbed antibiotics (e.g., aztreonam or rifaximin) are effective. Rifaximin is now marketed in Mexico and Italy and should become an agent of choice once it is more available. Azithromycin treats *Campylobacter* disease and *in vitro* studies predict that it should also be active in treating travelers' diarrhea.

Finally, the combination of an antibiotic and loperamide is superior to treatment with either agent alone and is the treatment of choice for distressing disease.

Subacute or chronic diarrheal syndromes are being increasingly recognized by clinicians who practice travel medicine. In some instances an acute bout of diarrhea precipitates chronic changes in gastrointestinal function not always involving diarrhea as the predominant symptom. Limited data on the incidence, natural history of and predisposing factors for chronic travelers diarrhea exist in the medical literature. Some useful information may be extrapolated from studying indigenous populations, expatriates and long-term residents of developing countries. Recently, an increasing awareness of chronic diarrheal syndromes in short-term travelers has been recognized. Bacterial pathogens, comprising the most common etiologic agents of acute diarrhea are also found to be responsible for persistent diarrhea. In addition to relapsing and recrudescing *Salmonella* and *Shigella* infections, Enteroaggregative *E. coli*, *Campylobacter jejuni* and *Yersinia* have been associated with a prolonged carrier state. Common parasites such as *Giardia* may be responsible for continued symptoms of abdominal discomfort, bloating and diarrhea. *Entameba histolytica* may cause persistent diarrhea but is probably over-diagnosed in short-term travelers and a much less common cause of acute and chronic diarrhea in travelers than has been previously suggested. Post infective malabsorption may be a temporary phenomenon after any cause of infectious diarrhea. Chronic malabsorption may reflect underlying tropical sprue, unmasked celiac sprue or persistent protozoan infection. Newly described protozoan pathogens such as *Cyclospora* may be responsible for continued symptoms of diarrhea in returning travelers as well. Foreign travel may unmask underlying gastrointestinal disorders such as inflammatory bowel disease. *Clostridium difficile* infection may result from antibiotics taken en route or from antimalarial chemoprophylaxis. Persistent diarrhea may be the first sign of an HIV enteropathy. In many cases of persistent post travel diarrhea, an infectious etiology is suspected but no microorganism is identified. Despite exhaustive evaluation in many patients no specific diagnosis is made. The term post infective irritable bowel syndrome has been applied to this subset of patients and a combination of diet and supportive therapy is often helpful.

Objective: To study the opinions of primary medical care prescribers regarding use of antidiarrheals in travel related diarrhea (TRD) and compliance with current diarrhea management guidelines.

Method: A survey of 514 general practitioners (GPs), nurses and pharmacists, practicing primary medical care in central Scotland, using a 12 point branched questionnaire. Questions related to preferred management of a healthy adults suffering from TRD. Participants' demographic details and preferred treatment were recorded. Agreement/disagreement on the use of antidiarrheals and their action was measured. Comparative between group analysis was performed and results tested for statistical significance.

RESULTS: Compliance: 487 (94.8%) participants, 236 (49%), Gps 181 (37%) nurses, 70 (14%) pharmacists. Overall, 52% were aware that diarrhea was the most common health disturbance in travelers. Significant differences in opinions regarding management of TRD and use of antidiarrheals were recorded: 116 (25%) would treat with antidiarrheal drugs without delay, 52 (12%) would delay treatment for 48 hours, and 289 (61%) would institute rehydration therapy. Opinion was almost equally divided regarding agreement with the statement, "antidiarrheals keep toxins and pathogens inside the body". With 49% of GPs, 47% of nurses and 58% of pharmacists registering agreement. Similarly, 55% of GPs, 48% of nurses and 54% of pharmacists agreed with the statement "antidiarrheals prolong illness by delaying excretion". These tenets underly current guideline philosophy.

Conclusions: There is considerable variation in individual and professional group management of travel related diarrhea. Guidelines restricting early use of antimotility drugs are based on a premise which this study suggests, has limited support from prescribers. The evidence base for current guidelines is weak. This fact and our results would indicate a need for review of published guidelines. Educational input is also required to standardize management response to a common condition.

Whether or not acute gastro-enteritis of an assumed infectious cause should be treated with antibiotics remains the subject of a continual discussion.

6.132 cases of acute bowel syndrome were registered in Oslo, Norway, in 1995, only 48 patients admitted with the same diagnosis to the ward of infectious diseases at the hospital of Ullevaal, the largest in Norway. The study of patients admitted with gastro-enteritis in 1995 and 1996 to this ward shows that very few received specific treatment. Of 89 patients, only one-third received antibiotic treatment. Patients with typhoid/paratyphoid fever and *Clostridium difficile* were not included in the study.

The decision for treatment was based on clinical findings, before the results of culture of faeces was available. However, there was a significant relation between antibiotic treatment and the findings of pathogenic bacteria in stool. Patients were treated if they had a severely affected general condition, or if they had a combination of three of the following: 1) Fever, 2) Blood in stool, 3) C-reactive protein > 100 or 4) More than eight bowel motions in 24 hours.

This study shows that the use of antibiotics for acute gastro-enteritis is low. This is in line with the consensus that it should be the exception among cases of travellers diarrhoeas that should be given specific therapy, the majority left with symptomatic treatment. It also presents a possible set of criterias for whom to treat, which actually will correspond to the patients with infections needing treatment, being *Shigella* and severe cases of *Campylobacter*.

Health of Displaced Albanian Kosovars in the Former Yugoslav Republic of Macedonia: Fitness to Travel Assessment

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The United Nations High Commissioner for Refugees (UNHCR) estimated that some 781 000 people had been displaced from Kosovo between the beginning of the air conflict in the Federal Republic of Yugoslavia on March 24, 1999 and May 31, 1999. The majority of the people displaced after March 24 were still in temporary refugee camps and collective centres, or being housed by host families in the region at the end of the conflict. As of May 31, 1999, UNHCR estimated that the number of Albanian Kosovar refugees in the bordering countries was: Albania, 442 400; Former Yugoslav Republic of Macedonia (FYROM), 249 300; Montenegro, 67 600; and Bosnia-Herzegovina, 21 700. Among those residing in the FYROM, some had subsequently been offered humanitarian evacuation to international sites through a programme conducted by UNHCR and the International Organization for Migration (IOM), an intergovernmental organization based in Geneva. From April 5 to May 31, 1999, 72 988 people were moved under this programme from the FYROM.

Methods: IOM has provided fitness to travel medical assessments for 41 652 refugees before their departure through the humanitarian evacuation programme. A colour coding system for fitness to travel was used to clearly identify refugees in transit who had either no medical condition (green), non-urgent medical conditions (yellow), or significant medical conditions requiring urgent care on arrival (red).

Results: A total of 41 652 fitness to travel assessments were performed and entered into a data-bank for analysis. Of these assessments, 4,647 (11.2%) individuals were deemed fit to travel, but required medical assessment at the host destination (yellow or red designation). No individual was rejected for travel at this stage of assessment. The average age for all assessed refugees was 25.3 years (women 26 years, men 24.3 years, unspecified gender 31.9 years). There were 21 923 females, 19 566 males and 163 individuals whose gender was not specified. The majority of health complaints were acute respiratory tract infections and hypertension.

Conclusions: A rapid and efficient system for fitness to travel was created to address the issue of mass movement of refugees in a safe and humane manner. The collected health information is of potential use to health care planners at local, national and international levels, and to individuals responsible for the immediate health care of newly arrived refugees.

During the Kosovo Crisis the International Federation of Red Cross and Red Crescent Societies and the ICRC had a joint relief operation involving health and relief in Albania. At its height approximately one hundred expatriate delegates were working all over Albania. Data on expatriate health in high risk and high stress relief operations as well as data on expatriate health problems related to the different stages of an emergency are scarce or non-existent. We conducted a prospective study on delegate's health problems during the acute emergency phase (08.04.99-30.06.99), the late emergency phase (01.07.99-27.08.99) and the post-emergency phase (01.09.99-01.12.99) of the Albania refugee crisis.

Objective of the study was to analyze the pattern of diseases in the different phases of the emergency and to determine the rate of affected individuals.

Methods: The procedure of in-house examination was: consultation by a medical doctor during the first phase (AM), doctor or experienced nurse during the second phase (AM and ASL) and experienced nurse during the third phase (ASL). Consecutive medical examinations, laboratory tests (blood chemistry, urine and stool analysis, serology), x-rays and ultrasonographic investigations were performed in a related Italian clinic in Tirana with a high standard diagnostic level. Possible interventions were: in-house counselling, in-house treatment, treatment through outpatient clinic (Italian clinic), treatment in the university hospital Tirana, follow-up abroad (home country of the delegate), medical evacuation into the home country.

Results: A total of 144 consultations have been performed during the first and second phase, so far 29 consultations have been performed in the third phase. This corresponds to 40%-60% of affected delegates during the first and the second phase. The majority of health interventions were counselling and in-house drug treatment during all three phases. During the first phase we performed five medical evacuations with medical follow-up abroad for stress related reasons (3 cases), accident (1 case) and acute exacerbation of a chronic disease (1 case). In the first phase organic diseases (ARI, diarrheal diseases) and stress related symptoms prevailed. In the second phase stress related problems were number one of morbidity reasons followed by diarrheal diseases. In the third phase the rate of expatriate health problems dropped significantly.

Conclusions: Especially in the first and second phase of the crisis, when the operation was most challenging, expatriate health required high attention. In the first phase organic diseases of the area and season prevailed while in the second phase of the crisis stress related symptoms dominated, requiring time-consuming on the spot counselling.

In the period from May to August 1999 a team of physicians of the Clinic of Infectious Diseases, with the support of Caritas Liguria, gave care to Kosovo refugees in Kavaje (Albania) and in the outskirts.

The team first had to find out other Non Government Organisations dealing with the health of refugees and co-ordinate work with them. Then the team looked for places where assistance was mainly needed: main ambulatory hospital with chemistry in the centre of Kavaje, a field clinic in the country, and some refugees' gathering points. During the first period the team had great troubles in setting up the chemistry service, optimising drugs deliveries and being in touch with Albanian medical structures. In the period of field assistance the team took care of 2528 refugees (<1 year: 7%, 1-6y: 11%, 6-18y: 21%, 8-60y: 45%, >60y: 16%).

Infections were the most frequent diseases (50%), then cardiovascular (15%) and muscle/skeletal diseases (8%) also were frequently observed. Neurologic and psychiatric sequelae were also seen (5%) and they were characterised by anxiety, tension and depression but in some selected cases they were very serious (agitation, shouting, seizures).

Most severe patients were sent to second level structures (such as Italian Army Hospital, Durres; Kavaje 1 Refugees Camp, Kavaje; Saudi Arabian Relief Field Hospital, Tirana; 6th Nato Field Hospital, Kavaje, managed by Czech Republic Army).

The high percentage of infections especially of upper respiratory tract, gastrointestinal tract and skin/soft tissues were clear signs of malnutrition, poor sanitary conditions, and troubles due to the difficulties encountered on their way to Albania through mountains.

Caritas Liguria and Caritas Kavaje supported medical aid with recurrent supplies of drugs, formula and special milks for infants.

Even if there was no microbiological support to confirm the onset of epidemic clusters, clinical pattern of observed cases could exclude the occurrence of relevant epidemic foci such as meningitis or cholera.

Seroimmunity to Poliomyelitis and Diphtheria in Kosovar Refugees in Southern Italy.

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Due to the war in Kosovo, in April 1999, many Albanian Kosovars, principally children, reached the coasts of Apulia and were housed in different refugee camps. It is likely that during the last decade, the military and social crisis in Kosovo could have led to a decline of the immunization rate of the pediatric population. The evolution of the crisis in Kosovo and the duration of residence of refugees in Italy could not be predicted. Thus, monitoring the health and vaccination status of refugees was important to plan adequate preventive measures. In order to ascertain the immunization levels against vaccine-preventable diseases for which in Italy immunization is mandatory, a serological survey was conducted on a sample of 415 Kosovar children aged 0-10 years. The average rate of seroimmunity against poliovirus type 1, 2 and 3 was 90 %; 7,6% was seronegative for at least one or two poliovirus types and 2,4% completely lacked antibodies to all three poliovirus types. The immunization level against poliomyelitis found in Kosovar children seems to be satisfactory and quite comparable to that of Italian children as a consequence of the effectiveness of vaccination campaigns conducted by the World Health Organization. In contrast, a low coverage level was found against diphtheria. In fact, 19% of subjects was susceptible: the other 81% had a diphtheria antitoxin titer > 0.010 IU ml⁻¹. Moreover, only 68% of subjects was fully protected (titer > 0.1 IU ml⁻¹) while 13% showed only some degree of protection (antitoxin levels between 0.01 - 0.099 IU ml⁻¹). This low coverage rate can be probably attributed to a lack of basic immunization due to the political and social troubles that occurred in Kosovo in recent years. Moreover, since diphtheria and tetanus (DT) vaccines are simultaneously administered it can be presumed that the coverage level against tetanus is also inadequate. Our findings suggested a need for urgent public health intervention to increase the immunization rate against diphtheria and tetanus. For this purpose a vaccination schedule for children refugees from Kosovo, set up by the Italian Ministry of Health, included the administration of DT vaccine.

A disaster necessitates the rescue and evacuation of a large number of patients in a short time. Every hospital should prepare a Disaster Medical Plan (DMP) to face any kind of maxi-emergency. The DMP provides information to both health personnel and non-, to cover efficiently the phases of the maxi-emergency (admission of casualties, triage, diagnose, therapy and possibly hospitalisation) without interfering with the normal hospital routine.

On receiving the alarm, the most important steps will be to alert the personnel in "a cascade" and to organise the hospital.

The first structure to be set up in a disaster is the CRISIS UNIT who controls the entire operation with the co-operation of the CRISIS SUB-UNITs (health, materials and facilities, relationship with the families and media). For a correct functioning of the DMP, it is important to immediately provide an area to admit the patients. The stable patients or relatives should be transferred to the already determined places.

Specific areas with different colours will be organised in casualty according to the triage code. The areas need to have a rational logistical layout (unidirectional flow of patients and reduction of the confusion). The event weighs on the hospital organic till the trained teams arrive. After the triage, the casualties are treated according to the emergency protocol until there is admission, transfer or discharge.

The crisis unit together with the State Organisation should give the "green code" at the end of the alarm indicating the return to the normal hospital routine.

Once the alarm is given, there are 10 fundamental golden rules to follow:

1. Verify the call by contacting the Emergency System.
2. Call all the hospital personnel trained for this event (doctors, paramedics, auxiliaries and administrator).
3. Place a doctor experienced in emergency medicine to perform the triage.
4. Empty the first-aid area to receive the casualties.
5. Alert the operating theatres to be ready for any new emergency cases.
6. Call the radiologist in charge.
7. Alert the blood bank and the laboratories
8. Alert all the surgical wards
9. Activate the Hospital Security and the Police.
10. The health administration should co-ordinate this emergency.

The use of telemedicine for emergency services is a major issue in every industrialized country, and in the third millennium it will become increasingly important. It is important to underline that rapidity and appropriateness are the most effective parameters characterising an intervention and indeed the very first minutes after the accident are those the positive or negative outcome of the intervention often heavily depends on the services. Interactivity is the crucial component of telemedicine, intended as the remote delivery of health care to patients, and refers to person-to-person interactions added by means of basic clinical data exchange and transmission. In the United States, the constant evolution of telemedicine is testified by programs that represent creative and sustainable strategies for health care delivery, by capitalizing on clinical needs, business models and the use of appropriate technology. In the last years, telemedicine was successfully employed in rural sites, in the case of prisons and mental health services and its expanding contributions have been acknowledged, under the point of view of the quality of the results and the health care related cost decrease. The perspective of enabling people in remote and isolated regions to access highly trained medical specialists opens new ways and care possibilities to these patients. In a sample of schools of Syracuse, New York, telemedicine was also employed for health education of students and their families (Telehealth project) and for health education of students of the faculty of medicine as well, for exploring the potential uses of this technology. Even in Europe, a few pilot telemedicine programmes have been started (CoCo). One of these involved Denmark, Ireland, Spain, Norway, Greece, The Netherlands, Italy and England, and it works as a routine e-mail system, on a 24/24h basis. With regards to travels, telemedicine is now largely applied in emergencies occurring during voyages, as first aid instruction, cardiopulmonary resuscitation, hemorrhage shock, burns, dislocation head injuries, explosion, trauma, internal hemorrhage, drowning, asphyxia, etc, poisoning; instruction, a minimal interaction with physicians is needed but in the case of infectious diseases, a more complex strategy must be considered, such as taking into account the other persons possibly having been exposed to the disease. The last remark is particularly meaningful since the planning of prevention towards several people has to be provided. The European Commission for telematic application for health suggests that the patients are given the right to be informed about the use of health data, the right to access to his/her records and the right to object to some data. It is very important that people know more about themselves and actively participate in the health promotion, prevention and care under the context of the rights of standard legislature. The electronic healthcare data base will not only be accessible to the patient but it will also incorporate his own views and notes, resulting from self-monitoring of chronic illnesses and exercise performances, in order to define dietary programs and monitor the sport practice. We think that in the future, telemedicine will develop as an improvement of personal complete health record keeping in the continuity of care scenario. These are the scenarios of the next years, since the impact of telemedicine is expected to grow. It is important that in the future traveling learning this method. We believe that telemedicine in health education of students can be substantial, being young people increasingly accustomed with it in the very next future.

Accidents on Expeditions -A Study of the Incidence of Accidents Occurring on an Arctic Expedition.

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Expeditions and independent adventure travellers to remote, physically demanding areas are increasing. Recent evidence suggests trauma and accidents are the primary cause of mortality on an expedition may be different from other forms of travel, and young participants may face different risks than other age groups. This study reports the frequency and type of accidents during a six-week arctic expedition to the Stanning Alps, NE Greenland (72N, 24W) in July and August 1998. This involved 85 expeditioners - 16 leaders (age 21-54), including a doctor and 69 youngsters (age 16.5 - 20). There were 56 males (65.9%) and 29 females (34.1%) and all participants received pre-departure medical screening and briefing.

An anonymous post-expedition questionnaire was completed by 82 participants (96.47% return rate). Almost half of the youngsters (43.5%) reported an accident in the field. A total of 44 accidents were recorded, with each youngster reporting between 1 and 3 (median 1) accidents. The most common types were falls (31.8%), lacerations (22.7%) and burns (18.2%). Most accidents were subjectively graded as mild (79.5%) and only 4 were considered severe (9.1%).

Safety of the state roads is the main problem of countries which government policy expends the majority of the annual budget from industry of tourism. The present situation around the world is that annually more than 1 billion people die from traffic accidents.

Croatia is a tourist country. Our coast depends on safe roads. Our government has established contracts with most of the European countries about health assurances in case of an emergency. About 20% of the annual autopsies from the register of the Institute of Prosecture, Medical faculty in Rijeka, comes from automobile accidents, with the most usual findings of multiple body injuries, head injuries and hemorrhages.

Opatija is a seaside resort with 40km of roads. During the summer season when there is a large increase in the volume of vehicles, 48% of all automobile accidents occurred. What are the reason for this? From police records, 2/3 of blood alcohol tests taken after the accident were positive.

In this work we want to present the reasons for automobile accidents among the tourists visiting Opatija on vacation during the last 3 years. We will focus on what the consequences are and how the unknown traffic situation and unknown rules influence drivers and other participants of traffic.

Recent media attention has focused attention on the increasing frequency and severity of acts of violent in-flight behavior by passengers which is frequently, though not exclusively, directed at cabin crew. 'Air rage' as it is commonly termed, is of special concern to those in the travel industry as well as to passengers because of the all too frightening consequences of serious injury to, and incapacitation of, crew and others on board aircraft. Little is known, however, about, about passenger behavior in general, and the causes of air rage in particular. This paper offers a psychological perspective on the problem, including recent data on incidents, and concludes with some suggestions for combating in-flight violence.

International air travel has expanded constantly over the years. It is now very common that elderly people travel around the world and many of them have diseases of all sorts. Also younger people with a health problem like to travel.

Passengers with medical problems may require individual attention during (dis)embarkation, during the flight, during ground handling and/or in case of an emergency situation. Therefore airlines have developed criteria and guidelines for passengers and/or their physicians for those traveling by air.

This presentation addresses these criteria and guidelines. Also procedures for obtaining approval for traveling with serious diseases (such as cardiac or cerebrovascular diseases) will be discussed. Data of medical cases within KLM Royal Dutch Airlines will also be presented.

Airline travel is comparatively safe in spite of the world wide media attention that major airline accidents receive. The airline cabin provides a benign environment and most medical conditions requiring attention in flight are minor. To reduce the number of serious in flight medical incidents most airlines provide medical guidelines for prospective travellers and their medical advisors. The screening is imperfect and many airlines now carry extensive medical kits and some train the flight attendants to operate sophisticated medical equipment. The contents of medical kits, the training and the results are discussed.

Objective: This presentation reviews the problems that airplane travel poses for women with urogenital diseases, and discusses solutions to these problems.

Discussion: Worldwide, women are leading longer, healthier, and more productive lives. Unfortunately, this increased lifespan is paralleled by an epidemic increase in lower urogenital complaints such as incontinence and pelvic organ prolapse. For example, by the most conservative estimates, at least 30 million women in the United States suffer from debilitating urinary incontinence, and millions more from urinary frequency, retention, recurrent infections, and pelvic organ prolapse. A significant number of affected women feel forced to restrict their activities, including flying. Aviation travel presents unique obstacles to afflicted women, but fortunately most of these problems can be overcome by proper diagnosis, treatment, and advance planning. This presentation will discuss the most common urogynecologic disorders, their impact on aviation travel, and treatment strategies.

Conclusion: Urogynecologic diseases prevent many women from contemplating aviation travel. However, most of these problems can be overcome with fairly simple strategies by consultation with a urogynecologist and advance planning with the airline.

According to the Federation Aeronautique Internationale (FAI) statistics, fatal accidents in air sports range from 0 /10³ federated pilots in aeromodelling to 53 /10³ in rotorwing. This is a matter of concern for FAI's sports commissions as well as for the FAI's Commission Internationale Médico Physiologique (CIMP).

To deal with this problem we shall develop a better knowledge and understanding of the sports pilot's human factors, study that may be approached following the SHEL model.

For a better understanding of this model we describe the specificities of the different air sports (Aeromodelling, Hang-gliding, Paragliding, Amateur building, Balloon, Parachuting, Private pilots -fixed wing/rotor wing, Microlights, Soaring and Aerobatics), from the physiologic, medical and environmental perspectives.

It is doubtful that the existing sports pilots medical examination systems are of use in preventing fatal accidents or chronic incapacitation.

In order to achieve this, we believe that it is much more effective to establish similar procedures to the ones already in practice in the commercial airlines. This implies an active approach, that includes developing the role of the aeroclubs (improved training, safety seminars), an aviation medicine trained doctors "insider" work (teaching and counselling), the establishment of safer competition systems and the desing of safer aircrafts.

The recommended dosage and duration of protection of human immunoglobulin against hepatitis A is controversial. Until 1995 the recommended dose was 0,02ml /kg, with a maximum duration of protection of 3 months. In 1995 this policy changed to a much more complex scheme, using approximately the double dose, and with a dose dependent duration of protection.

The reason was a serological survey conducted by the Municipal Health Service of Amsterdam (Zaaijer et. Al. 1993), and a subsequent mathematical extrapolation of the results. Because of the weak theoretical basis and the practical implications of the change in policy, we chose to continue the old strategy.

Methods: We examined in retrospect the data of all travellers visiting our clinic (average 16000 annually) in the period 1994 – 1998, and all reported cases of hepatitis A in the same period (100 –150 each year). Approximately 7000 doses of human immunoglobulin were given every year to travellers going to endemic areas for a period of maximum 3 months.

Results: None of the reported cases of hepatitis A came from the group of immunised travellers, and none of these travellers reported with hepatitis A or related complaints.

Conclusion: Human immunoglobulin in a dosage of 0,02 mg/kg gives sufficient protection against hepatitis A to travellers to endemic areas for a maximum period of 3 months, despite the decrease in antibodies during the same period.

Currently there are an estimated 170 million HCV+ve humans world-wide. Annually around 48 million trips abroad are made. Although HCV is most commonly spread among injecting drug users (IDUs) through sharing of injecting equipment, enormous potential exists for transmission by other routes. Travel-related HCV dissemination has been a neglected issue. We therefore studied Sheffield HCV+ve patients' travel experience to identify 1) if potential exists for secondary HCV transmission within the countries visited and 2) if HCV+ve travellers are at risk of super-infection with hepatitis A (HAV) or B (HBV).

Methods:

Between 1991 and 1999, HCV clinic attendees completed a locally-modified THCVSG questionnaire. Results were analysed.

Results:

215 HCV+ve individuals (138M/77F) who had travelled to all five inhabited continents were identified. 73% were IDUs. 90/215 admitted to having sex abroad (56/90 with a non-UK person). 59/215 had received medical care abroad (5/59 received blood products). 10/215 had ear piercing. 6/215 admitted to tattoos.

53/215 and 18/215 reported prior HBV and HAV vaccination, respectively. 8/215 had received protective immunoglobulin.

Full serological data was available on 69/215 travellers. 48/69 had no serological evidence of prior exposure to HBV infection. Of these, 40/48 (83%) did not recall ever having been HBV-vaccinated or had a negative HBsAb titre – however, 20 of the latter group self-reported being vaccinated. 15/40 had sex abroad, 19/40 denied any sex abroad (6/40 declined to answer). Concerning sex with a non-UK person, 17/40 admitted to sex, 13/40 had no sex (10/40 declined to answer). 11 of the 40 non-immune had received medical care abroad (1/11 was transfused). In fact, only 8/48 (17%) patients had protective HBV antibody levels.

With HAV, 42/69 were non-immune (HAV IgG-ve). Only 4/69 had had HAV vaccine.

18/69 were both HAV-ve and HBV-ve and had received neither A or B vaccine.

2/18 had sex abroad.

Most patients did not use condoms regularly and most IDUs admitted to sexual encounters with known HCV+ve patients.

Conclusion:

There is considerable movement of Sheffield HCV+ve patients across international borders to all continents except Antarctica. Known HCV patients engage in high-risk behaviour and are inadequately immunised against HAV/HBV. Potential thus exists for secondary HCV spread and for the acquisition of HBV/HAV by HCV+ve patients, both preventable infections and both putatively capable of amplifying HCV's impact on the liver. HCV+ve patients need adequate pre-travel counselling. Because some individuals fail to sero-convert in response to vaccination, follow-up assessment is essential to achieve good results.

Serological Markers of Viral Hepatitis in Refugees from Kosovo.
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We evaluated the prevalence of hepatitis markers in a sample of Albanian Kosovar immigrants after their arrival in Southern Italy due to the recent war in the Balkan area. Five hundred and twenty-six subjects of all age groups were tested, after informed consent, for the prevalence of HAV, HBV, HCV and HEV serological markers. Among 526 refugees the prevalence of total anti-HAV antibodies was 86%. A relevant finding was the presence of anti-HAV antibodies in 60% of the children up to 10 years of age. In the other age groups the seroprevalence of anti-HAV was 100%. The prevalence of anti-HEV antibodies was 1.5%. Three percent of the subjects were positive for HBsAg and 17% were positive for anti-HBc (with or without anti-HBs). In children up to 10 years the prevalence of HBsAg and anti-HBc was 0,4 and 6% respectively. In subjects aged 11-20 years, 4.2% was positive for HBsAg and 20% for anti-HBc. In the age class 21-30, HBsAg carriers were 7% while 26% were positive for anti-HBc. Among refugees > 30 years the prevalence HBsAg was 4,2% and of anti-HBc 44%. Finally, the prevalence of anti-HCV antibodies was 0,5%. The results of this seroepidemiological study indicate a high circulation of HAV in the Kosovar population with prevalence rates similar to those of hyperendemic areas. In contrast, the prevalence of HEV antibodies was low and comparable to that of other European countries. The HBV infection seems to be at an intermediate level of endemicity. The prevalence of HBsAg found was significantly lower than that (13%) found in Albanian refugees previously tested for hepatitis markers. On the other hand, the risk of HCV spread in Kosovar immigrants seems to be very low.

There is considerable evidence of the alarming association between the pronounced transformation of norms and behaviors and extreme risk-taking among youth travelers. Yet, there is a paucity of comprehensive large-scale empirical studies on the risky behaviors of spring-break travelers. Of the very limited relevant studies, only Maticka-Tyndale et al. (1998) have delved into the potential influence of the vacation context on the risky sexual behaviors of students, but even then the importance of the role of substance use was overlooked. The present study will expand the exploratory findings of previous works by examining the “spring-break setting” and its disinhibiting nature using Triandis’ (1977, 1980) theory of interpersonal behavior—which has been instrumental in understanding and predicting overall health-related behaviors.

The objectives of the present study included: (a) assessing the role of the spring-break vacation environment as a facilitator of risky behaviors and identify those risk and protective factors that can explain casual/unprotected sex and subsequent HIV risk behaviors among vacationing U.S. college students; (b) evaluating the predictive efficacy of the theory of interpersonal behavior in the vacation-travel context for sexual practices so that a sound conceptual model can be developed to fully understand the phenomena; (c) providing health educators, policymakers, university administrators, economic development officials, and industry leaders with intervention and prevention strategies that have both public health and sustainable development applications; and (d) developing crucial baseline information needed to launch subsequent studies with national and longitudinal samples of youth travelers as well with other high-risk groups. Preliminary analysis of the 786 randomly selected subjects from two U.S. universities revealed significant gender-related differences in spring-break motives. More males than females indicated that their reason for going on spring break included opportunities for sex (57.8%), drinking (64.5%), and trying drugs (24.2%). Nearly half of the males and 41.2% of the females indicated that they drink alcohol just before sex and about 42% of both genders reported that they regret their sexual experiences following alcohol consumption. Agreements with friends about substance use and casual sex were found to be strong predictors of risky vacation behavior; 30.8% of males and 29.5% of females formed pacts with their friends to get drunk during spring break. Other pacts included agreements with friends to experiment with drugs and to have sex with someone new during vacation. A significantly larger portion of males indicated their intentions to have sex as a result of drinking (or using drugs) compared with females. Despite intentions for substance use and sexual activity, very small portions of the sample indicated health concerns; only 16.9% of males and 10.7% of females expressed concerns about the health risks of their spring-break activities. Additional analysis will assess the influence of perceived susceptibility to risk and anticipated severity of the consequences on intentions and ultimately on risky sexual behaviors.

The incidence of imported falciparum malaria has risen significantly in western Europe during the last few decades. Complicated cases are frequently seen, and the reported case-fatality rates are relatively high and range from 0.8% in Great Britain to 3.2% in Germany.

We performed a retrospective analysis of all cases of imported falciparum malaria diagnosed at 8 acute-care hospitals in southeastern Norway from 1988 to 1997. Of 232 diagnosed cases, medical charts were available for 222 (95.7%) cases. Except for 12 cases (5.4%), all had acquired falciparum malaria in sub-Saharan Africa. The two largest groups were immigrants residing in Norway and visiting their country of origin (34.7%) and Norwegian short-term tourists (29.3%). There were no fatal cases, and only 8 (3.6%) had a complicated course.

The low complication rates in this study could possibly be explained by the following factors:

- 1) The mean time lag from symptom onset to correct diagnosis and treatment was impressively short, only 4.6d (mean 3d)
- 2) Most cases (71.2%) occurred in assumed semi-immune subjects, e.g. immigrants from endemic areas or Norwegians with a history of previous malaria
- 3) A high frequency (30.2%) of the cases were breakthrough infections, i.e. cases who fell ill despite being compliant to recommended antimalarial chemoprophylaxis (mainly chloroquine plus proguanil)
- 4) When defining complicated cases of falciparum malaria, we adhered strictly to the WHO gravity criteria, which stress that lesser severe manifestations like jaundice, hyperparasitaemia and hyperpyrexia should be used carefully and only in the appropriate setting; and
- 5) In contrast to notification-based nationwide surveys and studies from specialized units, which may be selective and may overestimate the frequency of complicated cases, we were able to include practically all diagnosed cases in a definite geographic area.

In conclusion, our data suggest that the vast majority of cases of imported malaria may have an uncomplicated course.

Protective Effect of BCG Vaccination Against Different Forms of Tuberculosis in Children of Macedonia.

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Study objective: Assessment of the protection conferred by BCG given at birth against various forms of tuberculosis in children in Macedonia.

Material and methods: This was a matched case-control study. 202 cases of childhood tuberculosis were randomly selected from among 268 patients, treated during the 5-year period 1992 - 1996 in the Teaching Hospital for Pulmonary Diseases in Children in Skopje, Macedonia. For each case there were three controls, matched for age, sex and social status. They were chosen from among the children suffering from allergic diseases (asthma, obstructive bronchitis) treated at the same time in the same hospital. The effectiveness of BCG vaccination was calculated by means of the formula: $EV = (1-OR) \times 100\%$, where the Odds Ratio (OR) was estimated by means of three different methods simultaneously (Crude OR, Matched OR and Conditional Logistic Regression OR), along with the Prevented Fraction of Miettinen.

Results: BCG vaccination had a substantial protective effect against miliary tuberculosis (67%) and tuberculous meningitis (54%), while that effect was either modest or absent against the other forms of tuberculosis.

Conclusion: Further studies are warranted in order to confirm or reject the results of this study. The national tuberculosis program should implement the DOTS strategy along with the BCG vaccination, as the country has not yet met the epidemiological criteria for its discontinuation.

Almost two out of three tourists still experience traveller's diarrhoea during a 2 week stay at a high risk destination. Among the available preventive strategies, abstention from potentially contaminated food and beverages is not complied with, and prophylactic medication is certainly not to be recommended for every traveller going to a developing country in view of concerns about toxicity and costs.

A variety of enteric vaccines against enterotoxigenic *E. coli* (ETEC), *Campylobacter*, *Shigella* and also improved vaccine candidates against typhoid fever and cholera are currently being investigated. Among the most advanced is the ETEC-vaccine developed in Sweden, consisting of cholera rB-subunit and a variety of CFAs. In a randomized trial 800 Swiss and German travellers have volunteered to receive two oral vaccine doses at least 2 and 1 week pre-departure, respectively. Follow-up was conducted during the volunteers' stay in Africa. The study has just been concluded and evaluation will be conducted in the first half of 2000.

On the basis of previous phase I and II trials we can expect that this new vaccine will prevent >75% of ETEC-TD. Since some 60% of all travellers experience TD, and since ETEC is the causing pathogen approximately one third of TD cases, approximately 20% of all travellers will suffer of ETEC-TD, and >15% of all travellers will profit from the new ETEC vaccine. This would make the ETEC vaccine the one avoiding the greatest number of illness among all travel vaccines. On the other hand, it will be paramount to explicitly inform travelers that the ETEC-vaccine will by far not grant complete protection from TD.

Objective: Liposomes are considered prime candidates to improve the immunogenicity of both antigens with hydrophobic anchor sequences and soluble, non-membrane proteins or synthetic peptides. Until recently, only aluminum based salts were licensed as adjuvants for human use. Such vaccines tend to elicit a high rate of mild to moderate reactions at the injection site.

Since July 1994 a new hepatitis A vaccine has been licensed and marketed in Switzerland as worldwide first vaccine based on liposomes. So called immuno-potentiating reconstituted influenza virosomes (IRIV) serve as immunostimulating carriers for the hepatitis A antigens. The hepatitis A antigen is a highly purified and inactivated hepatitis A virion (RG-SB strain), produced on human diploid cells.

The vaccine has been extensively tested: chemical analysis, in vitro tests, preclinical tests and large clinical trials in several thousand volunteers have shown the optimal safety and high clinical efficacy of this new vaccine type. Tolerance was superior to comparable alum based products. Seroconversion after one single dose (containing 500 RIA-units) was between 95% and 100% after 14 days. This protection was still close to 100% after one year. There was a good correlation between ELISA and virus neutralization test in the early phase of immunization. This could be an indication that protection against hepatitis A with this vaccine begins in a very early immunization stage. This new vaccine is registered now in many countries of the world, including Italy and Sweden.

Tick-borne encephalitis (TBE) is endemic in a broad area from Central Europe across Western Russia and Siberia to Japan. Vaccine against TBE has been available for more than 20 years, but its use was exclusively limited to pre-exposure prophylaxis following a lengthy 0-28-300 day schedule. This vaccine has proven its worth in countries like Austria where persons at risk begin vaccination in the cold season when ticks are inactive. The problem arises, however, during the maximum tick activity in the early summer when numerous tourists from the USA, Canada, Australia and Japan visit European tourist destinations. In the above countries TBE vaccine is not available, meaning, that when tick bites in endemic areas occur, post-exposure treatment must be carried out. This is done using specific immunoglobulin – a very expensive preparation – offering up to 60% probability of protection. Worse, the children, a frequent target of tick bites, are not recommended to receive immunoglobulin up to the age of fourteen (Paul Ehrlich Institute guidelines, Germany). Shorter vaccination schedules were therefore attempted, particularly with Chiron Behring's new *Encepur vaccine*. A recent report "Lyme borreliosis and tick-borne encephalitis", (UNI-MED, Bremen, 1999: p.127) gives the results of a large multi-centric study of Encepur applied according to the standard 0-28-300 and an abbreviated

0-7-21 day schedule. The latter offered protection in 99% of vaccinees (N=379), measured by the neutralization test, as soon as two weeks after the second injection, i.e. on day 21. Alongside with this large study, a much smaller pilot study was undertaken in 20 vaccinees in which an even shorter "2-1" (0-0-7 day) schedule was tested. A double antigen load on day 0 was well tolerated and induced 100% seroconversion by day 14, according to both NT and ELISA test. This represents the first clinical proof that TBE infection can, presumably, be prevented by post-exposure vaccination in a manner similar to that used for rabies. The rapid induction of immunity is explained by a larger antigen load, the involvement of lymph nodes on both sides of the body in the immune response, and a natural maturation process of immunity. The latter, though vaguely known, apparently plays a crucial role in rapid immune response events.

Before starting a new travel clinic it is good to evaluate the "market" you'll be operating in. Which other travel clinics are around, is there a need for a new travel clinic, is the expected income from the clinic worth the effort, time and investment?

Another thing to look at is the national laws and guidelines. How can one become a yellow fever vaccination centre? What regulations are there pertaining to the coldchain? Which vaccination guidelines should be used and what training and experience is required for staff in your travel clinic. The administration and upkeep of documents is important. Computer based administrative programmes or even a combined administrative- travel advice programme may be available.

Quality of advice is of course of the utmost importance. Travellers need to be vaccinated and given malaria prophylaxis that is suited to their individual needs and concerns. They also need vaccinations and malaria prophylaxis that is the same as other people they will be travelling with. Otherwise travellers will feel that they may have been given the wrong advice and they will lose confidence in the travel clinic. For this purpose the following of guidelines is extremely important and should be stressed to the travel clinic staff. Especially if there are more staff working in the travel clinic internal consistency in the advice given and in the vaccinations prescribed is extremely important.

Systems should be implemented for checking that prescribed vaccinations are correct and according to the guidelines and for keeping internal consistency in the advice given to different travellers seeing different travel clinic staff.

Several advanced scoring systems have been established to rank patients in clinical intensive care medicine, some have been modified to evaluate the transport risk of intensive care patients, e.g. the Rapid Acute Physiology Score (RAPS).

Most existing scoring systems are unfavourable when used in aerotransport medicine, solitary ranking illness severity whereas other transport related aspects such as special risk factors and limitations for aeromedical transport are not considered.

The scoring system mentioned below is intended to be a tool for evaluating the illness severity of the patient; for choosing the sufficient transport team and for selecting the suitable mode of transport.

The Interhospital Air Transport Score (IATS) is divided into the three subgroups: Care level, Illness severity level and Transport ability level. The Care level ranks from low and intermediate to high care and points out the amount of attention or surveillance the patient requires. Illness severity level describes the medical status of the patient regarding circulation, respiration and cerebral function.

The last subgroup, Transport ability level, deals with aspects like co-operation, mobilisation, infectious impact, mechanical ventilation and air leaks.

In our own experience we found the IATS to be a useful tool for scoring patients undergoing aeromedical transport. Not only the user is provided with a clear impression of the medical status of the patient; but also IATS facilitates choosing the appropriate mode of transport.

Purpose: During flights, gastrointestinal gas extension often causes major problems like fullness and bloating. Therefore, we investigated, whether simethicone reduces gastrointestinal complaints during airplane travel.

Methods: 80 persons with a history of abdominal symptoms during previous flights planning an air travel of at least 5 hours were enrolled in 9 medical centres. Complaints of fullness, bloating, abdominal pain and other symptoms were recorded 24 hours before and during flights. Following an open cross-over design, each participant took simethicone on one flight, in randomized order on the outward or return flight. 82mg simethicone was taken with each meal beginning after the first symptom recording until the end of the flight. Primary variable was the sum of the symptoms fullness, bloating, and abdominal pain.

Results: 66 persons were evaluated, in which key-point data were available and consistent. Simethicone reduced fullness, bloating and abdominal pain. It reduced the sum score in cross-over analysis as well as in the evaluation of the first flight only. Treatment effect was more pronounced during the outward flight (before air travel) compared to the reward flight (after air travel), statistically a residual effect. 92% of the participants assessed the efficacy as good or very good. 97% rated the taste of the medication as good or very good. No adverse events were recorded.

Conclusion: The study showed that simethicone is well tolerated and highly effective in the treatment of gastrointestinal complaints during flights.

A Toddler with Dyspnoea Following Air Travel: A Rare Manifestation of a Diaphragmatic Hernia.

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A three year old, previously healthy boy was admitted to the hospital in Turkey, where he was visiting for holidays, because of vomiting, fever and dyspnoea. He travelled to Turkey aboard a commercial airliner two days before and was symptomatic since the flight. Because of severe cyanosis, a chest x-ray was done, by which a left sided pneumothorax was diagnosed. Two pleural punctures did not lead to an expansion of the left lung. Further diagnostic procedures, including an upper GI contrast radiography showed that the air in the left hemi-thorax represented gastric bubble and duodenum.

Following repatriation to Germany in an ambulance jet, the boy was successfully operated on and a left-sided dorsolateral diaphragmatic hernia with prolapsed stomach; parts of the duodenum, spleen and parts of the left kidney were closed.

During air travel in a commercial airliner, reduction of the cabin pressure to about 595mm Hg (7000 feet) led to an expansion of gas volumes to a plus of 30%. Together with the consumption of soft drinks, the increasing volumes of the stomach bubble and gut may have elevated the abdominal pressure to cause a herniation through a diaphragmatic defect.

Although most of these defects are diagnosed within the first days of life, one should be aware that older children with undiagnosed diaphragmatic defects may become symptomatic during air travel. If transported with aircraft for medical reasons, these flights should be performed with a sea level cabin pressure.

A careful interpretation of the chest and upper abdomen radiography with a look for location of the gastric bubble can prevent the clinician from a misdiagnosis.

The Medical Aspects of a Large Scientific and Educational Marine Project in the Indian Ocean.

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The *Shoals of Capricorn Programme* has been set up by the Royal Geographic Society (with the Institute of British Geographers) and in association with the Royal Society and the Governments of Seychelles and Mauritius. The project is investigating the remote Mascarene Plateau in the western Indian Ocean through an integrated marine research and education initiative, developing knowledge and skills for the effective management and protection of marine resources.

This entails maintaining several base camps mainly on remote islands with permanent staff, and a large number of visiting scientists and students, as well as several cruises on research vessels. The whole project, which will continue for three years involves numerous people working in isolated locations in a marine environment with the possibility of tropical diseases, envenomation by marine and terrestrial organisms, and the hazards of working underwater.

This paper will describe how the medical aspects of this project are being managed; preparations, risk assessment, first aid training, equipment, back up service, collaboration with local health professionals, evacuation of casualties, etc.

This could provide a model for any organisation taking a large number of personnel to a remote location for whatever purpose, i.e. commerce, exploration, tourism, etc.

Some of the problems encountered to date will be discussed together with their management.

The author collected data in the year 1999 about the Rotterdam Harbour

A total of 30,500 ships visited Rotterdam with an average of 10 seamen per ship. Thus, in the year 1999 more than 300.000 seamen visited Rotterdam.

Of these 300.000 men, more than 3000 visited the Port Health Centre and data has been collected about the diagnosis (ICD9 code), their nationality and age.

Analysis of this data indicates that the visit of 300.000 seamen in Rotterdam has not had an epidemiological effect in Rotterdam or the Netherlands.

Conclusion: no special new quarantine or other measures are necessary to protect the Rotterdam population.

Marine transport has an important meaning for the economy of the Ukraine. Under the conditions of an acute economic crisis a number of suicides, cases of sudden death, psychic disorders among crew members during sea voyages have increased. This situation to a certain extent is aggravated because of alcohol and narcotics use. Economical losses due to their use are not calculated in the Ukraine yet. We consider a seafarer to be an international traveler and the problem of drug addiction is very prompt among them. Recently the government and Ministry of Public Health of the Ukraine have adopted several documents about prophylactic narcotics selections improvement. According to these documents an obligatory scope of investigations includes medical narcotics examination, psychological testing and laboratory investigation of blood serum gamma - GT. We cannot but mention that determination of gamma - GT for the screening of narcotic addictions is not sufficient. According to the rules of the American Coastal Guide a seafarer should be tested for the presence of five narcotics: marijuana, cocaine, opium, phencyclidine and amphetamine. The same rules provide five types of testing: before pre-employment, periodical, sudden testings, testing after incident, testing in accordance with a reasonable cause. Such a system of laboratory diagnostics allows to reveal the abuse of narcotics in seafarers. Thus, laboratory screening of narcotics among seafarers in the Ukraine besides examination of GGT, should include IFA with exposing of 5 groups of narcotics. For laboratory screening of abuse of narcotics they should examine liver function, definition of transaminases - GGT, SGPT, SGOT, cholesterol and blood urine acid. At the present time the problem is far from its solution in the Ukraine.

Why Biological Terrorism Presents the Greatest Danger

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The deliberate use of disease as a weapon, against humans, animals or plants, is totally prohibited by the Biological and Toxin Weapons Convention which entered into force in 1975. However, today the use of biological weapons by rogue States or terrorist groups is increasingly recognized as presenting the greatest danger of all weapons of mass destruction. The dangers posed by weapons of mass destruction are compared and historical developments, including the Russian and Iraq biological weapons programmes, examined to show why biological weapons TODAY present the greatest danger. They are the easiest to acquire, they have the weakest international prohibition regime and yet their effects can be comparable to those of nuclear weapons. The counters to this danger both internationally and nationally are outlined and form a 'web of deterrence' comprising strong prohibitions, effective controls of biological materials, broad-band responses and protective measures, and determined national and international response to use or threat of use. The importance is stressed of integrating these counters into international initiatives to wage war on disease, whether natural or deliberate.

Iraq had huge programs for developing weapons of mass-destruction, especially in the 1980's. This offensive biological and chemical weapons program came to light during the Iran - Iraq war when chemical warfare agents were used. After the Gulf war in 1991, the Nuclear-, chemical and biological programs have been thoroughly investigated by the UNSCOM. Among these, the biological weapons program has been the most difficult to penetrate. A brief survey of what has been revealed between 1991 and 1999 will be presented.

The Iraqi offensive programs as well as the activities in the Japanese Aum Shinrikyo Sect have galvanised the Swedish Government to review the Swedish preparedness against weapons of mass destruction. From a Swedish point of view this will include threat evaluations, scenarios and measures when it comes to information, education and equipment.

A successful response to the deliberate use of biological agents as weapons obliges national authorities and medical institutions to adequately prepare themselves. The healthcare system is only one layer of response to the threat of which hospitals are an important but not the sole component. The primary healthcare setting and other pre-hospital care by public health authorities and emergency service providers are also critical to avoid flooding and possible contamination of hospitals. However, hospitals will have to cope with patients who can not be treated outside this setting and those who bypass pre-hospital care.

A higher probability of a successful response is based upon preparatory steps that include some very important elements: 1) education and training of medical staff; 2) the ability to monitor and define the extraordinary illness from background illness; 3) early detection and identification of the agent; 4) established stockpiles of medical supplies, medications and antibiotics, vaccines and medical equipment like mechanical respirators; and 5) a high level of coordination among those who take part in such an event in the hospital and outside the hospital including other governmental agencies like intelligence authorities.

Authorities must perform drills to assess and evaluate the level of preparedness and to refine these plans. Because of the complexity of that challenge, it is recommended that guidelines and directives be formulated on a national basis and introduced in a "top-down" mechanism. Hospital performance in a biowarfare scenario, and especially with an infectious agent, is a tremendous challenge. It presently poses more questions than answers. Therefore, it is highly recommended that we think through the problems and prepare in advance.

Public health bioterrorism preparedness activities in the United States are focusing on a series of critical biological agents that may be disseminated to a large civilian population. These agents may not only be associated with significant morbidity, mortality, and potential social disruption but the response to each requires specific public health preparedness activities. The highest priority agents for broad-based preparedness include *Bacillus anthracis*, *variola major*, *Yersina pestis*, *Francisella tularensis*, *Botulinum* toxin, and the filovirus and arenavirus hemorrhagic fevers. Other agents, especially foodborne and waterborne agents, are also of concern and will be addressed with targeted resources. Rapid and efficient detection and response will be the cornerstone of limiting the consequences of bioterrorist acts and will require public health to develop new partnerships. The activities to assure a precise response include pre-positioning laboratory diagnostics, instituting surveillance mechanisms, stockpiling therapeutics, establishing and exercising response plans, and training healthcare and public health professionals. These activities hinge on ongoing research and communication linkages not only between healthcare and public health personnel but throughout the public health community from local health authorities to the state health departments and federal agencies.

Relapse of *P. vivax* malaria following standard primaquine dosing has been reported from several areas of the world, and more recently also from sub-Saharan Africa.

We describe 8 episodes (in 5 patients) of failure of standard-dose primaquine to eradicate *P. vivax* in non-immune Israeli travelers to Ethiopia. We retrospectively calculated the dose of primaquine per kg body weight for each treatment course and compared successful versus failed treatment courses. Standard-fixed dose primaquine resulted in a low total dose per kg ratio in heavy individuals. In a total of 23 treatment courses, the mean dose in 8 failed treatments was 2.5 ± 0.3 mg/kg as compared to 4.4 ± 0.5 mg/kg in 15 successful treatment courses ($p < 0.00001$). Weight-adjusted dosing regimens may prevent inadvertent subtherapeutic dosing and apparent primaquine failure. In our study no primaquine failure was observed with doses above 3.5 mg/kg body weight.

Consideration should be given to adjust the dose of primaquine according to body weight. For those infected by strains from the region of horn of Africa a dose > 3.5 mg/kg is preferable.

Many mechanisms involved in the pathogenesis of malaria have been defined during the last decade, from the understanding of the role played by the cytokines to the observation of the "cytoadherence" and the "rosetting". However, the pathogenesis of the thrombocytopenia that frequently occurs in malaria infection is not completely understood. Our study was based on 10 patients, 7 men and 3 women with an average age of 37 (range 23-61), infected with *P. falciparum* malaria, all of them became infected in highly endemic malaria areas of Africa. On admission 7 patients (70%) were thrombocytopenic (PLT $<150 \times 10^3/\text{mm}^3$), 3 of them had a platelet count $<100 \times 10^3/\text{mm}^3$ and 2 $<50 \times 10^3/\text{mm}^3$. Thrombocytopenia was most marked in those with severe falciparum malaria, although bleeding complications did not occur in any of them. After parasitic clearance using anti-malaria treatment, 90% of the subjects showed an increase in their platelet count. None of the subjects showed a clinical manifestation of DIC, although elevated D-Dimer levels were found in all of them, higher in those with severe malaria; these values showed a significant decrease after parasitic clearance. The search for anti-platelet antibodies (IgG), carried out according to the method suggested by Dixon and colleagues, showed elevated levels of platelet associated IgG (PAIgG) in 5 of 7 thrombocytopenic patients; after parasite clearance only 3 were still positive although the levels were reduced. Furthermore, the immunoenzymatic test (MAIPA), to detect IgG antibodies to HLA Class 1 antigens and platelet glycoproteins results suggest that thrombocytopenia in acute malaria infection is immunologically mediated. At first glance the origin of this phenomenon could be related to the appearance of antibodies directed against platelet constituents, however this hypothesis seems implausible given the disappearance of the platelet associated antibodies after resolution of the acute symptoms and achievement of parasite clearance, whereas an anti platelet antibody would have the function of an autoantibody and tend to perpetuate even when its causal factors had disappeared. It seems, therefore, more probable that the antibodies we found are directed towards platelet-bound malarial antigens. This would explain on the one hand the disappearance of thrombocytopenia once the malaria antigens have been removed from the blood and it would also explain that the early manifestation of thrombocytopenia, may be caused by platelet sequestration.

Dengue Surveillance in Emergency Relief Workers in Puerto Rico (PR) Following Hurricane Georges, 1998.

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To quantify the risk of dengue in a group of electric power line workers in PR from Oct.8 to Nov. 6, 1998, following Hurricane Georges and during a dengue epidemic, we obtained, at their departure, a blood specimen and information on illness and activities on location. Symptoms experienced in the 2 weeks after departure were elicited by mail or telephone, and blood specimens were requested from those with symptoms. A case of dengue-like illness (DLI) was defined as a participant reporting fever or chills, and one or more of the following symptoms while in PR or within 2 weeks of departure: headache, retro-orbital pain, myalgia, arthralgia, rash, or any hemorrhagic manifestation. Laboratory diagnosis was performed through virus culture on departure sera of those ill in PR, serologic tests for anti-dengue IgM on all samples, and IgG on follow-up samples. Of 222 workers, 204 (91.9%, mean stay 16 days) participated, of whom 75% gave departure sera. Among respondents to specific questions, 82.4% (164/199) reported mosquito bites, 96.9% (156/161) having insect repellent available, and 71.8% (140/195) using it at least one day. Twelve (5.9%, 95% confidence interval - CI: 2.7-9.1) reported DLI, and 11 provided acute and follow-up specimens. No dengue virus was isolated in the 4 cases with onset of illness in PR. No anti-dengue IgM and IgG antibodies were detected in all 11 cases. The incidence of dengue was low (point estimate 0; upper 95% CI: 1.5%), despite work in dengue-endemic areas during periods of relatively high transmission. Because dengue is a risk to health in tropical areas, visiting relief workers should be encouraged to protect themselves against mosquito bites to minimize dengue risk.

Dengue fever is classified by degree of severity: classical dengue fever, dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS). The cycle of Dengue viruses types 1-4 (family *Flaviviridae*), involves humans and mosquito vectors (*Aedes aegypti* and *A. albopictus*). DF is endemic and epidemic in tropical Africa, America, Southeast Asia and Oceania.

Since about 10 years, *A. albopictus* has been introduced also in Europe: in Italy and Albania. These introductions were made primarily through imported tyres containing eggs and/or larvae of *A. albopictus*. The spread of this vector may be a potential threat for the emergence of DF in Europe.

The present report shows that DF constitutes a risk for tourists who have travelled to tropical countries. Each year several cases are diagnosed in Italian tourists and workers travelling from endemic areas. From 1993 the number of cases is increasing, as a consequence of both an improvement of medical information and the diffusion of tourism in tropical areas among Italian travellers. Because of the lack of an efficient and safe vaccine, the prevention can be only performed by avoiding mosquito bites. Thus an important role could be played by medical staff and tourists operators giving a correct information about risk and personal care measures.

In Croatia as tourist country, it must be of some importance to study infective diseases (in this mountain-seaside tourist region) because of this importance and extensive migration of people, especially in summer.

Purpose: Correlation between microbiological, infectiological and epidemiological characteristics of *Lyme borreliosis*.

Methods: Following up the clinical condition of patients in hospitals in Rijeka, we did enzyme immunoassays (EIA, Behring) of *Borrelia burgdorferi* IgG and IgM from blood and CSF of 700 clinically suspect examinees from 1994 to the end of 1998. We presented graphical distributions according to criteria of age of examinees, seasonal variations of incidence and calendar year.

Results: In the surveillance period of 4 years, we found:

- about 50% serologically blood positives
- about 10% serologically positive CSF
- higher prevalence of IgG than IgM reactive blood tests;
- statistical significance's among age classes;
- seasonal variation in favor of higher incidence in late summer and autumn
- increasing incidence from year to year.

Conclusion: At Croatian side of Northern Adriatic the institution of Rijeka Public Health Service surveys infective diseases. Despite "spirochete peculiarities" of *Borrelia* EIA as opposed to regular schemes of seroconversion in any other particularly viral EIA, one still can find some indication of endemic (sub) territories and populations at risk and this may help to monitor changing epidemiology.

There is an increasing risk of contracting TBE when travelling in certain parts of Europe and Asia. These risk areas correspond with the distribution of the main ixodid tick vectors of TBE virus, *Ixodes ricinus* and *I. Persulcatus*. The annual incidence is several thousands of cases. The disease has been included in the European Network for imported Virus Disease (ENVID). Imported TBE cases have been observed in countries without endemic areas (United Kingdom, Spain) or with such low virus activity (Italy) but also in countries with endemic areas of high virus activity (Germany, Austria, Sweden). In regions where TBE is unknown imported cases go under-diagnosed because laboratory diagnosis is unavailable.

Vaccination is the best and very effective means for protection against disease for travelers with outdoor activities in endemic areas during the period of tick activity, which lasts from end of March through September/October. However, in order to properly identify the exposed population and to utilize this vaccine in an optimal way, the characteristics of endemic areas have to be understood in detail and the knowledge thereof has to be continuously updated. Our own study presents detailed investigations on the prevalence of TBEV in ticks sampled in hot spots known as high risk areas in Bavaria and Baden-Wuerttemberg, Germany, using a nested RT-PCR and statistical methods for pooled samples.

The sharp increase in Peace Support Operations has provided much valuable medical information and many lessons have been identified. This presentation will discuss some of these issues following the timeline of pre-, during and after-deployment.

Gained from the experiences presently many nations have tailor made preventive programmes available, usually resulting in well-protected forces in theatre. However, because of the specific working conditions, the concerns about the (re) emerging infections are a major challenge for the military. Mostly the preventive policies are similar to the civilian guidelines unless specific military reasons indicate otherwise.

Despite sound preventive policies several outbreaks occurred among military populations over the last few years. Most of these never became a threat to the mission as shown in the results from the medical surveillance during the deployments.

During most missions some kind of (multi-) national morbidity surveillance programme existed which resulted in interesting information. For example most traumatological cases came from traffic accidents and sporting activities and not from military hostilities. Other changes in military medical support could be found in the casualty transportation such as increasing use of helicopters and early evacuation to home nations. Furthermore occupational health care plays a relatively new role because of the attention paid to possible exposures to toxic substances such as asbestos and metals. Finally the mission in Albania (AFOR) and recent evacuation operations showed more involvement in direct humanitarian assistance, introducing new challenges for the co-operation with other organisations involved.

The post deployment phase with all kinds of possibly mission-related morbidity still provides many challenges for the military medical services. Despite many interesting assumptions this area proved above all to be extremely complex.

As with many other Nations, the UK has deployed military Forces on a number of Peace Support Operations in recent years. These pose potentially significant threats to both the civil populations remaining in the area and to those military personnel who are deployed into the country. Frequently, infrastructure and industrial installations have been damaged, either deliberately or accidentally during periods of unrest or internal conflict, and many of those personnel responsible for maintaining the safety of such installations may themselves have been casualties or be displaced. The UK has developed a strategy of Health Risk Management within an overall Framework of Force Protection measures. This involves a 5-step approach. This involves the Identification of Hazards, the Definition of the Population at Risk, an Assessment of the Risk, Management of the Risk and the use of Audit and Surveillance to measure the effectiveness of the other steps. This approach is consistent with UK National legislation and NATO military doctrine. The presentation will illustrate the principles being developed by the UK by describing a situation in Bosnia whereby UK (and other NATO personnel) were exposed to the atmospheric pollution emanating from a burning municipal refuse tip. It will show the importance of carrying out parallel studies into atmospheric environmental monitoring combined with a focused epidemiological study and the necessity to track affected individuals both during and after the deployment.

The BIOFORCE during Kosovo crisis. Measles and Polio Immunisation Campaign, April 1999.

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The Kosovo crisis started in Albania on March 23rd, 1999. Just after arrival of refugees, 10 cases of measles were observed and reported by NGO's medical staff. Albanian health authorities had no experience in refugee crisis management, were not ready to implement accelerated campaign in the national Expanded Program of Immunisation, and had not planned for an extra vaccine supply. French Humanitarian Headquarter in Tirana asked help of Military Bioforce to lobby to implement an Accelerated Campaign against Measles to Albanian health authorities. The Secretary of Health agreed Measles and Polio vaccination campaign in the both northern counties of Kukes and Has. From April 1999 the 23rd, main NGO's conducted the Accelerated Campaign in Kukes and Bioforce in Has. The target population included Albanian and Kosovo refugee children. A wide age group for Measles immunisation was chosen (6 months to 11 years) to avoid any risk of epidemics. The age group for Polio immunisation was under 5 years. Five immunisation teams, composed of Albanian and expatriate personnel administered 24,669 doses of Measles vaccine and 11,122 doses of Polio vaccine. Since no precise demographic data were available, an immunisation coverage survey assessed the results of the Campaign. The survey, based on the EPI-WHO cluster sampling method, with slight modifications due to lack of precise demographic data on population, was conducted on May 1999, the 6th and 7th, by a joint Albanian-Bioforce team of 11 paramedical agents of both countries supervised by epidemiologists. Independently of immunisation status, a census sheet recording the under 12 years old children of all Kosovo refugee families living in Albanian families was filled out. Cluster effects and corresponding 95% confidence intervals were computed for each rate. In total, 220 Albanian and 213 Kosovo children, aged 6 months to 11 years, were included in the survey. According to observation of Individual Immunisation Cards (IIC), 69.5% of Albanian children were immunised against Measles. For the children with IIC, we observed that 60.1% were immunised during the Campaign. Only 100 under 5 year old Albanian children were included in the sample. According to observation of IIC, 59% children were immunised against Polio. 85.4% of Kosovo children were immunised against Measles. For the children with IIC, we observed that 75.8% were immunised during the Campaign. Only 100 under 5 year old children were included in the sample. According to observation of IIC, 79% children were immunised against Polio. At time of survey, we counted 253 refugee families (father +/- mother + children) located in 213 Albanian families, i.e. a ratio of 1.2 refugee families per flat. Refugee and Albanian families have a very close number of children under 12 (2.5 in Albanian and 2.3 in refugee families). The number of children ranges from 1 to 7 in refugee families (Mode and Median = 2). The Immunisation Campaign was justified by the need for controlling risk of Measles outbreak in refugees and thus a wide age group was targeted: 6 months and 11 years. For the refugee population, results of the Measles Immunisation Campaign are quite good, 85%. For Albanian children, the level is lower. No more Measles cases were observed in May and June in both southern counties. Nearly 20 years after its setting up, Military Bioforce was for the first time displayed in Europe. The wide experience acquired in tropical Africa and Latin America by French surgeons in the field of Public Health and Outbreak Control was immediately transposable in this new circumstances.

At the beginning of the Kosovo crisis a great number of refugees crossed the border with Albania using various means of transportation. The greatest number of refugees reached the city of Durres intending to immigrate to other European countries. The structures of reception and sanitary have been overloaded from a great number of people with disparate pathologies. Such pathologies were caused by the war events and by pre-existing poor sanitary standard increased by the uncomfortable conditions of escape.

On April 4, 1999 a Sanitary Center of the Italian Army was installed in the city of Durres. The complex came from Italy by the Navy Ship San Marco and was organized in such a way as to be able to line up in an open area under tents with a recovering potential of 100 beds. However, instead of tents, in Durres a small building was used that had been built for a pediatric station. Such a solution allowed an immediate beginning of sanitary activity.

The assignment was to guarantee the specialist sanitary consultation for outpatients and the possible recovering in a protected environment for the fugitive Kosovars in need of care, present in the refugee fields.

Those fields situated near the city guaranteed a fresh level of medical care provided by a physician during the day time and one nurse during the night.

With the arrival of more fugitives, the fields were overloaded and many refugees found reception in Albanian families (there were more than 25,000 refugees in Durres), therefore, it was considered opportune to extend the assistance to the Albanian civil population.

The personnel serving in the military hospital consisted of: medical officers, a veterinary officer, a chemist officer, NCO nurses, a NCO technical radiologist, voluntary nurses from the Italian Red Cross and NCO specialists for disinfection services.

The logistical support of the structure initially came from the Alpine Troops Command from Bolzano and subsequently from the Alpine Brigade Taurinense parts of the Task Force North in the Allied Harbour Mission. Security was assured since the beginning from an alpine corps of 3 RGT.

In the first two months of activity, during which the maximum rate of refugees was reached, were effected about 17,000 sanitary performances.

This experience was of maximum interest for the human and social impact and for the large variety of the casualties and clearly showed that a medical mass casualty needs a well trained, self sustainable, logistical supported military organization.

In September 1991 Dubrovnik was surrounded and cut off from land by the Serbian army. On October 1 the city was cut off from the sea by sea blockades imposed by the army. Water and electricity supplies were also cut off. No person could come and no person could go out. The city was practically sealed off from the outside world. A population of about 34,000 citizens (statistical census 1991) plus about 18,000 who fled to the city from the surrounding places and villages were crowded on about 3.5 km of unoccupied city territory.

This study focuses on humanitarian aid convoys of ships who actually broke through the blockade and were the first to reach Dubrovnik's people. The ships belonged to European countries, members of NATO (mostly Italian and French) and 4 ships of the Croatian civil company "Jadrolinija" from Rijeka. With the Italian military ship San Marco 819 persons among them 350 children have been evacuated, with the "Palladio" 879 persons among them 410 children have been evacuated, with a Unicef ship 132 children with mothers have been evacuated, with the "La Rance" 394 persons among them 190 children have been evacuated. Thousands of others, mainly mothers and children have been evacuated with 4 ships of the Croatian company "Jadrolinija".

The contribution of the European Community observer teams on the mentioned Croatia ships were of a big help (e.g. most of the crew members were firmly convinced that their effort were crucial in the course of events). A total of 17,000 to 19,000 refugees (based on estimates of the crew members, personal communication), were evacuated.

TRAVEL MEDICINE IN EUROPE - Travel medicine practices within Europe and recommendations for the future: a study carried out for the European Commission during 1999-2000.

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This was a year long project which began in March 1999, conducted on behalf of the European Commission. It was co-ordinated by the Scottish Centre for Infection and Environmental Health (SCIEH) in collaboration with the Société de Médecine des Voyages (SMV), France.

It has provided a detailed inventory of current travel medicine practices within the European countries and proposals on how networks could be established at Community level for exchanging information on communicable disease health risks, preventive advice and the monitoring of travel related communicable diseases.

This presentation will describe provision of travel medicine services and how it varies between countries. It will also consider differences in education and training for health care advisors and variations in guidelines provided by national authorities. Finally, suggestions will be presented on how current surveillance practices may be improved to make them relevant for travel related illness. Feedback will be invited.

More cases of *falciparum* malaria are being imported into developed countries as increasing numbers of people visit malaria endemic areas of the tropics. New chemoprophylactic agents are needed to address the problems of drug resistance, compliance, tolerance and efficacy in non-immune populations. There are at least 3 new antimalarial drugs that may have a role in the prevention of malaria in travelers: azithromycin an antibiotic, atovaquone/proguanil a new proguanil combination, tafenoquine a primaquine analogue.

Azithromycin is an antibiotic related to erythromycin that has antimalarial activity. Field trials in Kenya, Thailand and Indonesia indicate that the protective efficacy of 500 mg daily ranges from 70-80% versus placebo. Since the efficacy of doxycycline 100 mg daily is >90 when taken with a high degree of compliance, it is unlikely that azithromycin will ever be widely used for malaria chemoprophylaxis.

Atovaquone/proguanil a new proguanil combination that is approved in more than 30 countries for the treatment of acute, uncomplicated *P. falciparum* malaria. Clinical trials in over 1000 volunteers in malaria endemic countries in east, west and southern Africa have demonstrated the efficacy and safety of atovaquone/proguanil for the short-term prophylaxis (10 to 12 weeks) of malaria in adults and children. In three placebo-controlled trials, 331 subjects received 250 mg atovaquone and 100 mg proguanil hydrochloride (or an equivalent dose based on body weight in children) once daily for 10-12 weeks. The overall efficacy for preventing parasitemia was 98%. The combination is well tolerated with few safety concerns.

Tafenoquine (AKA WR 238605) is a long-acting primaquine analogue that during pre-clinical trials was found to be more potent and less toxic than primaquine. The potential toxicities of concern are the same as primaquine: methemoglobinemia or hemolysis in glucose 6 phosphate dehydrogenase (G6PD) deficient persons. Over 2000 persons have received tafenoquine during 5 field trials in Kenya, Ghana, Gabon and Papua New Guinea. Efficacy rates >90% were demonstrated in some dosage regimens. Short course regimens (over 3 days) have shown protection against *P. falciparum* lasting for up to 3 months. Tafenoquine still needs a marketable formulation and further field efficacy trials but may offer a good future option for chemoprophylaxis.

The campaign launched at the end of the 1950s eradicated malaria in all the countries of the Soviet Republics, except in residual foci in Azerbaijan and Tajikistan. By the 1980s, malaria was nearly a forgotten disease in the Soviet Republics but in the 1990s, some of the Newly Independent States in central Asia and in the Caucasus have experienced considerable problems in preventing and controlling malaria epidemics.

Since 1990, the disruption of political and traditional links among the former republics of the USSR has resulted in political instability, difficult economic conditions and human migrations. These factors provoked an exodus of trained public health personnel, a sudden reduction in the quality of health care and in some cases a complete breakdown of health services. The shortage of essential equipment and supplies for malaria prevention and control has weakened malaria prevention activities. In particular, antimalarial drugs and insecticides that were once purchased abroad by the Ministry of Health of the USSR are no longer available. Lack of knowledge and experience in malaria prevention and control among health service staff who have not seen malaria for 30 years, is another obstacle in implementing effective preventive and control measures.

The malaria epidemiological situation in some of the former Soviet Republics appears to be very serious. At present, large-scale malaria epidemics are in progress in Azerbaijan (5 175 *vivax*-cases in 1998) and Tajikistan (19 174 *vivax*-cases and 187 *falciparum*-cases in 1998). Also Armenia is experiencing a small-scale epidemic (542 *vivax*-cases in 1998).

The epidemics in Azerbaijan and Tajikistan have a considerable impact on the malaria situation in neighbouring countries. Cases have been imported from Azerbaijan to the Russian Federation and Georgia; and from Tajikistan to the central Asian republics and to the Russian Federation. These countries are finding it increasingly difficult to maintain the malaria-free status they achieved from the huge effort made some years ago. Indigenous cases of malaria, which originated from imported cases, have been reported in Kazakhstan, Kyrgyzstan, the Republic of Moldova, and outbreaks have occurred in Georgia, the Russian Federation and Turkmenistan.

There is a real danger that the 50 years of work by the World Health Organization, the financial resources invested by local governments in malaria eradication and in the maintenance of the results, could be jeopardized, unless effective malaria prevention and control activities will be effectively implemented. To meet the challenge of malaria resurgence in the WHO European Region, the Regional Office for Europe has developed a comprehensive strategy to Roll Back Malaria selecting long-term sustainable actions.

The timing of the presentation of falciparum malaria travellers from Western countries has not been well investigated (¹). However in immigrants and visitors to the UK, falciparum malaria is unexpectedly frequent and constitutes around 30% of all malaria surveillance reports. Many of the semi-immune visitors have been noted to develop malaria symptoms soon after their arrival in the United Kingdom (UK). To investigate the pattern of onset of symptoms of laboratory confirmed malaria, a prospective study was undertaken which examined malaria patients by country of residence, date of arrival in the UK and immune status. Mean days to onset of first symptoms after date of arrival in patients with falciparum malaria was 6.4 days (median 5) in UK visitors and 4.2 days (median 4) in returning Western residents. Patients with vivax/ovale malaria presented a mean of 78.8 days after arrival. A poisson model of three periods, before, around and after travel revealed a 5.4 RR of malaria presenting in the period around the date of travel. Circumstantial evidence of the influence of both travel and stress have been reported as a probable precipitant of malaria by other investigators. The findings in this study suggest that host factors around the time of travel may influence the onset of symptoms in both semi and non immune travellers. One possible theory is that clinical disease may be precipitated by changes in host immunity relating to stress associated with travelling. The paper will examine how host factors may influence the onset of clinical malaria around the time of travel.

(¹) Reburn H, Behrens RH, Warhurst DC, Bradley DJ. The effect of chemoprophylaxis on the timing of onset of falciparum malaria. *Trop Med Int Health* 1998;3(4):281-5

Malaria has always been an imported disease in Italy. After the eradication of malaria in the fifties, the only cases of malaria registered in Italy have been imported. A few cases were induced or cryptic. In 1997 an introduced case was registered in the Province of Grosseto Region, Toscana. The number of imported cases of malaria has progressively risen from about 100 cases of the seventies up to nearly 1000 cases at the present time.

In 1998, 990 cases (provisional data) have been confirmed and reported to the Ministry of Health with a 21% increase in comparison with the preceding year. Taking into account the average incidence of imported malaria in the period 1989-1998, the increase with respect to the period of 1979-1988 has been 78%. Two persons died of malaria in 1998. Ninety percent of the cases of imported malaria were in persons returning to Italy. *P. falciparum* was responsible for 82.8% of the cases of imported malaria in 1998, *P. vivax* for the 10%, *P. ovale* for 2.8% and *P. malariae* for 2.5%. Mixed forms were responsible for the 0.6% of the cases, whereas in 1.3% of the cases the plasmodium responsible was not identified or reported.

These data emphasises the need for more intensive information for travellers to malaria endemic areas to promote better use of optimal pharmacological and personal protection measures.

Concept: Grave shortages of blood may occur in many countries. These can result from cultural taboos against donation, inadequate funding of the local transfusion service, a high incidence of transfusion transmissible diseases or any combination of these factors. Someone visiting such a country, requiring a transfusion, may, by receiving local blood, deprive the local community of a scarce resource. Such a situation would be avoided if travellers could be provided with blood from a country where blood supplies are more abundant.

Preparation: The first step in providing such a service is to produce Standard Operating Procedures covering the assessment of sources of blood and transfusion equipment, which have FDA approval, their quality control and the methods of requesting and transporting blood to the patient. Next, suitable locations for setting up satellite blood banks (BBs) and for storage of transfusion fluids and equipment must be identified in various strategic sites worldwide. Then the medical and administrative staff of the alarm centres and anaesthesiologists, who will act as blood couriers, must be trained. Finally, the methods of requesting blood in an emergency must be established with the medical assistance companies and the civil service departments responsible for making the travel arrangements for important dignitaries.

Implementation: We have already selected 4 sourcing BBs, and 6 satellite BBs and over 200 Regional Supply Points (RSPs) have been established. These RSPs contain stores of sterile transfusion equipment and resuscitation fluids. By co-operating with a major refrigeration manufacturer, a transport box has been designed and tested, which can maintain a temperature of 2 - 80C for over 120 hours.

Practice: Typical cases, which have been treated, include major trauma following a road traffic accident in Nigeria, a ruptured spleen in China, multiple injuries sustained during the recent earthquake in Turkey and a post-partum haemorrhage in Central America.

Other Benefits: As well as preserving the local blood supply, this operation contributes to the local health services in 2 ways. Blood, transfusion fluids and equipment, when they have 20% of their shelf life remaining, are donated to local hospitals. Secondly, when the Quality Assurance Manager visits locations, he helps to train the local transfusion staff, thereby helping them to improve their own service.

Thousands of Polish people travel abroad as tourists, workers, cross the border with humane actions or missionary work every year. More and more often they ask for medical advice on how to avoid diseases during the journey.

Polish law has recently gone forward their expectations. It places knowledge of travel, tourist and tropical medicine in a new medical speciality - transport medicine. The aim of the transport medicine physician would be to achieve the knowledge and skills of proper estimation of workers' health, especially those employed in route, railway, sea and air transport. Moreover, their interest would concern people responsible for traffic safety, the conditions of work (health, organization, technical, psychosocial aspects), noxious factors, professional risk and the dependencies. The doctors who specialize in transport medicine should gain the knowledge of law regulation for certification as well as the methodology, technics and procedures used in certification, prophylaxis, rehabilitation and health promotion.

Each specialization, existing separately until now, possessed a rich and justified program of education. All of them form transport medicine now. The assimilation of knowledge from so many medicine and hygiene fields will require many years of studies. The transport medicine specialist will need to know internal and occupational medicine. Medicine of travelers will also exist in the sphere of future transport medicine specialist's work.

Introduction: Each year 50 million people from European countries visit regions endemic with malaria. Use of malaria chemoprophylaxis has become more important because of the increase in travel to tropical countries. Travelers are healthy people, so they find adverse events from antimalarial drugs fairly unacceptable. Few drug regimens, which we use in our service, are considered for travelers to areas with chloroquine-resistant malaria: mefloquine, chloroquine + proguanil and doxycycline. Since the introduction of these regimens our travel vaccination unit has received many complaints from users of these drugs. In contrast with the rare occurrence indicated by the package insert and adverse side effects, we compared the frequency of adverse events associated with the use of mefloquine as antimalarial prophylaxis with those associated with the use of chloroquine + proguanil.

Material and methods: Between January and September 1999, all travelers who came to our travel medicine department for pre-travel medical advice were informed about the adverse effects of the malarial prophylaxis. They were given a questionnaire, to be completed and mailed to us after the chemoprophylaxis was finished. In participants who did not send us the questionnaire were telephoned in order to obtain the pertinent information about the adverse effects. In the study period, 1419 persons visited the travel clinic, the remaining population consisted of: 493 (34.7%) persons had not used antimalarials, 115 (0.1%) persons on chloroquine, 21 (1.5%) persons on doxycycline, 235 (16.6%) persons on the combination of chloroquine + proguanil and 565 (39.1%) persons on mefloquine. The majority of travelers were female (55.3%) versus male (44.7%).

Results: The preliminary results concerning the adverse effects of the chemoprophylaxis seem to suggest a main incidence of digestive (nausea, diarrhea, abdominal pain and vomiting) and neuropsychologic (headache, insomnia, dizziness and anxiety) symptoms.

Considering the need to ensure a safe environment for tourists, executives of the Moroccan Tourism Department pay special attention to develop new means to remedy health problems and accidents.

At present, in case of emergency, the action done is to call hospital departments. The goal now is to make the first rescue intervention faster.

With regard to that, there is no doubt that persons working or studying in tourism are capable to be involved through training courses and briefing sessions dealing with the first aid to give to victims. Having said that, it would be appropriate for Morocco to benefit from partnership agreements concerning this kind of education. And the Second European Conference on travel medicine constitutes a great opportunity inasmuch as it would allow us to create cooperation actions in particular with countries that have reached a good level in this field.

For patients with Chronic Obstructive Pulmonary Disease (COPD), Idiopathic Pulmonary Fibrosis, Cystic Fibrosis and Cluster Headache, among others, domiciliary long term oxygen therapy (LTOT) might be considered. Such a treatment has a major impact on the life of patients, but would it necessarily have to interfere with holidays abroad? We evaluated retrospectively, the experiences of 63 Dutch men and 51 Dutch women for whom we arranged supplementary oxygen during their holidays abroad. The costs for oxygen were paid for by patients' health insurance in most cases and patients' Dutch oxygen supplier in the remaining cases.

More than three-quarters of the patients were suffering from COPD. As for Dutch men not on LTOT, Spain and France were the most popular destinations but more remote parts of the world were visited as well. As means of travel, the airplane ranked first, their own car second. Though most patients were in general very satisfied with the foreign supplier and the arrangements made, some problems were encountered, both logistical and medical. In two cases the ordered oxygen was not delivered. One patient had to be hospitalized abroad due to an exacerbation of COPD. One patient had to seek medical attention for a non related medical problem.

One rather wonders why things can run smooth in nearly all cases and why things went wrong in nearly no cases. Our fortunate circumstance to be able to communicate with foreign suppliers in their own language might have reduced communication problems. Perhaps more importantly was the protocol to allow only "stable" patients to go abroad. Though "stability" is hard to define we would like to suggest that in the case of COPD it would mean that a patient is not in an acute phase (exacerbation) of the disease, is on optimum treatment and not too hypercapnic.

The information on the types and dimensions of the health problems of the foreign guests visiting Turkey obtained between 1996 and 1998 through investigations by the Ministry of Tourism and State Institute of Statistics will be presented.

Toscana Virus Meningitis/Meningoencephalitis: An Emerging Infectious Disease Exportable from Italy.

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Toscana virus (TOSv) was first isolated in nature in Tuscany in 1971 and from cerebrospinal fluid (CSF) of a young woman affected by the acute lymphocytic meningitis in 1983. Subsequently, TOSv has been associated with infections of CNS occurring in natural foci in central Italy during the summer. The clinical picture is similar to that observed in other viral CNS infections; the course is benign, symptoms and signs of encephalitis rarely being observed.

Case report: Siena and its province are situated in the hilly areas of central southern Tuscany, which is frequently visited by tourists coming from European countries and the USA, who often reside there throughout the summer time. During the period 1990-98, 238 subjects affected from acute lymphocytic meningitis/encephalitis were admitted to the hospital of Siena; 132 of them occurring the summer were attributed to TOSv through serological criteria and/or virus detection in the CSF. Twelve of 132 subjects, coming from northern Italy, Germany, England and Japan, were temporary residents in the town itself or in the rural settlements for vacations. The attack rate of the disease is higher in the resident population. Phlebotomine sandflies are endemic in central Italy and asymptomatic infections are common especially in subjects over 45 years old. Several cases of TOSv infections of CNS have been reported in subjects coming from areas where sandflies don't circulate and who travelled to central Italy and other Mediterranean countries. In our areas the incidence of the disease is significantly increasing over the years: global climate warming probably favors sandfly activities and reproduction thus contributing to the spread of the infection, a higher number of cases should be expected also in travellers. Since clinicians are not aware of this disease, TOSv meningitis is still largely under-diagnosed.

In 1998 we asked 300 airline passengers at the airport how they were prepared for medical risks for their tropical destinations. We used a questionnaire with 22 questions, which were related to medical preparation for health risks in tropic destinations. It was a joint project of SmithKline and Beecham Pharmacology and Amsterdam Airport Schiphol, Medical Services.

In August 1999 we repeated the investigation in cooperation with the University of Leiden and the Medical School for General Practitioners. Scientific investigators prepared the questionnaire we used. We are now examining the results, which will be published in the International Medical Scientific Press. Before the publication we will present the results on the European Conference of Travel Medicine.

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.

SafariCare is Safari Club International's outreach program to serve people in third world countries. Mshalira Clinic is located near the Luangwa River in southeast Zambia. The clinic setting is remote, being two hours from a rural hospital with one doctor and four hours from the nearest surgical hospital. The three room clinic was built in colonial times. Equipment is limited and supplies are sparse. The Zambian Ministry of Health supplies anti-diarrheals, antibiotics and chloroquine for malaria. I brought a SafariCare duffel bag filled with medical supplies and drugs. I also brought shoes for the villagers, as shoes are hardly worn by the children.

We arrived October 10, 1999 to sort out the equipment and drugs. The medical assistant was very well trained. He maintained good clinic records and provided the necessary interpretation for those who did not speak English. Within five hours fifty patients had been seen.

Many of the sick children were poorly nourished and lacked needed protein. Their diet consists mainly of maize, bananas and papayas, and chickens. Very little vitamin supplements are available and the infant mortality rate is >25%.

The malaria syndrome of abdominal pain, splenomegaly, diarrhea, fever and pulmonary congestion is at epidemic proportions. Approximately one third of all patients seen were treated for malaria. We dispensed vitamins and iron supplements, as many children are anemic. Parasitic infestation and diarrhea was treated with metronidazole and/or mebendazole. Children with foot infections were provided shoes, as the source of many parasites is through the feet. After years of carrying heavy loads on their heads, many adults complained of neck and back pain. Many patients had skin infections. Dental abscesses, caries, broken teeth, cataracts and eye injuries are also quite common.

Approximately 100 villagers were seen each day. HIV is also an important problem. Without lab facilities only problem clinical assessment can be made. AIDS is often contracted in the cities. People with AIDS often return to their small villages to die.

Through the efforts of Milwaukee, Wisconsin chapter of Safari Club international, we were able to present the village chief with a generous donation of boots, coveralls, backpacks and canteens and shirts to be given to local game scouts. Game scouts are employed by the government to combat poaching of wildlife. Wildlife needs to be protected, as this is their only source of income.

Introduction: There are 4 related antigenically different serotypes of the Genus Flavivirus, the virus responsible for causing dengue fever. There has been an increasing incidence of the disease worldwide since 1945, and currently 2.5 billion people live in an endemic area for the disease, and 100 million cases of dengue fever are diagnosed per year. The disease has a tropical distribution in mainly urban areas. There are three variants of the dawn-to-dusk disease, for which there is no treatment as the disease is usually self limiting.

The first epidemics of dengue fever were in 1779-1780, with a worldwide distribution throughout Asia, Africa and North America. Initially dengue fever was considered a benign disease until post World War 2, when it appeared to become more virulent. The disease is now a global problem and it is endemic in 100 countries. There are currently 3 regions of most concern: SE Asia, the Western Pacific and the eastern seaboard of South America.

The mosquito transmitting the virus is *Aedes aegypti*. It is small, black, and with white spots on its body and head, and white rings on its legs. The insect is also responsible for transmitting: yellow fever, Japanese encephalitis, filariasis, and tick borne encephalitis. The adult lives indoors, is a day breeder, a 'short-ranger' living mainly in hotel rooms and the water of pot plants.

Dengue fever as it relates specifically to the Pacific basin will be discussed, with particular emphasis on how it affects the local communities. There are a number of reasons for the global emergence of dengue fever:

- 1) effective mosquito control is non-existent in dengue-endemic countries
- 2) major global demographics have changed
- 3) increased travel by airplane
- 4) lack of resources and deteriorating public health systems in some countries.

These will all be discussed with respect to the Pacific region.

Conclusion: Dengue fever is increasingly a Pacific, and more gradually a global, problem. This presentation will analyse this and discuss the reasons for it. The signs and symptoms of the disease will be reviewed, and then its management discussed.

How Should We Summarize the Benefits and Harms of Healthcare Interventions for Travelers? A Proposal Based on the Antimalarial Drug, Mefloquine

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Background. Users of healthcare interventions need concise, accurate and up-to-date summaries of (i) the benefits and (ii) the harms of different healthcare options. These summaries should be based on the best available scientific evidence, normally evidence from randomized controlled trials (RCTs).

Question. What are the clearest and most useful ways of summarising the benefits and harms of pharmacological interventions offered to travelers?

Methods. We chose mefloquine chemoprophylaxis as our study intervention. We searched for evidence of benefits and harms using the methods endorsed by the Cochrane Collaboration. These included (i) a systematic search for published and unpublished RCTs and (ii) electronic and manual searches for published non-randomized studies (NRS).

Results. We present (i) an updated meta-analysis of mefloquine's efficacy and (ii) serious and non-serious adverse drug reactions of mefloquine variously summarized as a meta-analysis, a narrative summary, an interactive spreadsheet and a chart.

Conclusions. We believe this is a useful model for summarizing the effects of healthcare interventions offered to travelers, and that it should be used widely.

West Nusa Tenggara Province has its potential area in tourism along the coast of the western part. Where the MOH has put the new paradigm the "Health Paradigm" as its main objective, "Healthy Indonesia" year 2010 has been put as its utmost target.

To reach this, phases that have to be achieved before are "Healthy Cities", "Healthy Districts" and also "Healthy Tourism". Concomitantly, our Governor has also decided as a priority, "GEMA PRI-MA" activities where in short it means a total movement within the community to change their behavior and their environment to a better and healthier lifestyle.

Implementation of activities:

1. Tourism Sanitation facilities built.

2. "Sanitation Week":

* Intense promotion for using latrines.

* Intense education of healthy environment to all levels of the community and Government officials.

* Healthy Tourism forum: set up, consisting of multidisciplinary members.

3. Health services for tourists.

4. Clean Friday Movement.

Result and discussion: 1. Monetary crisis in Indonesia since 1997 and worsened political situation gave negative impact for tourists to visit Lombok. 2. Diarrhea and malaria in tourist areas have been controlled so far. 3. Since it has just begun less than one year, impact on flow of tourists to NTB is not yet certain.

Tourism, as an organized form of individual and corrective movement has an essential role for maintaining and improving physical and psychological health.

By Ecosophy and ecoeducation, we can have a tourism that improves our health. Ecotourism must be an integral part of ecological education, an integral part of life school. So, the human being will be able to understand the interrelations that exist between nature and living beings, he will understand this complex reality in a consonant way, because we are influenced by what we see, what we feel and believe that is real.

By Ecosophy and Ecotherapy we harmonize ourselves with ourselves and with nature and we will be more open on health, because harmony is order and Health is Order inside our organism.

By Ecosophy and Ecoeducation the human being learns to respect nature, society and the ethical sense of life.

While travelling a human being often appears in contrasting climatic zones where the whole complex of meteorosynoptic elements (temperature, humidity air velocity, atmospheric pressure, etc.) acts on the organism. It leads to the damage of adaptive processes and development of meteoropathic reactions in approximately 1/3 of the population that is meteorolabile. Meteorological factors produce either hypoxic or spastic effects. Meteorolabile patients with arterial hypotension and syndrome of vegetative dystonia react on the hypoxic conditions though spastic effects are observed in hypertensive, asthma, uro- and cholelithiasis patients. Meteoropathic reactions should be arrested at the earliest possible time because the disturbance of adaptive processes may lead to aggravation of chronic diseases. With this aim we worked out a technique of reflexotherapeutical influence, in the "hypoxic group" (n 20) we used E₃₆(2), RP₆(2), GJ₄(2), PC₃, then neck- collar area and paravertebral lines had been exited and nerve - point massage used. In the "spastic group"(n 28) we used MC₆(2), C₇(2), GJ₄(2), V₄₃(2), E₃₆(2), T₂₀, AP₅₅(2),51(2),20(2),34(2), VB₂₀(2), PC₃, GJ₁₁(2), AP- 22(2), 35(2), then the nerve-point massage (inhibiting method) had been used. After the first procedure they observed lack of unpleasant subjective feelings (headaches, vomiting, normalization of blood pressure and sleep, etc.). So we offer to use retlexotherapy for arresting of meteoropathic reactions in migrants from contrast climatic zones.

The history of health tourism is closely connected with long distance travels to spa resorts. The traveller's goal was to find an effective treatment offering relief from illness and pain. In spite of the availability of many descriptions of miraculous healing, the scientific evidence for the therapeutic benefit of the spas was not convincing.

Five years after the discovery of radium, scientists suggested a causal relation between radium emanation (nowadays called radon) and the healing properties of spring waters. This hypothesis led to great excitement among the general public.

The discovery of high values of radium emanation in the highly respected spas of the Austrian Bad Gastein in 1904 stimulated a world-wide search for radon in spas. Within a short span of time radioactive balneotherapies (RBT) were developed and rapidly applied without adequate knowledge of their effectiveness and safety. Warnings against the possible harmful health effects of RBT only received minor attention.

With the euphoria concerning the healing activity of radium in the beginning of this century, the new technology was also pushed by commercial interest involved in balneotherapy. Both medical practitioners and laypeople were subject of promotional material. The development of RBT was seen by its advocates as a way to give a new impulse to spa tourism.

The diffusion of RBT in spa resorts will be illustrated with data from European countries. Although definitive data are not yet available, the spreading of this new technology most likely followed the classical s-curve of diffusion. The presentation will link the story of balneotherapy with the story of technological diffusions.

Underneath successful scientific research, based on rationality and progress, is hidden another dimension of knowledge, which demonstrates deeper truths by analogies and symbols and give answer to contradictory developments of our world. Climatic changes, destruction of the ozone layer, and spoiling of the environment are signs of a collective crisis of humankind.

Based on C.G. Jung's concept of archetypes, this report shows, by means of a set of pictures, inter-connections and historical developments leading to the actual situation of a tremendous technical progress on the one hand and a significant changing of human behavior and relationships on the other hand.

Skin diseases are an excellent model to show the medical dialectic between human beauty and ugliness. Malignant melanoma, the black cancer of the white man with its worldwide increase will be discussed in its deeper symbolic aspects.

We are traveling in this cycle of pictures through the centuries, where mythological contents as conjunction oppositorum become visible in a philosophic/medical discourse. Light and shadow, logos and sophia are polarities determining our life and death, while enabling us to further deeper medical knowledge.

After a period of crisis, spa treatments seem to show signs of recovery after a new concept of Health emerged, which, as *OMS* defined it, is not only an absence of disease but especially as a psychological and physical well-being.

Through a stay at a spa, there is a synchrony with nature which allows patients to appreciate one's rhythms and to forget about the frenetic activities of the city.

Fiuggi Water is an oligomineral water, which is indicated for kidney stones and its relapses. The therapeutic properties of *Fiuggi Water* is for kidney stones and it's relapses. For this pathology, treatment by *Fiuggi spa* has been dispensed partially by the National Health System. The therapeutic action of the Water takes place through the presence of a macromolecule belonging to the family of the fulvic acids, which mines its stability determining the stone to flake off, combining with the mineral elements of the crystalline reticule. Following the instructions of the regulation in force (DM 15/12/94) research has been conducted on the clinical efficacy of the Water. All spa patients who underwent a doctor visit, were asked to fill out a medical record. Amongst them, 1850 patients affected by *calculi* have been selected for a longitudinal study. It consisted of sending those patients a questionnaire, which their own doctor had to fill out. 614 questionnaires have been filled out and returned.

The results indicated a high incidence of expulsion of the stones in patients who, after the treatment by the spa, have not interrupted the treatment at home. It is important that the water is administered in a continuous way, instead of in separate cycles, and that the dose of the Water during the treatment at home is not to less than 1,5-2 liters. per day.

Various expert sources provide suggested paediatric regimens for malaria prophylaxis. They are shown to be derived by calculation, usually from adult dosages, using various rules, some of which are not explicitly stated in the written recommendations. These rules are identified and the results of their use compared with various norms. A structured approach to regimen construction and use is set out. A crucial decision concerns whether human weight or surface area is used as the basis for scaling target doses. Once there is agreement on the rules it is possible to derive a consistent set of dosage regimen proposals which permit the same age- and proportionate dosage-steps for all of the available drugs. It is hoped that this approach will lead to simplified management of malarial prophylaxis for young travellers, particularly when several children of different ages are involved in one family or group. The approach may perhaps form a basis for wider consultation leading to an extended consensus on the dosage of malarial prophylaxis for children. More crucially, it may encourage the collection of population pharmacokinetic data that will replace theory with evidence-based dosage.

To produce toxins is a common adaptation in nature, both as a defensive measure to avoid predation, and as weapons to tranquillise, kill and digest prey. Animals who are themselves harmful to eat are called poisonous, while animals with toxic secretions are called venomous.

According to WHO's statistics 30 - 50.000 people die every year because of snake bites. The victims are mainly agricultural workers, and in south-east ASia, fishermen. Tourists from Europe or U-SA are most often bitten while handling snakes. Snake bites are not a major cause of death among tourists, but as travel clinicians, we often get questions about such risks.

Of the 2.400 species of snakes in the world about 50 have clinical significance. Snake venoms are complex mixtures of different toxins. The effect of the toxins can be classified according to snake taxonomy: *Viperidae*: Vasculotoxic (systemic and local), intravascular coagulation *Elapidae*: Cytolytic, neurotoxic

Hydrophidae: Myotoxic.

Representatives of the main phyla containing venomous animals (*vertebrata*, *echinodermata*, *mollusca*, *cnidaria* and *arthropoda*) are presented in a slide show and, preventive measures are discussed.

Pilgrimages are an integral and vibrant aspect of Hindu religious traditions. The subcontinent offers a vast network of sacred places in addition to the seven sacred rivers, the seven sacred cities and the four sacred abodes situated at each corner of the region. Such journeys or tirthas may therefore consist either a single journey or a series of wanderings among these holy places. They represent the nodes of an intricate pilgrimage pattern. Travelling this route, the devotee not only endeavours to obtain salvation but also to understand the diverse nature of the land and its culture.

Numerous large pilgrimages abound ranging from the Kumbh Mela in the flat dusty plains of Northern India to the arduous Kailash Mansarovar trek in the Himalayas. The population movements in such large religious congregations have a tremendous and wide-ranging health impact. This includes a wide spectrum from heat illnesses to high altitude sickness. The Purna Kumbh or Bath festival occurs once every 12 years and is the largest religious gathering in the world, with conservative estimates of 18 million people assembling during the last one in 1989. Food borne illnesses are common. Large-scale interstate movement of pilgrims offer an ideal opportunity for the spread of malaria, tuberculosis and cholera. The elderly and the infirm are a high risk group. Thus, apart from providing basic medical facilities catering to medical emergencies, adequate measures to control infectious diseases constitute an important public health exercise. Provision for safe housing, adequate supply of potable water and a hygienic waste disposal system are priority issues. Prevention of accidents are also a prime concern which includes fire, injuries, drownings and stampedes especially during the ritual bath.

Hindu Pilgrimages in the subcontinent, given their size and nature, presents a unique challenge to those seeking strategies to identify and control their health impact.

Beta-endorphins (B-Eps) are neuropeptides with a strong morphine - like action derived from the precursor polypeptide pro-opio-melanocortin (POMC) – They are produced in the central nervous system as well as in blood lymphocytes and probably in keratinocytes.

B-Eps are involved in the perception of pain and in the immune response..

Materials and Methods.

An homogeneous group of 27 volunteers (9 females and 18 males) aged 40-48, was studied. These patients suffered from radiologically documented osteoarthritis (degenerative articulation disease). Each patient was recruited at the beginning of the thermal treatment with virgin mud from Montecatini, in the morning between 8,30 and 9,30 a. m. The mud was applied at the temperature of 48°C for 20 minutes.

A blood sample was taken before the treatment at time 0 (To), at the end of mud bath (T20) and at the end of the therapeutic session (T60). B-Eps (pm/1) were evaluated. in RIA. On sample was evaluated ACTH, Osteocalcine, Calcitonin and Cortisol.

The spontaneous pain symptom was evaluated at the beginning and at the end of the treatment according to a subjective scale .

The statistical analysis was effected with non parametric tests and evaluation of the average with standard deviation.

The pain score was evaluated with the Ranghi test and the non parametric Wilcoxon sign.

RESULTS

A significant increase of B-endorfins ($P > 0,01$) was shown (mean value $> 20\%$) between time To and time T20 in both sexes..

In the time interval T20-T60 these values resulted statistically different ($P < 0,06$) only in females.

In the time interval (T20-T60) the average levels of the ACTH decreased, especially in women.

The data concerning osteocalcin do not show a significative variation.

The blood levels of the cortisol at T20 are less than the basic, while in the time interval T20-T60 only females showed decreased levels (statistically these variations are not significative).

Finally pain scores before and after the treatment showed statistically evident variations ($P > 0,01$), passing from moderate to higher level in both sexes.

DISCUSSION

The increase of B-Eps levels 20 minutes after mudbath, confirms the data concerning heath induced stress.

Our data also suggest that it does not exist a strict correlation between the release of B-Eps and ACTH levels and that reduction after 20 to 60 minutes of the mud application prospects a different pattern of release of this latter hormone with respect to B-Eps 3.

The not evident variation in the cortisol levels, apparently in contrast with the decreased levels of ACTH, can be explained by the inhibitory action on the suprarenal secretion by B-Eps . The absence of variation in the levels of Calcitonin and Osteonin do not confirm previous studies which show increased levels of these hormones. The "pain" symptom decreased parallel with the B-Eps levels increase .

POSTERS

Seafarers are a unique occupational group in that their travels to different parts of the world expose them to different types of infections, an exposure comparable only to airline staff. Quite different to the situation in the past, seafarers rarely get an opportunity to visit places far away from the ports of call, due to the rapid turn around time at ports. However, they are still exposed to infections at ports of call. Recent studies conducted, mostly in Europe, have shown concerns on Malaria, Hepatitis A, Hepatitis B, Hepatitis C, Human Immunodeficiency Virus and Gastro-Intestinal (GI) infections. Although much concern has been shown to the resurgence of Tuberculosis (TB) infection in many countries, whether seafarers are at risk of contracting TB at ports of call is uncertain. Some of these infections which pose a risk have also been identified at the seventh session of the I-LO/WHO Joint Committee on the health of seafarers.

The present study which collected data from published and unpublished studies examined the current situation on these identified group of infectious diseases and recommends preventative measures. This study demonstrates the need for the collection and maintenance of complete data sets on seafarer health indices. The lack of even basic data is a major impediment to conducting quality seafarer health research.

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P2

Training in Maritime Occupational Health: The First I.M.H.A. InterCountry Course in Gdynia, Poland, 1999.

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As the result of changes in the political and economic system in many countries of Europe in the 1990's, the health care system for national seafarers there has changed. The number of ships operated under the national flag has decreased. Seafarers from Poland, Russia, Ukraine, Bulgaria, Estonia, Croatia, Latvia and other countries have looked for employment on foreign ships. In the same time, the system of health care for seamen has deteriorated. Previously, efficient and well staffed health services were maintained in ports at home; on many merchant ships doctors were employed. These services are not available at present.

Also, from many developing countries, seafarers have been employed on foreign-flag ships. Only from the Philippines, about 200,000 seamen work for foreign shipowners. There are many other maritime labour exporting countries, particularly in Asia.

There was a need to establish criteria for the health standards for internationally employed seafarers. In 1997, a Consultation on conducting the medical examination of seafarers was organized by ILO and WHO in Geneva, and the relevant Guidelines were published. Following that, the I.M.H.A. (International Maritime Health Association) InterCountry Training Course on maritime occupational health was held in Gdynia on 20 September - 2 October 1999, for 21 doctors from 16 countries and 4 continents. They were intended to be the focal points for establishing or strengthening the existing national health services for maritime workers.

The training programme included the following subjects: conditions of work on ships, work-related health risks, and diseases and accidents among seafarers, health requirements for seafarers, medical care aboard ships, port health services, health education and health promotion of seaman, emergencies at sea, survival at sea. The IMHA Training Course was financially supported by the ITF.

P3

Pre-travel Advice: Evaluation of Preventive Measurements and Compliance with Chemoprophylaxis

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Objective: To evaluate the compliance and reasons for non following or discontinuation of medical pre-travel advice during international travelling.

Methods:

Population: A total of 13800 medical records of travellers who attended the pre-travel clinic between January 1 and December 31, 1998 at the U. Malalties Tropical i Atencio Viatger (UMTAV) de l' I.C.S. in Barcelona were considered. **Inclusion criteria:** Travellers of any age, gender or destination who completed the medical form correctly were included. **Selection:** The planned sample was 1040 and travellers medical records were alleatory selected. Sample fracction=13. **Data collection:** Travellers were contacted by telephone and after verbal consent, a questionnaire was conducted to assess data related to febrile or diarrheic illnes during the travel or within 30 days of returning, the need for medical attendance and the compliance of pre-travel advice. **Statistical Analysis:** Data was analysed using the EpiInfo software.

Results: 948 (91.15%) travellers were available for analysis. 51.5 % were male and 48.5% female. The average age was 33.5 +/- 8.9 years (range, 13-71) and 63,2% were between 15 and 34 years. Travelling last 26 +/- 18.6 days (range, 4 to 120). Destinations was 28.2% SubSaharian Africa, 21.3% South Asia, 15.2% Tropical South America, 14.9% Central America and 11.7% East South Asia. 54.8% persons travelled during the July-September period. The most frequent purpose of travelling was tourism (88.6%). 69.5% was staying in hotels and 76.4% were visiting rural and urban areas. 482 (50.8%) travellers did not follow all pre-travel advices. 47.8% considered advices were difficult to apply because of unavailability or small variety of food and water in remote regions as well as complicated refering to prevention of insects bites. 20.7% forgot the advices. 4.6% discontinued antimalaria drugs because of secondary drug effects. 0.6% referred to the advices as unpracticals. 0.2% as unnecessary. Also 26.1% travellers indicated that discontinuation of advices was due to a personal mistake.

Conclusions: 1- It is necessary to develop new strategies to improve the compliance with preventive advice during travelling in high risk destinations.
2- There is a low discontinuation rate of antimalaria preventive treatment due to secondary drug effects.

P4

Health complaints among Japanese children living abroad
YUKA HIROSHIGE, MIZUE HONDA, ATSUO HAMADA, *Japan Overseas Health Administration Center, Labor Welfare Corporation Yokohama, Kanagawa, Japan.*

The Labor Welfare Corporation has performed visiting health consultations for Japanese workers and their family members living overseas since 1984. In 1997, a total of 14 medical teams visited 74 cities in 40 countries and saw 4,912 patients. We evaluated complaints among 1,992 pediatric patients aged 0-15 by questionnaire during the health consultation. The most common complaint was cough and sputum (13.1%), which was followed by skin problems (6.1%) and poor vision (5.0%). It is therefore necessary to clarify the cause of the high prevalence of these symptoms as well as to find countermeasures to prevent them from occurring.

P5

Organization of travel medicine service in Odessa.

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Tourism is one of the world's largest and fastest growing industries.

The Odessa -Black Sea region stands out as a prime future growth area, both in the short and long term. Tourism offers us an important avenue for a healthier life style. But tourism is not without its ills. This is an emerging problem which requires serious medical attention. Many Odessa citizens love to travel. But they face tourism-related health problems. According to medical statistic many cases of malaria, meningitis, helmintosis were recorded as well as acuteness of chronicle diseases after the trip.

Accidents, injury and cardiovascular problems are the mos serious risks for the travelers abroad. That is why the center of travel medicine and philanthropy international fond " Defense health of travelers" were created on the basis of Institute Maritime medicine in Odessa.

The main aim of these organizations is: health protection of all migration population, prevention, insurance. All Odessa's citizens who are posted abroad have to be checked before and after travel. After checking they get health certificate which contains information of the state of health, blood group, allergies, vaccination, medicine recommendations.

The popular guide for tourists was edited by specialists of travel medicine.

P6

Evaluation of a Travel Medicine Seminar for Australian Family Physicians.

NICHOLAS ZWAR, *Department of General Practice, University of New South Wales, Sydney, Australia.*

The majority (85%) of Australian travelers who seek pre-travel health advice obtain it from their family physician. This creates a need for effective continuing medical education for family physicians in the field of travel medicine especially when there have been reports of problems in the quality of advice given.

The poster describes the content and evaluation of a one-day seminar in travel medicine held in Sydney in conjunction with the Australian College of General Practitioners. Topics covered in the seminar included: vaccine preventable disease, traveler's diarrhea, malaria prevention and chemoprophylaxis, jet lag, case studies on the African traveler, Bali and Lombok and trekking in Nepal and fever in the returned traveler.

Participants were asked to complete a knowledge questionnaire on these topic areas prior to the workshop and also to evaluate each presentation, provide general comments and suggestions for future seminars

P7

Characteristics of International Travellers from the North Region of the Portugal

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It has been well recognised that the increased movement of people between countries and continents is a challenge for Public Health, especially for what has been called Travel Medicine". Portugal is part of the European Union and has traditional cultural and economic links with Portuguese speaking countries in South America (Brazil) and Africa (Angola, Cape Verde, Guinea Bissau, Mozambique and S. Tomé e Príncipe). Several infectious diseases and serious Public Health problems in those areas pose a serious challenge to Travel Medicine Services, both on scientific, (clinical and epidemiological) and organisational aspects. The particular geographical location and traditional cultural and economic links of Portugal make our country a potential "entry door" travellers others than humans.

This poster intends to briefly describe the activities of our young Travel Medicine Unit that is fraught with material and logistic constraints. We hope that the IInd European Conference on Travel Medicine is an opportunity for us to learn from exchanging our experience with other Units all over the world.

Among other duties, our Unit is in charge of clinical assessment of citizens planning to travel abroad. that includes vaccination, medication and advice on medical and health behaviours, and sometimes also on logistical and legal aspects.

In the second half of 1998, we observed and interviewed 2871 Portuguese citizens who intended to travel abroad. Sixty percent (63%) were men, and 75% were aged 20 to 50. By the International Classification of Occupations, groups 2 and 7, with highly differentiated technical skills, were predominantly industrial workers and artisans were also numerous. One of the difficulties with this activity is that the solution for each case varies a lot; vaccination and medication decisions depend on the clinical background of the individual, country of destination and reason for the visit abroad, among other. One of the main constraints for the efficacy our work is the short time between the first visit to our Unit and the departure date: 62% of travellers leave Portugal within less than 15 days after visiting our services. Another limitation for our activity is that most travellers do not visit our Unit after returning to Portugal; we have been trying to motivate travellers for the need of that procedure.

This study was conducted from January to July 1999 in the Central Clinic Cira Garcia of Havana City, Cuba, specialized in the attention of travellers. The goal was to ascertain the health problems requiring hospitalization and the risk factors associated with them.

Of 2131 travellers assisted at the emergency service, 304 (14,2%) were hospitalized of which 192 (63,1%) were males and 112 (36,9%) females. Patients were divided into five groups of age, being the groups from 45 to 59 years (87 to 28,6%) and 30 to 44 years (84 to 27,6%) the groups of the major number of admissions.

41 patients (13,4%) were admitted at the Intensive Care Unit and 4 patients (1,3%) died.

Fractures,traumas and wounds were the first cause of hospitalization with 71 cases (23,4%).

Factors of risks were: Pre-existing health problems in 146 cases (48%), advanced age in 42 cases (13,8%) and pregnancy in 15 cases (4,9%). In 114 cases (37,5%) of hospitalized patients, those previous conditions were the cause of admissions or were related with them. 176 travellers (57,8%) reported toxic habits being smoking the most frequent (91 to 29,9%). In 35 patients (11,5%) those habits contributed or were the cause of admission.

Finally 46 patients (15,1%) underwent surgery and 25 (8,2%) were evacuated.

The results of this study indicate the frequency and gravity of injuries as causes of hospitalization and show that among travellers there are many health risks that demand of pretravel consultation and health recommendations regarding previous illnesses as well as is necessary an efficient care in the tourist region in order to prevent exacerbations of the pre-existing health conditions, though the individual responsibility is an important aspect.

Objectives: Fever is a common cause of medical consultation among travellers visiting tropical countries. We aimed to ascertain the number of patients assisted in our clinic presenting fever, most common ailments, and to evaluate the use of antibiotics in those cases.

Methods: 1577 patients assisted at the emergency service of the Central Clinic Cira Garcia from January to September 1998 were included, 967 (61,3%) males and 610 (38,7%) females. The cause of medical attention, clinic diagnosis, sex, age and the use of antibiotics were examined.

Results: 410 patients (25,9%) presented fever. The patients between 0 and 14 years were the most affected (56,2%) in comparison with other groups. Upper Respiratory Tract Infections (42,1%), Acute Diarrheal Diseases (25,6%) and Pneumonia and Bronchitis (11,2%) were the most common causes of fever found. Antibiotics were prescribed in 188 febrile patients (45,8%) being quinolones the group of antibiotics most used. Were admitted 44 patients and amebiasis was the first cause of admission.

Discussion: These data demonstrate that but 3 cases of Malaria, travellers were practically affected by the same illnesses that host population, being the youngest the most frequently affected. Antibiotics were used according to the etiology of febrile related diseases.

P10

Falls as a Risk for Travellers

FELIX IZQUIERDO ALBERT, YAHILY BACALLAO. *Central Clinic Cira Garcia, Havana City, Cuba*

Objectives: To know the role of falls as cause of injuries, characteristics of the victims and nature of the injuries.

Methods: Retrospective analysis of 377 injury cases assisted at the emergency service of the Central Clinic Cira Garcia located in Havana City, Cuba.

Results. Of 377 travellers assisted at the emergency service from January to July 1999 in our Clinic, 153 (40,5%) were due to falls, of which 84 (54,9%) were males and 69 (45,1%) females. Patients less than ten years were the group most affected (28 to 18,3%).

Extremities were the part of the body with major number of injuries received (101 to 66%) being fractures the main presenting injury (46 to 45,5%). It is interesting to know that 99 falls (64,7%) were as consequence of patients` feet falls.

Were hospitalized 26 patients (16,9%) and 21 (13,7%) needed surgical treatment.

Conclusion: Our data demonstrate the importance of falls as a health hazard during travelling.

P11

Report on the Activities of A New Travel Medicine Centre Amiens University Hospital , Picardie, France

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Department of Parasitology, Mycology and Travel Medicine Amiens, France.

Aim: To report on the activities of the travel medicine centre at Amiens University Hospital, Picardie (France).

Methods: Retrospective analysis using EPI-INFO software of epidemiological data on patients seen in travel medicine consultations over 3 1/2 years (from 01-01-1996 to 30-06-1999).

Results: 6015 patients consulted the service, with a mean age of 37 and male/ female ratio 0.97. The majority of patients come from Picardie (92.9%) and 43.1% were referred by their GP. The most frequent destination (77.1%) was Africa, with a distinct preference for Senegal (36%). In total 9038 vaccinations were performed, including 5222 yellow fever vaccinations. 3816 other vaccinations were given, of which 934 were Diphtheria, Tetanus, Polio (DTP) and thus not directly linked to travel. In addition 5993 malaria chemoprophylactic treatments were prescribed. Over this same period, we note that 47 cases of malaria were diagnosed by our parasitology laboratory. The majority of these patients had not consulted our clinic before travelling to malaria endemic areas.

Discussion and conclusion: as shown by the 934 DTP vaccines, the clinic's public health role is not limited to vaccine prevention of travel-related infectious disease.

The centre plays an active role in updating the vaccination cover necessary even in a developed country. Yellow fever vaccination is our principal method of patient recruitment. As this vaccine ensures effective protection for 10 years, pre-vaccinated patients going to areas endemic for malaria and yellow fever are not seen at our clinic. For this reason, some patients do not always receive the correct antimalaria chemoprophylaxis.

At a first consultation in the travel medicine centre, all patients should be made aware of the need for a specialist consultation each time they travel to a malaria endemic area.

P12

Assuring Safe Travel For Today's Travelers in Latvia

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A rapid expansion in international travel in Latvia in 1990's was observed after independence. In response to increased number of Latvian travelers to the subtropics and tropics the discipline of travel medicine has become an emerging speciality. Thus, in 1996 the consultative unit for tropical and traveler's diseases at the outpatient department of Infectiology Center of Latvia was organized. Specialists of the Center offer expert advice on behavior modifications, immunizations and chemoprophylaxis regimens, geographic distribution of potential health risks.

A total of 626 persons received comprehensive pre-travel advice: 73 (1996), 207 (1997), 183 (1998) and 163 (January - September 1999).

Since 1996 malaria prophylaxis was prescribed to 292 patients: mephagin (180), paludrine (23) and delagil (89). Vaccines and dynamics of pre-travel vaccination performed in the Center are: Avaxim, Havrix, Meningo A+C, Typhim Vi, DT Polio, Imovax Polio, Cholera, Orohol, Je-vax, Stamaril.

In conclusion, the organization of travel medicine structures and especially the training of general practitioners in travel medicine has to be reconsidered in the near future in Latvia.

P13

Survey Among International Traveller Employees at the Insurance Company AGF

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Objective After some medical problems among expatriate employees at the AGF, the management asked the AGF Occupation Health Service to carry out special medical surveillance among these employees.

Since 1995, this special medical surveillance comprised a blood analysis, an electrocardiogram, vaccinations and malaria prevention.

After 3 years, this surveillance was assessed by a survey.

Method This survey consists in the studies of medical files of 207 traveller employees at AGF Registered Office.

Results

16% employees of the AGF Registered Office travel in foreign countries, 58% were managers, and 69% was less than 40 years of age.

Among these employees :

71,7% do international missions

21,7% are expatriated

6,6% are impatriated

17,4% travel in Asia, Africa or Latin America and need malaria prevention.

78% received vaccinations, DTP, typhoid, hepatitis A and hepatitis B.

Following the results of blood analysis and electrocardiograms some employees were referred to:

26% Consulting Physicians

14% Cardiology

4% Parasitology

Conclusions

This survey among AGF international traveller employees, indicate the importance of the Travel Medicine in Occupation Health for the Prevention of professional risks.

P14

Pre-travel Advice: Efficacy in Reducing the Risk of Febrile Illness and Traveller Diarrhea

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Objective: To evaluate the efficacy of medical pre-travel advice in reducing the presentation of febrile and diarrheic illnesses during international travelling.

Methods:

Population: A total of 13800 medical records of travellers who attended the pre-travel clinic between January 1 and December 31, 1998 at the U. Malalties Tropical i Atencio Viatger (UMTAV) de l' I.C.S. in Barcelona were considered. **Inclusion criteria:** Travellers of any age, gender or destination who completed the medical form correctly were included. **Selection:** The planned sample was 1040 and travellers medical records were alleatory selected. Sample fracction=13. **Data collection:** Travellers were contacted by telephone and after verbal consent, a questionnair was conducted to assess data related to febril or diarrheic illness during travel or within 30 days of returning, the need for medical attention and compliance of pre-travel advice. **Statistical Analysis:** Travellers were devided into two groups according to the presence or ausence of febril or diarrheic illness and compare to stablish the difference in compliance of pre-travel advice. Data was analysed using the EpiInfo software.

Results: 948 (91.15%) travellers were available for analysis. 51.5 % were male. The average age was 33.5 +/- 8.9 years (range, 13-71) and 63,2% were between 15 and 34 years. Travel last 26 +/- 18.6 days (range, 4 to 120). Destinations was 28.2% SubSaharian Africa, 21.3% South Asia, 15.2% Tropical South America, 14.9% Central America and 11.7% East South Asia. 54.8% persons travelled during the July-September period. The most frecuent purpose of travelling was turism (88.6%). 69.5% was staying in hotels and 76.4% were visiting rural and urban areas. 61.7% of travellers suffered a febrile or diarrheic illness (22.1% fever and 77.9% diarrhea). 86.5% suffered the illness while travelling and 13.5% after returning. 69.4% Did't follow the pre-travel advice. Only 20.9% of travellers not following recomendations did't get any illness. 59.3% needed medical services and 29.9% was obtained after returning. The risk of diarrheic illness was 2.25 and of febrile illness 8.61 higher among the group that did not follow pre-travel advice.

Conclusions:

- 1- Compliance of preventive pre-travel advices reduces the risk of febrile and diarrheic illness during travelling.
- 2- In travellers who followed medical advice and developed febrile or diarrheic illness, medical attention was less frequently necessary

P15

Health Problems Among Participants to a Postgraduate Course in Burkina Faso.

PIERRE LANDRY. *University Medical Policlinic of Lausanne, Switzerland.*

About half of all travellers suffer from some health impairment and even more long-term (>3 months) high risk travellers to developing countries. In 1996, four of about 20 European participants in a postgraduate course in Burkina Faso got malaria. Therefore in 1998 it was decided to have a closer look at the health of a similar group of 17 European adults (9M/8F, mean age 28 yrs), all non-medical professionals, spending 5 months in Burkina Faso to study and evaluate various development projects around the capital city Ouagadougou. Six of them had never been to Africa before. Accommodation was basic and contacts with the local population frequent and close.

Method: The participants received a questionnaire asking about preparation for their trip, health problems and treatments followed during and after the course.

Results: All had received detailed oral and written instructions about health risks, including malaria and diarrhea prevention, most of them even twice.

Malaria chemoprophylaxis was used by 15 (88%), 13 according to Swiss recommendations (mefloquine weekly or chloroquine and proguanil daily) and 2 with other regimens. One did not take anything and one stopped rapidly because of side effects (mefloquine). Thirteen took at least 2 anti mosquito measures regularly.

Immunization status: yellow fever, hepatitis A and poliomyelitis 100%, diphtheria-tetanus and typhoid fever - 94%, hepatitis B and meningococcal meningitis 88%, rabies 24%. All carried loperamide and 6 had antibiotics against diarrhea.

Illness: Only 3 (18%) remained asymptomatic during and after the trip. Nine fell ill during the course only, only one after the course. Seven (50% of those ill) needed a medical consultation usually during their stay in Africa (six with laboratory exams). Symptoms were: upper respiratory (n=10), diarrhea (n=9), fever (n=6, with 2 not consulting despite recommendations given before the trip), psychologic disorders (n=5, with 3 attributed to mefloquine and 2 to changing chemoprophylaxis), skin problems (n=3) and others (n=2).

Diagnosis: Three received treatment against malaria. Others had cold of flu (n=7), travelers' diarrhea (2), amebiasis (2), bacterial diarrhea (2), giardiasis (1), dengue (1), allergy (1), amenorrhea (1) and angina (1).

Conclusion: Despite extensive medical recommendations and preparation, over 80% of postgraduate students following a five month course in Africa got ill, half of which needed medical consultations, and 3 being treated for malaria.

P16

A Study to Evaluate Travellers Potable Water Requirements and the Acceptability of Osmotically Driven Water Purification Sachets.

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Objectives: The evaluation of an osmotically driven water purification sachet for travellers as an alternative method of obtaining safe drinking water.

This prospective study aimed to identify travellers' use of drinking water and evaluate practical issues in the day to day use of the sachets and to discover the acceptability of this method of water treatment.

Study Design and recruitment criteria: Travellers attending the Travel Clinic for pre travel advice travelling for less than eight weeks to areas outside Europe and North America were recruited into the study. Participants were shown how to use the sachets, given a sample pack to take with them on their journey and then asked to complete a questionnaire on their return. Non responders were contacted by telephone. The package design evolved during the study.

Results: 650 travellers were recruited into the study. A response rate of 45% has been obtained. Travel destinations included Africa (48%), S. E. Asia (18.7%), South and Central America (16.6%), India (9.8%) and the Middle East (3.74%)

The main types of travel identified were self arranged holidays (29.59%), business trips (19.04%), visiting friends and relatives (19.04%), package holidays (18.02%) and backpacking (8.16%).

Travellers were asked which types of drinking water they used and to state the main type. 74.1% said that bottled water was their main source of drinking water.

32.3% of travellers stated that they used some form of water treatment, chemical, boiling or filtration.

77.3% of respondents reported using their supplies of the sachets. Respondents identified that the sachets would be useful for backpacking (77.2%) and safari travel (61.2%). Travellers commented on the bulk and size of the sachets compared to other water treatment methods, and the length of time to fill (4 to 8 hours). 17.3% commented on the taste and said that it was sweeter than they expected. Further research is needed to optimise the sachets for travel use.

P17

Evaluation Of Traveller's Diarrhea And Water Analyses At Touristic Regions Of Adana Province, Turkey

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Traveller's diarrhea (TD) has been among classical themes of travel medicine for the last 15 years. Determining the extent, causes and outcomes of TD will be of great aid for prevention. This descriptive, cross-sectional study, performed in two of three touristic regions of Adana province that is the fourth largest province of Turkey, located on the Mediterranean coast of the country, aimed to determine the causes, applied treatments and outcomes of TD, in addition to water analyses performed in the same area and period of time.

The study period consisted of the main touristic summer season, between June 1st, 1999 and August 31st, 1999. As the primary level health centers are the main health service sources in the area, a total of 3027 tourists applied to primary health centers in the region, with complaints of diarrhea, consisted the study group and data related to their complaints, diagnoses, treatments and outcomes, in addition to results of 48 bacteriological usage and drinking water analyses, 62 residual chlorine in water analyses and 20 sea-water analyses. The mean age of patients with diarrheal complaints was 16.7_14.6 (range 1 to 77), with a male to female ratio of 1311 (43.3%) to 1716 (56.7%). Among these, 201 (6.6%) had diagnosis of enteritis with a male to female ratio of 101 (50.2%) to 100 (49.8%). The causes of enterites were *Entamoeba histolytica* in 23 (11.4%), *Giardia lamblia* in 8 (4.0%) and TD in 170 (84.6%). While the cases with protozoan infections were treated with metronidazole, ornidazole or furazolidine, TD cases were prescribed intestinal antiseptics and when indicated ORS in 103 cases. None of the cases needed to be referred to second level health institutions and they were cured in 2 to 10 days.

The water analyses revealed that 37 (77.1%) of bacteriological usage and drinking water analyses and 4 (20.0%) of sea-water analyses had resulted inadequate according to standards and 48 (77.4%) residual chlorine in water analyses revealed that residual chlorine level was insufficient.

In order to decrease the frequency of TD cases, it can be suggested that usage and drinking water should be adequately chlorinated in accordance with standards, necessary attention should be paid in the preparation of foods for tourists, an efficient vector control and an adequate and hygienic waste treatment should be performed.

P18

Health care of children in an immigrant community in Barra, a suburb east of Naples

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A programme for promoting health care and epidemiological surveillance is already under way for the settlement of immigrants (Albanians, Rom, Ivory coast) in the area of Barra, a suburb on the east side of Naples. There was a sharp increase in the community after the influx of immigrants, almost exclusively illegal Rom, who fled the camp of Secondigliano after a fire broke out recently.

Our intervention was aimed at promoting the use of the health care facilities of Distretto 52 by the newly settled ROM immigrants, with the help of the previous settlers who already refer to our health care centre.

Our intervention was preceded by the work done in the camp by the voluntary workers of Caritas. The second phase was carried out at the health care centre nearest the camp.

The Rom children were driven to the health care centre in groups by the voluntary workers of Caritas, in a minibus supplied for the purpose by the City Council of Naples.

An evaluation of his/her state of health was made for each child, to establish:

- Nutrition;
- Possible pathologies;
- Vaccination cover.

Eighty children aged between 6 months and 14 years were examined.

From the subsequent analysis of the clinical records, it emerged that the state of health of the children was on the whole more than satisfactory, the most common problem being multiple tooth decay and bad dental occlusions, followed by heart murmurs and skin disorders (Table 1).

Multiple tooth decay	number	30	37.5%
Heart murmur	number	10	12.5%
Skin infection	number	6	7.5%
No pathology	number	34	42.5%
Total		80	100%

Children with no vaccination cover or incomplete vaccination cover underwent active immunoprophylaxis with compulsory and recommended vaccines.

Administered were:

16 doses of inactivated polio vaccine, 17 doses of attenuated polio vaccine, 35 doses of anti-diphtheritic vaccine, 36 doses of anti-hepatitis B vaccine, 25 doses of acellular anti-pertussis vaccine.

The work is still ongoing, but our thought at the end of this phase is that the continual arrival in the area of illegal immigrants constitutes a health care problem that makes the constant presence of social and health care structures necessary in the area.

P19

Isolating Salmonella and Enteroviruses from Catania Coastal Seawater.

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The aim of our investigation was to assess the presence of Salmonella and enteroviruses in the seawaters along an eastern Sicilian coastal strip of about 20 Km. This area is dotted with several inhabited and touristic seaside resorts attracting large numbers of swimmers particularly in the Summer. Four sampling sites were identified and from March 1997 to March 1998, apart from the months August and December, monthly seawater samples were collected a few meters from the coastline at a depth of 70-100 cm. Salmonella assay was carried out on 1 L of seawater, by filtration with 0.45µm membranes, pre-enriched in peptonized water, enrichment, isolation on solid soils followed by biochemical and serological identification. As for enterovirus assessment, the samples (10L) underwent a concentration treatment through tangential flow ultrafiltration and the material obtained was decontaminated with chloroform (10%) and in BGM (Buffalo Green Monkey) cells in monolayers. Viral typing was carried out by seroculturalization. Salmonella was isolated in n.8 (18%) over 44 samples from all collection sites, but only in the Winter period. N.7 serotypes were identified, some of which (S. enteritidis) are frequently isolated in humans. As for enteroviruses, present in 12 of over 44 samples (27%), Retroviruses only were isolated, and again from all 4 collection sites and limited to the winter period due to its poor environmental resistance. Since it is difficult to assess the real extent of infection risk for swimming in waters thus contaminated further epidemiologic investigation is necessary.

P20

Travel Experience Across Developing Countries Of A Young Florentine Woman

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We report the experience of a young traveller who sets out every year on a long wandering journey across one of Developing Countries of Africa and Asia.

In the last 13 years she spent about 26 months abroad, recently in Senegal, Mali and Ivory Coast, sharing home, food and means of transport with local inhabitants.

It was possible to organize all journeys because of friendship with young immigrants met in Florence and their families still living in Africa.

During this time abroad no important disease occurred, but only minor gastroenteric disorders at the beginning, troubles due to quick climate change, circulatory stasis due to inadequate posture during long transfers on local means of transport and light hypovitaminosis.

Besides behavioural prevention (which is still the most successful strategy) a suitable organization before departure is basic in order to reduce health risks, according to the following check list: dental examination;

check of vaccinations: hepatitis A, hepatitis B, diphtheritis, tetanus, yellow fever, poliomyelitis, typhoid fever, periodical tuberculin tests (antimalaric chemioprophylaxis was not administered because of long duration stay), updating about rabies epidemiology.

Preparation of drugs and like products you can hardly find there: skin and mucosa disinfectants, disinfectant to make water drinkable; gynecological soap, condoms, refreshing tissue, wide-spectrum antibiotics antihistaminic liniment, shampoo against pediculosis, flies repellent, mineral and vitaminic integrators, dry shampoo, high protection sun cream, nourishing cream

Equipment and wear preparation: mosquito net, sunglasses, hat, pale long and covering wear, wool clothes, head scarf, comfortable and protective footwear.

A great knowledge of health risks is fundamental in luggage preparation. A good baggage infact has to be suitable to face all needs you can run into while travelling and at the same time it has to be as light and small as possible.

P21

Hepatitis a Seroprevalence in Travellers in Picardie

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Aim: to evaluate the seroprevalence of hepatitis A, in order to develop standard clinical practice in the travel medicine clinic at Amiens University Hospital, Picardie, France.

Methods: Using EPI-INFO software we performed a retrospective analysis of the results from total anti-hepatitis A antibody detection relative to patient age-ranges in travel medicine consultations over 3 1/2 years (from 01-01-1996 to 30-06-1999).

Results: Of 2000 prescribed blood tests, 943 serologies were tested and 660 were positive.

Irrespective of age-range, 70% of tests were positive.

Seropositivity in age-ranges 30-39, 40-49, 50-59 and >60 years were respectively 46, 66, 86 and 89%.

Discussion and conclusion: Two thirds of patients aged 40-49 have post-infective anti-hepatitis A antibodies. This protective immunity renders anti-hepatitis A vaccination useless.

In this region it would be better to vaccinate patients after performing hepatitis A serology above the age of 40 and not over 54 years as is recommended by the public hygiene council in France.

This clinical attitude allowed us to reduce the number of useless injections and the extra cost that this vaccination involved.

P22

Viral Hepatitis in the City of Skopje During 1988 - 1997.

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Introduction: Viral hepatitis represents acute liver necrosis and inflammation caused by at least five strictly hepatotropic viruses: A,B,C,D, and E. In the Republic Macedonia, viral hepatitis is on the sixth place concerning morbidity among the infectious diseases for 1997 and 1998, and in the structure of the totally registered cases the viral hepatitis A takes the first place. The aim of this article is to present the condition of viral hepatitis in the city of Skopje, during 1988/1997. We will examine the representation of this disease analyzing some morbidity parameters such as: age, sex, seasonal appearance, development tendency and the period investigation.

Material and Method: A total of 4828 patients with viral hepatitis in the city of Skopje were analyzed. Data required were provided by the City Public-Health Institute, The Republic Institute of Public Health and the Republic Bureau of Statistics. A descriptive epidemiological and statistical method was used in the analysis.

Results and Discussion: the average morbidity of this disease for the period investigated in the city of Skopje was 108.5/100,000 inhabitants. The lowest morbidity rate was registered in 1996 being 46.1, while the highest one in 1998 was 286.4. Most numerous patients with viral hepatitis were reported at the age of 5 to 9, 1320 cases, or the morbidity rate was 403.9/100,000. Morbidity rate of 13.4 was the lowest at the age of 60 and over.

In the total period investigated from 1988 to 1997, men were registered to have higher morbidity rates compared to women. The greatest number of men, 716 became ill in 1988, the morbidity rate was 325.3/100,000. In the same year the highest morbidity rate was also registered in women being 248.4/100,000 or 558 cases.

Seasonal index in this investigated period was the highest in December, while in the summer months, viral hepatitis appeared rarely. The trend of viral hepatitis in the city of Skopje for the period 1988/1997 showed mild declining.

P23

Hepatitis A associated with shellfish consumption in coastal areas.
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Hepatitis A is a global infectious disease that in Italy constitutes about 64% of the acute viral hepatitis. In the last years there has been an increase of hepatitis A cases both in domestic and in international travelers. The National Surveillance System (SEIEVA) reports that the crude annual incidence ranges from 2 per 100,000 persons/year in the northern regions of the country to 19 per 100,000 persons/year in the south. Travel in endemic areas constitutes an important risk factor for hepatitis A, with 60% of the notified cases in the North of Italy, 30% of which gave a history of travel in the last six weeks. Shellfish consumption, especially rare or lightly cooked, is a major risk factor of HAV cases. A survey, carried out in mussels obtained from seafood markets of two different coastal areas, chosen because of their high percentage of HAV cases, showed an important incidence (about 9%) of the HAV in the examined samples. Our studies concerning the HAV resistance in experimentally contaminated mussels subjected to different domestic cooking processes, showed that these treatments do not always guarantee viral-free product.

P24

Seroprevalence of Hepatitis A antibodies in travelers.

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Background: In developing countries most children develop subclinical, anicteric HAV infection within the first years of life with nearly universal sero-conversion occurring by adulthood. Developed countries generally have a low anti-HAV prevalence in children and young adults while a high frequency of antibody may be found in adults or the elderly. Seroepidemiologic studies have also revealed striking differences in the prevalence of anti-HAV in different areas of the world.

Objective: To study the frequency of anti-HAV antibodies in travelers without history of acute hepatitis or vaccination against hepatitis A.

Methods: In travelers, ages 18 - 57 years old, a serum sample was taken and tested for presence of anti-HAV antibody (Behring). A blood sample was collected when the traveller could not recall any signs or symptoms compatible with acute hepatitis in the past.

Results: Sera from 240 travelers, visiting travel clinics for pre-travel consultations, malaria chemoprophylaxis or vaccination, including Hepatitis A, were collected. More than 80% of subjects, born from 1942 to 1946, were anti-HAV positive. Only half were anti-HAV positive among those born between 1947 to 1956 and approximately one third among those born five years later. The percentage of anti-HAV positive was less than 10% in travelers aged 30 years or less.

Conclusion: Hepatitis A is a notifiable disease in Slovenia. From approximately 2000 to more than 6000 cases were notified yearly from 1953 to the early eighties. In the last ten years, the number of notified cases has dropped extensively, less than 100 cases per year were notified in the last years. Consequently, the number of travelers, immune to hepatitis A, is expected to decrease even more. For a traveler to developing country vaccination against hepatitis A is strongly recommended.

P25

Viral Hepatitis on the Territory of the Republic of Macedonia During 1988 - 1997.

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Introduction: Viral hepatitis, one of the significant socio-medical problems in the Republic of Macedonia, has been treated from different aspects at all three levels of the health care system in the Republic, i.e. the primary, secondary, and tertiary healthcare prevention. The aim of this article is to present the condition of viral hepatitis in the territory of the Republic of Macedonia during 1988 -1997. An analysis has been made for some morbidity parameters such as age, sex, geographic distribution, seasonality, developmental tendency in the period investigated.

Material and method: A total of 23,531 patients with viral hepatitis in the territory of the Republic of Macedonia were analyzed during the period investigated, 1988 - 1997. The data were provided by the City Public Health Institute, the Republic Institute of Public Health, and the Republic Bureau of Statistics. A descriptive epidemiologic and statistic method was used in the analysis.

Results and discussion: The average morbidity rate of this disease for the period investigated in the territory of the Republic of Macedonia was 120.9/100,000 inhabitants. The highest morbidity rate was registered in 1988 being 236.3/100,000, while in 1996 morbidity rate of 42.1/100,000 was the lowest. The largest number of patients, 8186 was reported in the age group 5-9 years, with a morbidity rate of 500.6/100,000. In 1996 the morbidity rate was the lowest in both genders (in men 47.5/100,000; in women 36.6/100,000 inhabitants). Concerning the geographic distribution, the municipalities of Debar dominated with morbidity rate of 322.5 and Radovish with 308.8/100,000. During the investigated period, the mean monthly number of registered viral hepatitis patients was 196.1. The disease had a seasonal character in the territory of the Republic of Macedonia, and the seasonal index for November had the highest value.

Conclusion: In the investigated period 1988 - 1997, viral hepatitis declined in the territory of the Republic of Macedonia.

P26

Fatal Hepatitis E Acquired in South Italy.

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A 73-year-old female patient was admitted because of malaise and progressive icterus since 3 days. Her liver enzyme levels were considerably elevated and serologic tests ruled out infection with hepatitis A, B or C virus and acute infection with cytomegalovirus or Epstein-Barr virus. Besides a diagnosis of pernicious anemia, her past medical history was unremarkable. Liver enzymes and icterus improved and the patient was sent home with a diagnosis of non-A non-B non-C hepatitis.

The patient was re-admitted 4 weeks later because of worsening icterus. Only on this admission did her short holiday trip from Germany directly to South Italy seven weeks prior to the first admission become known. Positive antibody titers against Hepatitis E virus (IgG and IgM) were found. Six weeks later the patient's condition deteriorated with the increase of icterus, worsening liver function, diminishing of liver size and signs of hepatic encephalopathy. Despite intensive care treatment the patient died a few days later.

This case report demonstrates the presence of Hepatitis E virus in Western Europe, and shows the importance of obtaining a detailed travel history in icteric patients even if the itinerary does not include the tropics.

Patients with reduced gastric acidity show a high susceptibility to enterically transmitted pathogens. That is why pre-travel counseling concerning water and food hygiene seems necessary for patients with conditions associated with gastric hypo- or achlorhydria (e.g. pernicious anemia).

P27

Prevalence of anti-HAV antibody in Spanish travelers to high-endemicity areas.

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Objectives: To assess the prevalence of anti-HAV antibody in persons living in an intermediate-endemicity country before they travel to high-endemicity regions.

Methods: The study population was healthy travelers between 18 and 55 years of age who were seen in the Adult Vaccination Center, Hospital Clinic, Barcelona, for receiving traveler vaccines. All consecutive potential international travelers to high-endemicity regions, that were into the defined range of age and that accepted to participate, were included in the study. Information on age, gender, country of destination, previous history of vaccination against HAV or received immunoglobulin (in the previous 6 months), was recorded. Four drops of whole blood were obtained from each participant, collected on filter paper, air dried and stored at +4°C until antibody determination. Eluates were tested for the presence of anti-HAV antibody by and ELISA method.

Results: A total of 485 travelers (18-55 years of age) were recruited in 1999. The mean of age (SD) was 30.8 (7.1) years and the male/female ratio was 50.4%/49.6%. Six subjects were excluded: four were previously vaccinated against HAV and two had received immunoglobulin. Anti-HAV antibody was found in 30.5% (95%CI: 26.4-34.8) of the subjects. No difference on prevalence between sexes was found. The prevalence of anti-HAV antibody in the study population stratified by group of year, was: 9.8% (95%CI: 5.5-16.5) in 18-25 y. group, 17.6% (95%CI: 11.5-26.0) in 26-30 y. group, 31.5% (95%CI: 23.1-41.2) in 31-35 y. group, 57.6% (95%CI: 44.8-69.4) in 36-40 y. group, and 75.4% (95%CI: 61.4-85.8) in ≥ 41 y. group.

Conclusions: 75% of potential Spanish international travelers to developing countries are younger than 36 years of age. Globally, only 19% (68/360) of them will be protected against HAV infection. Prevalence is higher in older groups, but 42% and 25% of international travelers aged 36-40 years and ≥ 41 years, respectively, are anti-HAV-negative.

P28

Serological Surveillance Data on HIV in the Republic of Macedonia
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The epidemiological situation as regards HIV/AIDS in Macedonia seems to be under reported. With the socio-political transition, independent reports indicate that HIV/AIDS has been increasing rapidly in Macedonia due to the following facts: it is on the route of drug transportation from Turkey and Bulgaria to the Western European countries; increasing number of IV drug users and their close relation with IV drug users from the neighboring countries with much higher HIV incidence; existence of illegal prostitution in the country (with the presence of prostitutes from countries with high HIV); increasing number of refugees and the unstable political, economic and social situation in the country and in the region.

Related to the serological surveillance data on HIV gathered through cross-sectional monitoring - that is, testing of a certain population at single points in time - we assessed with longitudinal cohort studies that followed the group over time how many became infected within a certain period. This study was done in seven different groups including patients on hemodialysis, patients with transplantation, people with STD, people with high risk behavior, young people aged 18-24, pregnant women, and blood donors. Among the two groups of patients with transplantation monitored over a period of three months (once in 1997 and once in 1998) the serological surveillance data on HIV showed a prevalence of 1,14% (frequency 1/87) in 1997, compared with 0,94% (frequency 1/106) in 1998. The prevalence of HIV among patients assumed to have STD was 0.49% (frequency 1/205) in 1997, and 0,71% (frequency 1/140) in 1998. The HIV prevalence among two groups of people with high risk behaviour was 0.95% (frequency 1/106) in 1997, and 1,94% (frequency 1/96) in 1998. The prevalence of HIV among pregnant women was 0,54% (1/185) in 1997, and 0,25% (frequency 1/407) in 1998. The two groups of 18-24 year-olds were tested in 1997 and 1998. The infection rates remain higher in 1998. The prevalence in that year was 0,63% (1/158) compared with 0,50% (1/201) in 1997.

P29

Imported malaria in University Hospital Center of Angers (France) from 1987 to 1997.

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This study included 175 patients hospitalised in our hospital for imported malaria from 1987 to 1997. In emergency, the malaria was diagnosed by thin blood film. The number of cases increased from 1987 to 1990 (+100 %) then, after this year, it was stabilised to 20-22 per year.

76.5% of travellers were french, sex ratio was 1.57 and mean age was 31 years (1-76), 18 were children. Only 32 travellers had followed a suitable prophylaxis regarding the country visited.

Plasmodium falciparum was the most frequent species (76.6%) isolated, related to the African origin of the contamination (85.7%). Whatever the parasite species, the mean delay between the first symptom of malaria and the consultation for diagnosis was 5 days and thrombopenia was the most frequent biological abnormality (73%).

For the *falciparum* malaria, quinine was used in first intention for 79% of the patients, and exclusively by perfusion during 2.6 days. In second intention, oral quinine was used for 52 patients during 5 days, mefloquine for 10 patients and halofantrine for 12. These treatments were used after quinine only since 1994. For 21% of *falciparum* malaria, they were used in first intention and in 1997, they superseded the quinine.

According to the WHO criteria, no severe *falciparum* malaria was observed. Nevertheless, 6 patients were hospitalised in an intensive care unit and all were cured with quinine alone or quinine and doxycycline.

For *P. vivax*, *P. ovale* and *P. malariae*, chloroquine was used.

P30

Imported Malaria in Europe: Sentinel Surveillance Data 1998-1999
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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.

P31

Imported Schistosomiasis in Europe: Sentinel Surveillance Data 1998-1999

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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. A thorough recording of epidemiological and clinical aspects of imported schistosomiasis will detect new infections and will trigger further planning of 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 schistosomiasis will be presented.

P32

Imported Dengue Fever in Europe: Sentinel Surveillance Data 1998-1999

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The incidence of dengue fever among European travellers is certainly by far underestimated since only few centres on the continent provide standardized diagnostic procedures for febrile patients. Also, dengue is currently not reported in any European public health system. Still, estimates show that this infection appears to be surprisingly common among returnees from endemic areas. More information about epidemiological details in travellers might be helpful to decrease the number of cases. A thorough recording of epidemiological and clinical aspects of imported dengue will trigger further planning of 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 dengue will be presented.

P33

Change in Ejaculate as a Symptom of Infection with *Schistosoma haematobium* in Travellers

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Introduction -Schistosomiasis is a major endemic disease of the tropics and subtropics affecting 200 million people worldwide. Changes in travel destination and habits have made a previously uncommon disease in western travellers a more prevalent imported disease in developed countries. Not only those who had been resident in the tropics for extended periods, but anyone who swims in freshwater lakes, washes or bathes in infected water is exposed to the disease. We report the largest series of cases with alteration in seminal fluid as principal symptom of *Schistosoma haematobium* infection.

-Objectives, design and subjects - To describe the symptoms of this clinical presentation and define the incidence in those infected with *S. haematobium*. The usefulness of parasitological investigation and the efficacy of treatment were also examined. Retrospective review of 50 cases of seminal Schistosomiasis aged 19- 49, diagnosed on microscopy or serology, presenting to the Hospital of Tropical Diseases, London (between 1993 and 1999).

Results - Among the 50 cases, the median age at presentation was 27 years. 54% of cases had swum in lake Malawi, 17% in either lake Malawi, lake Kariba or the Zambesi river. The rest of cases were exposed elsewhere in Africa. Mean duration between onset of symptoms and exposure in travellers was 18 weeks and in those who previously had been residents in the tropics 2 years. Alteration of ejaculate consisted of lumpy semen (58%), yellow discolouration (52%), haemospermia (36%), altered viscosity to watery consistency (22%) and a reduction of volume (4%). Additional symptoms were frank haematuria (36%), tiredness (22%), sexual dysfunction (6%), and others (30%- perineal / scrotal pain & dysuria). Serology was positive in 83% and ova of *Schistosoma haematobium* were found in 78% (68% semen, 54% urine, stool 2%). Serology had a sensitivity of 79% in ova positive cases, with eosinophilia in 57%. Semen provided the sole parasitologic confirmation of the disease in 22%. Urine dipstick and /or Microscopy were positive for blood in 34%. Transrectal sonographic changes (dilatation of seminal vesicles & ejaculatory ducts, hyperechogenic foci in prostate or seminal vesicle) were seen on 2 out of 7 scans. Number and motility of spermatozoa was not routinely assessed, but when examined was normal. 34 patients were followed for 3 – 24 months. Serology was the same or higher than at treatment in 59% of cases at 3, 41% at 6 and 34% at 24 months. 5% had persistent eosinophilia at a year. Definite treatment failure with praziquantel occurred in 4%. A group with transient recurrent symptoms but no parasitological evidence of continuing disease suggested 8% possible failure rate.

Conclusion - Semen changes occur in 6% of men with Schistosomiasis, but in 19% of ova proven cases, all of whom were *S. haematobium*. A high index of suspicion is required and any travellers to endemic areas should routinely be asked about a change in ejaculate (the pattern of which is quite specific for *S. haematobium* infection). A combination of serology, semen & urine microscopy is necessary for the diagnosis : either alone can miss cases. Semen should be used as sample material. Urinedip-stick and eosinophil count are inadequate screening tools. Persisting positive serology is not an indication of treatment failure. The failure rate with praziquantel is low.

P34

Malaria Surveillance and the Planning of a Malaria Prevention Project for Non-European Immigrants

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Purpose: To analyze the cases of malaria reported to the local health unit (ULSS 9) of Treviso from January 1, 1990 through October 31, 1999, to identify risk factors and sub-populations at risk.

Methods: Variables analyzed included: year malaria was diagnosed, sex, age, nationality, having a social-sanitary number continent visited, purpose of travel, use or non-use of prophylaxis for malaria prevention.

Results: There has been an increase in the number of cases of malaria during the ten-year period studied. The number of cases among Italian citizens has remained quite stable while cases among foreigners living in Italy has increased. The analysis of risk factors shows that the malaria cases are prevalently among males, non-European immigrants mostly returning from trips to countries in central Africa, who have a social-sanitary number, did not follow any antimalarial prophylaxis and who did not receive any specific information regarding the risks of contracting malaria during their trip. Until 1994 there were no cases of malaria in non-European children. Since 1995, cases of malaria in children have been observed; in 1999 the percentage of cases in children has increased significantly. These children were exposed to and contracted malaria during a visit to their parents' country of origin.

Planning of a Malaria Prevention Project for Non-European Immigrants and Their Children:

The results of the surveillance clearly demonstrate that adult males originating from Central Africa are at risk of contracting malaria. Perhaps even more important are the data that demonstrate that young children of African immigrants are contracting malaria, either during travel with their parents to Africa, or when they arrive here for the first time with their parents. Parents of these children do not know that preventive measures need to be taken to avoid that their children do not contract malaria when exposed to it. They tend to under-evaluate the disease since it is endemic in their country of birth.. Based on these results in our health district, a malaria prevention program for families of African immigrants is being launched. The goal is to reduce malaria in these two high risk groups: children and adults of African immigrants.

The educational objectives of the project are:

- * acquire knowledge regarding the risk of exposure to malaria
- * improve knowledge regarding the disease and measures to avoid malaria
- * adopt protective measures in the environment to avoid contracting malaria
- * adopt the preventive measure of chemoprophylaxis

The strategies used are:

- * involvement of pediatricians and general practitioners
- * mapping of the services/ institutions which immigrant families should use prior to traveling to their homeland
- * formulation of informative messages in Italian, French and English in relevant places

The success and difficulties of launching this program will be presented.

P35

The B.A.L. in the Diagnosis of Lower Respiratory Tract Infections.
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To isolate the responsible potential micro-organisms of the infections of the respiratory tracts, the B.A.L. has been obtained from 250 patients (80 women and 170 men between 50-80 years old), hospitalized in the two years 1997/1998, in the II Division of Pneumology because they had exacerbations of COPD.

The B.A.L. have been obtained by bronchoscopy in the lower respiratory tract, 100 ml of sterile physiological solution. The recovered material, at least 10 ml, has been sent to the laboratory of microbiology and tried according to the standard techniques.

In 150 cultures (60%), there was growth of micro-organisms: Gram positive (53.5%), Gram negative (30.5%) and Miceti (16%).

No growth was noted in the remaining 40% of the cultures, to confirmation of the important role of the virus in the exacerbation of chronic bronchitis. The methodology has allowed us, with the isolation of microorganisms, to effect a specific therapy (antibiotic assay) systematics and local (bronchomedications) with the reduction of hospitalization.

P36

Improving Diphtheria Immunity in a West German Small Town by Informing Medical Staff and the Population

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The epidemic reoccurrence of diphtheria in Eastern Europe in the last years reminded health authorities of this disease also in Western Europe. Supported by the Ministry of Social Affairs of the German federal state Rheinland-Pfalz the population immunity on diphtheria was controlled in a small town (15.000 inhabitants) before and after information campaigns to the medical staff (physicians, pharmacists, co-workers of them) and in the population (information stalls in the town center, talking with parents during first attendance to school, posting bills in town).

Before campaigns 428 sera and afterwards 374 sera of all age groups were collected and tested serologically. Tests were performed in a double-toxoid enzyme-immunoassay standardized in a bioassay. The level of population immunity (all specimens $<0,1$ IU/ml) was 65% before and 50% after campaigns. The highest value before was 90% in the 32-41 year old and 68% in the 42-51 year old afterwards. A third of 3-6 year old children were low or unprotected in the beginning. At the end this value was improved with 22%.

The study demonstrated that improving the vaccination immunity in a population is possible by the way professional information is given and frightening the people is avoided. This can be performed with small financial support but it requires the cooperation of all regional medical groups. Serological surveillance with a validated test system is a forcible necessity to get information on the success of all measures.

P37

Groups and Types of β -hemolytic Streptococci Isolated in Romania (1999-1998)

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During 9 years (1990-1998) 8696 strains of β -hemolytic streptococci were collected by the National Reference Centre for streptococci in Bucharest, Romania.

54,7% of strains were of group A, 12,9% - group B, 12,7% - group C, 19,7% - group G. The most of group A streptococci (52%) were isolated from acute tonsillitis and scarlet fever cases, 26% from skin infections and 22% from healthy carriers and other clinical manifestations. The strains of group non-A β -hemolytic streptococci were isolated from uro-genital tract (49,2%), 24,1% from respiratory tract, 22,4% from pharyngeal and nasal carriers and 4,3% from skin infections. 16 types of group A streptococci were identified. The incidence of patterns 1,3,13,B3264 was revealed during the first period of study and the predominance of type 1 was not associated with clinical severity of streptococcal illnesses. After 1993 the types 5,11,12,27 from acute tonsillitis and scarlet fever cases were predominant, while type 2 was mostly isolated from skin infections.

P38

The Evaluation of the Efficacy of Measles Vaccine in Adana Province, Turkey

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Every year three of a hundred children dying because of a lack of immunization die due to measles. Although the vaccination schedule for measles differs among countries, almost all European countries apply a two-dose schedule. The measles vaccine in Turkey is applied in 9 months of age. In order to indicate the need for a second dose, the immunity profile of children should be determined in a specified area.

This study aimed to determine the immunity status of measles vaccine of 275 children attending the 1st and 5th grades of elementary school and the effect of a second dose of measles vaccine in Adana province, Turkey.

In 1995 it was determined that among 7 years old children attending 1st grade of elementary school that were once vaccinated against measles at infant age group, 73.2% and 26.8% had positive and negative immunity for measles, respectively. While among 11 years old children attending 5th grade the same percentages were 88.4% (positive immunity) and 11.6% (negative immunity), respectively. These two groups of children received a second dose of measles vaccine at that time. The control investigation performed one year later in 1996 revealed that first group (8 years old at the time of second investigation) had positive immunity in a percentage of 91.3% and negative in 8.7%, while the second group (12 years old at that time) had positive immunity in 98.5% and negative in 1.5%.

While the immunity status of 8 and 12 years old age groups (twice vaccinated) did not differ statistically ($p>0.05$), that of 7 and 11 y.o. groups (once vaccinated) was statistically significant ($p<0.05$), being observed a higher immunity percentage in 11 y.o. group. This can be attributed to the fact that 11 y.o. children had been vaccinated around 12 months of age in infant period, instead of 9 months of age.

The effect of a second dose intervention produced a statistically significant rise in measles immunity ($p<0.05$). Factors that can be accused for the change of immunity such as sex of the child, educational level of mothers or fathers, the health institution providing vaccination had no statistical significance.

It can be concluded that the main factor for increasing the measles immunity is the two-dose schedule instead of one-dose one and it is suggested that a second dose vaccination should be scheduled for children attending 1st or 5th grade of elementary school and this schedule has been applied in Adana province since 1995 following the results of this study.

P39

Antibiotic Resistance of Shigella and Salmonella in Dubrovnik
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Travellers diarrhoea is still one of the most important reported diseases among foreign tourists in Dubrovnik.

In 1998 the leading causes for hospitalisation among foreign tourists in Dubrovnik were injuries, than GIT diseases (27,1% of all hospitalized), cardiovascular and central nerve system diseases. According to data from the study 87-89.,foreign tourists in Dubrovnik, mostly suffered from GIT diseases, injures, cardiovascular and central nerve system diseases. Travellers diarrhoea accounts for the frequency of GIT diseases with rate of 54.5% as the leading cause for hospitalisation. In 1998 GIT diseases

More attention should be payed on common enteral pathogens, especially emergence of antibiotic resistance.

The problem of drug resistance encompasses different kinds of infectious organisms and populations worldwide. It leads to increased morbidity, mortality, and health care costs.

The aim of the present survey was to collect data concerning the frequency of resistance of Salmonella and Shigella sp.

Six months summarized data (1998.) on bacterial resistance to a number of widely used antibiotics, for the Salmonella and Shigella sp.in Dubrovnik region are presented. Bacterial strains were isolated from different hospitalized and from outpatients and were identified by routine standard techniques.

The antibiotic susceptibilities were determined by disk diffusion method (according to the NCCLS standards).

Salmonella spp. did not showed resistance to quinolones CIP, and 3rd generation of cephalosporins CRO, and good sensitivity to AMX, AMC,CL and SXT (resistance to AMX 2,3%, AMC 0,9%, CL 0%, SXT 0,6%; Shigella spp. showed high resistanse to: AMX 99,6%,TE 85,8%, and SXT 99,6%, but no resistance to quinolones NOR 0.

Surveillance data available at national, state, and local levels are needed to help clinicians know which antimicrobials to prescribe, and help public health officials mount campaigns to improve antimicrobial use and infection control practices.

P40

Meningoencephalitis By Tuscany Virus: Epidemiological And Clinical Aspects

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Meningoencephalitis caused by Tuscany virus (so defined because identified in Tuscany in 1971) represents a very interesting recently known disease.

From a clinical point of view the disease is referred to a benign clear cerebrospinal fluid meningoencephalitis.

Tuscany virus is carried by sandfly , a small winged insect, whose female bites especially at night. It settles in domestic and country environment , mostly in hill areas.

Cases are diagnosed especially in Spring and Summer , generally among young adults.

Often near homes of infected people we can find cattle breedings and uncultivated woodlands.

Moreover infected people often practice jobs and freetime activities in the open air (horse riding, road racing).

The mainly infested area is a part of Florence district, called Valdarno and Chianti. The amenity of resorts drives a large touristic flow all over the year.

Infact among 50 cases diagnosed in the area in the last five years , 8 cases have occurred among foreign people coming from European and extra European Countries (France, Scotland, Germany, Holland, Poland, Rumania, Kosovo and Korea).

As notification only refers to people admitted to hospital , the real number of cases could be underestimated.

Local Health Authority (A.S.L. 10) is carrying out a plan with the following aims:

- epidemiological study of cases and active collection of sanitary data;
- sensibilization of sanitary personnel for better accuracy in diagnosis and notifications;
- environment actions including sandflies mapping to reclaim infested areas;
- educational campaign directed to population for a better knowledge of the problem and preventive measures.

P41

Association Between Tick Bites And Intensity Of Specific Immune Response To *Borrelia Burgdorferi* In Residents Of Endemic Region For Lyme Borreliosis In North-eastern Poland

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Epidemiologic and clinical studies performed in north-eastern Poland demonstrated, that Lyme borreliosis (LB) is an endemic disease in this region, particularly in the area of Białowieża Primeval Forest. This is a result of constant exposure of inhabitants to ticks with relatively high rate of infection with *Borrelia burgdorferi*. The aim of study was evaluation of association between degree of exposure to ticks and intensity of quantitative specific immune response against antigens of *Borrelia burgdorferi*.

Serological analysis was performed with an EIA using VIDAS Lyme Screen II (bioMérieux) in 76 inhabitants of Białowieża village. Specific immune response intensity was demonstrated through measurement of optical density related to IgM and IgG antibodies (total) against *Borrelia burgdorferi*. All persons involved into the study were asked to estimate frequency of tick bites. It made possible to divide them into four groups: I - less than once a year (n=19), II - 1 to 12 a year (n=36), III - 1 to 4 a month (n=11), IV - at least once a week (n=10). Optical density values obtained in particular groups were compared and significance of the difference was calculated by two-tailed Student's t-test. For correlation analysis between individual values and number of tick bites the Pearson product moment correlation was used and linear regression performed. Positive results of serological evaluation were demonstrated in 21 persons (28%). Mean optical density increased simultaneously with exposure to tick bites. The highest values were demonstrated in IV group (mean: 1.91 ± 0.4) and they were significantly higher than in groups: I (mean: 0.48 ± 0.11 ; $p=0.0001$), II (0.69 ± 0.1 ; $p=0.0001$) and III (0.91 ± 0.24 ; $p=0.04$). It was also confirmed through significant positive correlation between number of tick bites and value of optical density related to specific immune response ($r=0.507$; $p<0.001$). There were no statistically significant differences between groups I, II and III. These results confirm high risk of Lyme borreliosis in the area of Białowieża Primeval Forest. Additionally we demonstrated in this endemic region strong association between exposure to tick bites and intensity of specific immune response against *Borrelia burgdorferi*.

P42

Comparison of Vaccinal Status Between Travellers and Non-Travellers.

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The yellow fever vaccine is the only obligatory vaccine for travels in tropical countries of Africa and South America. But other vaccinations, approved by the Conseil superior d'hygiene publique de France, are also recommended to travelers going to tropical regions. We propose to evaluate the vaccination status between a population of travelers to tropical countries and a population of non-travelers.

Methodology: We investigated two groups of French people over twenty years of age. The travelers were interrogated immediately after their arrival, at an official center for yellow fever vaccination. Some of them had already received some other vaccines from their general practitioner. The non travelers were contacted by phone.

Results: 200 travelers and 100 non travelers were included. The mean age was 42 years for the two groups and the gender distribution was equal. The general vaccination status was significantly better in the travelers comparing with the non travelers: booster since less than 10 years of tetanus vaccination (78% vs. 65%), of poliomyelitis vaccination (63% vs 45%), of diphtheria vaccination (53% vs. 34%), hepatitis A vaccination (22% vs. 1%) and hepatitis B vaccination (59% vs. 27%). In the traveler group, we distinguished 100 persons traveling for the first time and 100 persons who have already traveled in tropical countries. This last sample presents an equivalent vaccination status for hepatitis A and B vaccinations, but a worse status for tetanus, poliomyelitis and diphtheria vaccinations. The intend to vaccine against all diseases is less frequent in the group who has already traveled.

Conclusions: travel is a way to improve the vaccination status of the French population. The medical consultation of the traveler, before a first or a new travel, represents an opportunity to examine the vaccination status concerning the general vaccinations and to realize the specific vaccinations recommended for tropical travel.

P43

Immunogenicity of an Oral O1/O139 Whole Cell *Vibrio cholerae*/Recombinant Cholera Toxin B Subunit Vaccine in Health Children in Sweden and Nicaragua - Differences in proportions of seroconversion and Post-Vaccination Level of Anti-cholera Antibodies.

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Background: There is a medical need to protect children against cholera. An oral vaccine against cholera has been developed by SBL Vaccin, Stockholm.

Method: Health children in Stockholm and Leon age 1-12 years inclusive were randomized to receive two oral doses of vaccine or placebo + buffer + water with approximately 2 week interval. Blood samples were collected immediately before dose 1 and 7-21 days after dose 2. The samples were analyzed at SBL Vaccin for serum O1 vibriocidal cholera antibody titers and also for anti-CTB titres by FMI-ELISA IgA. The ELISA results are presented as SBL inhouse units, and they are compared to data from a longitudinal cohort study, conducted earlier in Leon.

Results: The seroconversion proportions measured by vibriocidal antibodies in the vaccinated and placebo groups were 85% and 0% in Stockholm, compared to 36% and 1% in Leon. In an earlier Nicaraguan cohort study 235 children were followed from birth until 2 years of age. Among healthy, asymptomatic children in Nicaragua the GMI, ELISA IgA titres were: at birth 2.8, at 3 months 8.5, at 6 months 15.7, and at 18 months 22.7 ELISA units/ml, respectively.

Conclusions: The vaccine was immunogenic, but vaccinated Stockholm children had lower pre-vaccination and higher post-vaccination levels than Leon children and different proportions of seroconversion. This observation may indicate that the efficiency of the vaccine may differ between different pediatric populations.

P44

Onchocerciasis in Spanish Patients: Report of Ten Imported Cases. **S. PUENTE***, **M. LAGO***, **M. SUBIRATS***, **T. GARATE****, **M. RODRIGUEZ**** and **J.M. GONZALEZ LA HOZ***. **Servicio de Enfermedades Infecciosas - Medicina Tropical. Hospital Carlos III, Madrid* and ***Servicio de Parasitologica, Instituto de Salud Carlos III, Madrid, Spain.*

Objectives: To describe the principal clinical and laboratory features of ten Spanish patients, visitors to endemic areas, who were studied in the Department of Tropical Medicine of the Hospital Carlos III from March 1993 to September 1999.

Materials and methods: Study subjects: ten Spanish patients, travelers to onchocerciasis endemic areas. Clinical evaluation: clinical and ophthalmologic examinations. Laboratory evaluation: complete blood count, serum biochemical studies, quantitation of serum IgE and *Onchocerca volvulus* IgGs (IgG1, IgG2, IgG3, IgG4, total IgG). Parasitologic examination: microfilariae detection (skin and blood), identification of adult worms in subcutaneous nodules (onchocercomas) and intestinal parasites evaluation (stool).

Results: Sex: male/female (4/6), age 46 years (20/66). Place of residence: Equatorial Guinea 7, Cameroon 2, Cameroon and Cote d'Ivoire 1. Period of exposure to infection: 8.9 years (2 months - 39 years). Clinical and parasitic findings: skin disease (pruritus and rash) in 7 cases. Ophthalmologic exploration was normal in the ten patients. Eight patients presented eosinophilia. High IgE levels were detected in all ten patients. Positive microfilariae in skin in 7 cases. Mazzotti test and *Onchocerca volvulus* IgG4 were positive in 2 cases. Onchocercoma (biopsy) in 1 case. One patient showed concurrent infection of Loa Loa. Intestinal parasites were not found.

Discussion: Onchocerciasis has to be suspected in non-endemic people coming back from endemic areas, mainly when dermatitis, subcutaneous nodules and/or eosinophilia are found.

P45

The Measles Antibodies Seroprevalence Among Young Adults, Croatia, 1998.

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Young adults are among those who are the most frequent travelers. Measles are a vaccine-preventable diseases. However, we register measles cases every year. The epidemiological services of the Croatian Institut of Public Health registered 245 measles cases in 1997, of whom 36 cases (15.0%) were among young adults.

In 1998 the second dose schedule was introduced and it expected that the measles incidence among young adults in Croatia will soon be reduced. It is necessary to prevent the infection among the risk population groups, especially among young adults (students, soldiers, travelers).

A cross-sectional study of measles antibody seroprevalence was done in 1998 among young adults. A randomly chosen sample of 300 young adults, representative of the Croatian young adult population, gave informed consent to participate in the study and donated serum. Two hundred forty sera were tested with ELISA assay for IgG antibodies. In 37.2% of tested sera we did not detect protective levels of antibodies.

Those results indicate a high risk of measles infections among Croatian young adults although the vaccination coverage is very high (92.0%). Measles can appear, even in epidemic form especially when young adults travel abroad.

P46

Post-marketing Surveillance in the United States for Adverse Events Following Japanese Encephalitis Virus Vaccination.

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Prior to licensure of Japanese Encephalitis Virus Vaccine, inactivated (JE-VAX) (Dec. 1992 in the United States) there were reported in Denmark (1) and Australia (2) a marked increase in hypersensitivity reactions following vaccination. These reactions were characterized by urticaria and/or angioedema and in some instances were accompanied by respiratory distress and/or hypotension, which led to hospitalization. An important characteristic of these reactions was the interval between vaccination and the onset of symptoms. Following the first dose, the median interval was 12 hours and after the second dose, the interval was longer (median 3 days) and possibly as long as 2 weeks. This led to the following statement in the warning section in the product insert: "Persons should not embark on international travel within 10 days of JE-VAX immunization because of the possibility of delayed allergic reactions".

A post-marketing study was conducted in the U.S. following wide spread use of JE-VAX to further investigate the safety profile of this vaccine. This study consisted of two parts. The first part included a diary card with each vaccine shipment to record the occurrence of selected possible adverse events (AE) along with their severity. The second part consisted of a review of all AE's submitted to the Vaccine Adverse Event System (VAERS) from December 1992 to July 1999. The rates of AE's were calculated based on the number of doses distributed to the U.S. during that time period.

Results: Diary cards were received from 484, 316 and 226 subjects for dose 1, 2 and 3 respectively. The maximum number of local reactions occurred on day one following vaccination and were similar for all three doses: redness 9-10%, swelling 9-11%, and pain 19-24%. For systemic reactions rash, swelling and hives occurred in <1%, itching 2-4%, muscle aches 4-10% headache 3-7% and fever 1-45. The frequency of reactions was similar for all doses. Approximately 32% of the subjects received concomitant vaccines. There were no vaccine-associated hospitalizations.

There were 135 cases with one or more adverse events following vaccination reported to VAERS during this time period and 1,098,175 cases of vaccine distributed (12.3/100,000) of which 20 were classified as serious (1.8/100,000). There were 67 cases classified as hypersensitivity reactions (6.1/100,000) including one case reported as anaphylaxis with an onset the day of vaccination where the patient was hospitalized and had a full recovery (0.09/100,000). There were two deaths reported, one an 8-year-old male with complex congenital heart disease who 13 days post-vaccination died from cardiac arrest. The second, a 21 year old male, who also received whole cell typhoid vaccine, died 75 minutes following vaccination, while exercising, from heat exhaustion (core temperature 108F).

Conclusion: Post-marketing surveillance demonstrates JE-VAX to have a good safety profile and failed to confirm a high frequency of allergic reactions and in particular those of late onset that were reported pre-licensure.

P47

Ecto - Endo Zoonotic Parasite Investigation on Mirror Carp (*Cyprinus Carpio*, L., 1758) Captured from the River Seyhan/Turkey. **N. AYTAC***, **A. SAHAN****, **A.A. OZAK****. *Medical Faculty, University of Cukurova, Adana, **Faculty of Fisheries, University of Cukurova, Adana, Turkey.

The aim of this study was to determine the ecto-endo parasites of mirror carp (*Cyprinus carpio*, L., 1758) living in the Seyhan River, one of the most important rivers in Turkey, between January 1996 and November 1997. The captured fish is normally consumed in tourist restaurants and hotels in the region. During this period a total of 145 mirror carp were examined for ecto-endo and especially zoonotic parasites. Each month 10-15 mirror carps were sampled. Eighty-six (59.32%) fish were heavily infested with the parasites and the remaining were healthy. Ecto parasites such as Monogean trematods, *Dactylogyrus vastator* and *gyrodactylogyrus elegans*, Protozoan parasites, *Ichthyophthiriasis multifilis* and *Trichodina nigra* were observed on the fish. Cestods such as *Schistocephalus* sp. and *Caryophyllaeus mutabilis* were also found as endo parasites. As a result, the parasites found on the mirror carp from the Seyhan River were not hazardous to public health.

P48

Effects of Thermal Shock on Enterotoxins of Isolated Vibrios from Aquatic Environment.

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Vibrio cholera, the cause of cholera, is viable in suitable aquatic environments. This bacterium produces different metabolites of which enterotoxins are the most frequent. Cholera toxin is a two chain toxin that is heat sensitive.

Some of *Vibrio* strains produce other toxins which are similar with cholera toxin, but their structure and biologic function are different. These differences can cause infection with a different form, sub-acute to acute.

In this investigation, some strains of *Vibrio*, isolated from North of Iran, were examined. Ten strains were known as *Vibrio cholera*. Enterotoxin production was tested for each strain and was detected by injection to infant mice. Effects of thermal shock on different periods affected on enterotoxins and were detected again by infant mice method.

According to the results, 40% of enterotoxins were resistant to thermal treatments (60C and 100C for ten minutes).

Staphylococcus aureus food poisoning is an acute disease that appears by using contaminated foods after 1-24 hours.

S. aureus is a gram positive, non spore forming bacterium that grows in suitable condition, especially in dairy products. Several serotypes of enterotoxins of this bacterium are known that cause food poisoning.

These enterotoxins are known enterotoxins because after ingestion from intestinal mucosa they cause emetic effects via Vag neuron. This food poisoning is usually without fever and diarrhea..

In this study, 250 samples of dairy products were tested against bacterial contamination. 128 strains of different bacteria were determined. 25 strains of *Staphylococcus* were identified. 17 strains were identified as truly *Staphylococcus aureus* by standard tests like growth on 9% CINa, production of haemolysin, catalase and coagulase.

Enterotoxin production by dialyzed sac culture was assayed and tested against cat by injection for all the strains.

Only in one strain the enterotoxin production was proven and the symptoms of emetic was seen in cat after 3 hours.

P50

Evaluation of Verotoxin Production in Three Defined Media.

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Escherichia coli O157:H7 has been associated with outbreaks of diarrhea, hemorrhagic colitis and HUS. This strain belongs to the family enterohemorrhagic *E. coli* (EHEC), which produce verotoxins (VT₁, VT₂). Several methods have been employed for the production and detection of verotoxins in cases of diarrhea. These are isolation of strains from fecal specimens and detection of toxins in filtrates and cell lysates.

Media formulation could affect toxin produced by bacteria.

In this study three defined media, trypticase soya broth (TSB), cooked meat and CAYE tested for toxin production by *Escherichia coli* O157 strain.

Detection of toxin was assayed in supernatant and cell lysate cytopathic effect in verocell culture and agglutination in VTEC-PRLA kl.

The best media for verotoxin production was TSB after 24 hours.

P51

International Travel and Health: The Work of the USL Clinic for Travellers in Arezzo - Italy.

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Introduction- At the National Health Service USL 8 in Arezzo is a clinic for international travellers, that works to prevent the main diseases to which they are exposed. The clinic was authorized in 1993 by the Ministry of Health to carry out yellow fever vaccination.

Objectives- This study analyses the work done by the clinic from 1994 to the end of June 1999, and the most important diseases caught by the travellers.

Results- From 1994 to June 1999, 1985 travellers have visited the clinic, an average of 354 per year. During the same period, 260 people received yellow fever vaccination each year. Vaccination against A type hepatitis started in 1996, with an average of 60 people yearly. Anti-typhus vaccination, first oral and then by injection, has been available for travellers going to high-risk areas since 1998, with an average of 170 vaccinations per year. A combined vaccination against A and B type hepatitis has been available since August 1998, and has been carried out on 40 people. No negative reactions to the vaccines has been noted during the period studied. From 1994 the following illnesses have been caught during trips abroad: 1 case of A type hepatitis, and 25 cases of malaria. Only 5 of the latter used malaria prophylaxis and one had not completed the prophylaxis.

Conclusions- Each year a consistent number of people visited the clinic, which has become a reference point not only for people living in the province of Arezzo. but also neighbouring provinces. The vaccinations carried out there have been proved safe and tolerated by all ages, because of the almost complete absence of negative reactions. It is to be hoped that in the future, a closer collaboration with people working in the field of tourism will extend the service to the largest possible number of travellers.

P52

Tuberculosis and Immigration: Incidence in the Province of Arezzo from 1996 to 1998.

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Introduction: The recent immigration of people coming from developing countries into western countries has been one of the factors causing the recrudescence of tuberculosis observed in industrialized nations during the last few years.

Objectives: This study aims to make an epidemiological analysis of the incidence of tuberculosis among the immigrant population in the area covered by the USL 8 of Arezzo and to compare it with that of the local population.

Method: The diseases cases have been collected by cross-checking the data provided by the list of hospitalizations for tuberculosis, the notifications of cases of tuberculosis of the Public Health Service, and statistics from the Bacteriological Section of the Analysis Laboratory of the Arezzo Hospital. The incidence has been calculated taking into account the immigrants registered at the Town Hall during the years 1996-1998.

Results: It has been shown that the immigrants are more at risk from tuberculosis than the Italian population. In 1997, the cases of tuberculosis in non-EEC immigrants were 17% of the total, whereas the percentage of immigrants in relation to the whole population was 1.5%. In the same year, the incidence of the disease among the population being studied was 127.8 per 100,000 inhabitants, that is to say, 18.5 times greater than that of the Italian population. Even hypothesizing that clandestine immigrants account for 50% of the total, and so halving the incidence, this remains much higher than that of the local population. It is important to note that the cases among non EEC immigrants appeared when an average of 4 years had passed after their arrival in Italy. This fact, compared to the national figures, indicates that the risk factor for this group is highest during the first years of immigration, as this is the most difficult period, socially, healthwise and psychologically.

Conclusions: Poverty and marginalization should be considered the main risk factor for the development of tuberculosis. The precarious social and economic living conditions in which the non EEC immigrants are obliged to exist, together with the psychological strain borne by people living on the edges of society, contribute towards a lowering of the immunity defenses, and favor evolution into disease of an infection probably caught in the country of origin.

P53

Relation Between Demodex Folliculorum and Rosacea

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The obligate follicle mite *Demodex folliculorum* (D.f.) has been demonstrated in increasing numbers in patients with rosacea. The significance of this finding is still not completely understood, because many people free of skin disease may also have mites. So, the aim of this work was to study the possible role of D.f. in patients with rosacea.

Facial punch biopsy specimens were taken from patients with rosacea (either telangiectatic, papulopustular, squamous, granulomatous form or with rhinophyma) and age & sex matched healthy subjects . Results of this study showed that 60% of the rosacea patients were harboring the mite with higher incidence in patients with papulopustular form.

P54

Skin Diseases of Foreign Tourists in the Region of Rijeka, Croatia
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In this paper the morbidity from skin diseases in German, Italian, and Austrian tourists, staying in the region of Rijeka in the period from 1987 to 1995, was studied. The data was collected from their hospital files in Clinical Hospital Centre Rijeka. Among Italian tourists there were more women (55.4%) and among German or Austrian tourists more men (57.7%). The most frequent age was 52 years in the subjects from Germany, 73 years in the Italians, and 24 years in the Austrians. In some studies, the skin diseases, as the cause of morbidity in tourist population, were at the first or at the second place. However, these investigations were carried out in the tourist outpatient clinics of hotels and campings where they were treated for mild inflammatory or allergic skin manifestations. Our study included only the tourists examined and treated in hospital for severe skin diseases that could not be treated in outpatient clinics of hotels. In our study, the diseases of skin and subcutaneous tissue among the tourists in the Rijeka region were at the tenth place in the morbidity of German tourists, with 3.3%, and among Italian tourists with 3.5%. They were at the ninth place among the tourists from Austria, with 4,6%. In the period from 1987 to 1995 a significant decrease was noted in the morbidity from skin diseases in tourists 49% in the German examines, 48% in the Italian examines, and 14% in the Austrian examines. Because of threatening ozone holes in the atmosphere, it is the increasing risk for the appearance of other skin diseases such as carcinoma or melanoma. In relation to the established incidence of malignant skin diseases, mass oncological screening actions in our tourism is not yet needed.

P56

Health Care in a Philippine District Center - Experiences.

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Success of the health system in industrialized countries depends on abundant personnel and material resources. Under poor conditions that health care system fails because the preconditions are not met.

Even posted in a hospital setting the health expert from Europe finds himself asked for public health activities inside and outside the hospital.

Effective health care in developing areas needs not only curative and preventive medical activities but also health education.

The authors report experiences on half year activities in slum areas of the Philippines.

Statistical analysis provides information on groups of medical diagnosis expected and available medical drugs and consumption.

Methods and approaches for health education depending on the local situation are explained.

Conclusions for better preparation and organisation of training activities are suggested.

P57

Mobile Health Service For Migrant Farm Workers In Adana Province, Cukurova Region, Turkey.

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Adana province, located in Cukurova region on the Mediterranean coast of Turkey, has a typical Mediterranean character, is an important agricultural center. During the harvest period, the province receives nearly 100,000 migrant farm workers from eastern and southeastern Anatolia. These workers' families spend 7-8 months in the rural region settling in groups of tents along watering channels and roads and have difficulties in providing drinking water and water for general use. These persons also lack domestic facilities such as toilets, bathing facilities, kitchens and electricity. They are subject to many negative environmental factors and thus subsequent health problems. Another problem is language barrier.

As the applying rate of these people to the Primary Health Centers in the region is very low, a solution has been provided by Provincial Health Directorate, as the constitution of mobile health teams. In this context 6 mobile health teams, in addition to an ambulance and 4 malaria control teams were organized. The working times were selected as 6:00 to 10:00 P.M. taking into account that farm workers spend the daytime working on the field. The target population consisted of 29154 people (2653 children in the age group 0 to 4 years and 8221 women in the fertile age) living in 5655 tents located in 6 districts of Adana and the services provided can be grouped as immunization (for children and pregnant women), maternal and child health, family planning (being 2378 people educated), environmental health including distribution of 2256 chlorine tablets or 28 kg of chlorine solutions, malaria control, policlinic diagnostic and treatment services. The prescribed 1440 different drugs, in addition to 2416 condoms or 424 sets of oral contraceptive pills were provided for free. During the study period 18648 people from 4070 tents were visited, offering 2109 policlinic services with an addition of 329 small operational interventions such as wound care and similar.

It can be suggested that in order to provide an efficient health service for migrant populations like migrant farm workers, as these people lack of demand for health services, due to both insufficient educational status and language barrier, the best way is providing mobile health teams working in adequate duty times according the working schedules of these people and presenting the service in the location, like tents, where they are settled. Taking into account the socio-economical status of migrants the service should be free as much as possible.

P58

An Original Surgical Method to Extirpate a Foreign Body-Angle.
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An original surgical method to extirpate a foreign body-angle is presented. This method can be applied in an ambulant traumatological practice.

The method of extirpation is very simple. It consists of introducing a tiny injection needle through stingy wound directly along the body of angle. With needle the top of angle, which is fixed in tissue, is liberating, after which the angle is pulling back through the wound in the same direction.

During the period 1987-1998, this method was applied in 35 cases. In all cases the angle was successfully extirpated by this method. The conclusion is that this of extirpation is very simple and successful. This method does not cause the additional damage of the soft tissue, reduces the possibility of additional contamination of the wound and eliminates the use of regional anesthesia. Because of these reasons the author recommends this method as the method of choice in treatment of extirpation of angle in ambulant traumatological practice.

The purpose of the review was to evaluate the risk of bathing in the sea and swimming pools in more and less overpopulated (due to the influx of tourists) seasons in two epidemiological areas (Labin and Opatija) in Croatia. The method chosen was interviewing tourists in two differently overpopulated summer tourist seasons (1989 was highly overpopulated, while in 1995 the tourist population was 3-4 times lower). The factors studied have been observed in the groups of tourists who did and did not have diarrheal disturbances and the hypothesis to verify was whether bathing in the recreational waters more significantly appear as a risk factor in overpopulated seasons (as expected) and whether the risk of bathing in swimming pools appears as the greater risk factor than bathing in the sea (as expected).

The results show that bathing in the swimming pools significantly ($P < 0.05$) appeared as the risk factor in the more overpopulated tourist season while in the less overpopulated tourist season it did not appear as the risk factor. These results confirm the importance of the overpopulation. Bathing in the sea did not appear as the risk factor either in the more or less overpopulated tourist season. Nevertheless, when having in mind the importance of the overpopulation confirmed by evaluation of bathing in the swimming pools, the importance of the recreational waters not only swimming pools but also the sea, as risk factors for travelers diarrhea should always be kept in mind, while the absence of the risk of bathing in the sea in the areas studied proves that the effects of the overpopulation in these areas were not extremely high even in the highly overpopulated tourist season.

P60

Verotoxin Production in *E. coli* Strains Isolated From Diarrheal Samples.

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E. coli is an enteric gram negative bacterium. This bacterium mainly causes diarrhea in infants and such strains are called enteropathogenic *E. coli*. The most important pathogenic factor of this bacterium is its specific enteric toxins. Some strains known as O157:H7 (enterohemorrhagic *E. coli*) serotype produce a toxin called "verotoxin", which is divided into two distinct types verotoxin 1 and verotoxin 2. Verotoxin 1 is very similar to shigella toxin so that it is neutralized with shigatoxin anti-serum, but verotoxin 2 does not react with that anti-toxin.

In this study 30 strains out of 100 bacterial diarrhea samples of infants were detected as caused by enteropathogenic *E. coli*. Hemolysin was produced in just one strain. Verotoxin was detected using VTEC-RPLA kit by oxoid for all strains and V1, V2 toxin production was not observed in any of the strains.

P61

Foreign Immigrants to Naples: Research/intervention, Health Promotion and Training

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Foreign immigration to Naples can no longer be considered either recent or transitory. In the past few years a substantial difference has been reported between urban immigration and suburban/rural immigration. There are 20,000 immigrants living in Naples, 14,000 of whom are legal. The ethnic communities present in the city are mostly from Sri Lanka, the Philippines, Somalia and Santo Domingo, to which we can add the more recent influx from eastern Europe: Albania, ex Yugoslavia (especially Rom), Ukraine, Poland. Instead, in the provincial area of Naples there is the less compact community of immigrants from northern Africa and the coastal area of western Africa.

In addition, in the Naples urban area there are two permanent settlements, in the districts of Secondigliano and Ponticelli, where numerous families occupy dilapidated 2-storey buildings, built as temporary accommodation after the 1980 earthquake.

The authors of this paper, who are employed in public health institutions, in the University and in voluntary non-profit associations, are carrying out a research/intervention and training project in favour of the immigrant populations, the aim of which is to facilitate access to health care, to actively involve general practitioners, to favour an integrated intervention between the volunteer organisations and the public authorities.

From a health care perspective, the data we have clearly show that the immigrants to Naples (excepting the Rom communities) are mostly young, often university graduates or with a high school diploma, are healthy when they arrive in our country and fall ill because of the precarious conditions in which they live and work. Integrating the action of the volunteer organisations has enabled us to increment our knowledge on the sociological side, thanks to the "Dedalus" Research Centre and on the training side with the "Ionique" project, a training programme on female immigration promoted by the Community of Capodarco in the province of Naples. Research/intervention, operational co-ordination, training, health promotion, facilitating access to health services, creating diagnostic-therapeutic programmes are the aims of the study under way in Naples and on which all future action of the group should focus.

P62

The Advantages of Urgent Hip Hemiarthroplasty in the Elderly.
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With the end of the second millennium approaching we are faced with an increase in global traveling and a greater risk of personal accidents.

For the age group over 65, hip fracture has to be treated in the hospital by implantation that creates many problems. Many patients would prefer hospitalization in their home towns. This means numerous complications, such as organization of the transport by car and plane, bed position, associated medical problems and other logistic problems.

The authors analyze the problems for the patients, his family and the doctor in the situation of preferred transport to other hospital emphasizing the advantages of the urgent surgical interventions - hip hemiarthroplasty.

Migration patterns have increased significantly in the last two decades and are projected to increase in the 3rd millennium. We consider immigrants and tourists part of the same migratory phenomenon who have health needs (not only illness-related but also preventive) which have an impact on the health status of the individuals in each group that cannot be ignored during their stay in the country receiving them. They also can have an effect on the health status and well-being of the residents of the country receiving immigrants and tourists. The planning and delivery of health services to these migrant subpopulations is essential given the magnitude of such influxes, the varying types of health needs, and the bi-directionality of the influence.

In this article we present:

- a typology of immigrants and tourists. There are four major types of migration:
 - 1) resident immigrants (those who come with intention to remain in the new country)
 - 2) transient immigrants (those who come for a period of time and then return to the country of origin or who emigrate to another country)
 - 3) routine tourists (those who arrive for pleasure and travel which have seasonal fluctuations)
 - 4) special event tourists (e.g. Jubilee, Olympic games where there is a peak flow for a designated time period)
- identification of the types of information needed to monitor the fluctuations
- identification of the differing health needs of the subgroups
- identification of the differing health services necessary for meeting the needs of these influxes
- identification of pertinent health and social indicators useful for planning health services for these groups (e.g. quantity and motive for seeking emergency/hospital care; use of other medical care; number lodging in inadequate housing; quantity, type and location of hygiene services required for incoming tourists and fluctuations based on time, duration and peaks of tourism). The indicators utilized are selected from extant sources WHO, CDC, NCHS, National Vital Statistics System and population surveys. Pertinent new measures are proposed when needed. The use of the indicators are evaluated in terms of their appropriateness, adequacy and effectiveness in measuring health needs, assisting in planning health services, and monitoring health improvements in these populations.
- the availability, accessibility and quality of extant data sources
- the advantages of monitoring improvements or lack of improvements in the health of immigrants, tourists and the resident population.

In the city and province of Treviso, Italy (Venice Region) we have a large immigrant population, whose numbers are steadily increasing, and we also enjoy an expanding tourist influx. As part of the WHO program "Healthy Cities" we have monitored health-related events both in the resident and incoming populations. Therefore, we will use our city and province as an example of how the model described above can be used at the local level.

P64

The Occurrence of Health Problems in the Different Groups of Czech Travellers.

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This study describes the travellers that visited our clinic from January to November of 1999. The group is divided according to regions visited (Africa, India, South America and others), duration of the journey, and way of travelling (individual, common, with travel agency).

We compared an avoidance of health problems by travellers: a) healthy and preparing for the journey and b) traveling without any preparation.

The main issue is the occurrence of infectious and tropical diseases in each group.

P65

State of Health and Social Care of Migrants in the Czech Republic
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Presentation describes the multilevel approach of official organizations towards various groups of migrants from the point of the health care view. There is different approach towards legal and illegal migrants, there are differences in official and non-governmental and private help. The study presents results of an eight years longitudinal epidemiological study in the Czech Republic. It was aimed at the health and social problems among migrants and was concerned with adaptational problems and mental disorders within different groups of migrants. The role of medical staff and collaboration with local authorities was analyzed.

P66

Health Guide for Tourists in Croatia

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Every year more than 500 million people cross the borders and more than 5 million come to Croatia as tourists. Such a large number of tourists requires a proper approach in organization of their health care. A number of efforts are underway to meet these needs and one of them is publishing of the Health Guide for Tourists in Croatia. Pertinent health information prevents the traveler from unnecessary illness and prepares him to deal with health problems that may be encountered during and after travel. Travelers must have access to up-to-date information to access health risks and take precautionary measures. The traveler also needs to know how and where he can get proper medical help in case of need.

Health Guide for Tourists in Croatia is published in English, German and Italian language and will be distributed to tourists on the Information stands and airports free of charge. It consists of two parts, first with general information, legislation regarding medical service for foreigners, and with health risks and advice for Croatia. In the second part is a list of recommended medical offices with their phone numbers and addresses. The section about dangerous animals and plants, displaying color pictures with their description, identification, and first aid, is also included. For the large number of tourists engaged in seawater sports in our coastal waters, a section about diving accidents and system of medical help on the sea for nautical tourists is also part of this health guide.

P67

Lack of Knowledge of Altitude Illness Amongst Trekkers, General Practitioners and Practice Nurses – Improvements Are Needed in Primary Prevention Strategies

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Trekking and climbing in high altitude areas of the world is becoming more popular and accessible for travellers of all age groups. Altitude illness (AI) has been reported to affect a considerable number of these travellers. This may be due to a lack of knowledge of AI or poor primary prevention strategies. We assessed levels of knowledge on this subject in trekkers and general practitioners / practice nurses, and observed the primary prevention efforts of these professionals.

Methods:

Questionnaire-based interview of trekkers flying to Kathmandu, Nepal, and practice nurses / general practitioners from Sheffield. Knowledge of symptoms, risks and treatment were assessed. Results were compared against a basic safety standard.

Results:

21 trekkers and 21 primary health care professionals (PHCPs) were randomly included into the study.

Mean level of knowledge: Trekkers mean score was 64% (range: 0-93%), PHCPs achieved a level of 74% (range: 14-100%). (Basic safety standard = 100%).

Symptoms: 48% of trekkers and PHCPs respectively were unable to list four symptoms. 24% of trekkers and 57% of PHCPs did not identify headache as a symptom.

Risk factors: 10% of trekkers and 14% of PHCP's did not recognise that rapid climbing of the mountain would increase the risk of AI.

Management of acute mountain sickness: 33% of trekkers and 43% of PHCPs gave an incorrect response.

Symptoms and management of severe AI: 43% of trekkers did not recognise any symptoms, 33% did not recognise descent as appropriate action to be taken. 14% of PHCPs could not list any symptoms and 48% did not state that descent would be the appropriate treatment.

Prevention strategies: PHCP's did not act as a significant source of information on altitude illness for any of the trekkers in the sample. Only 19% of PHCPs stated they warned their travellers of the risks. Access to training/information on the subject was limited for these professionals.

Conclusion:

Basic safety information was missing in both trekkers and PHCPs. None of the trekkers achieved the basic safety standard. Reading guide-book information only was not enough. A need for national guidelines is suggested.

Current primary prevention strategies are poor; few trekkers are warned about AI on their pre-travel visit to their practice. PHCPs could be well positioned to make improvements to trekkers' knowledge, however, they themselves are in need of training and information on all aspects of AI including management.

Dengue fever is classified by degree of severity: classical dengue fever, dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS). The cycle of Dengue viruses types 1-4 (family Flaviviridae), involves humans and mosquito vectors (*Aedes aegypti* and *A. albopictus*). DF is endemic and epidemic in tropical Africa, America, Southeast Asia and Oceania.

Since about 10 years, *A. albopictus* has been introduced also in Europe: in Italy and Albania. These introductions were made primarily through imported tyres containing eggs and/or larvae of *A. albopictus*. The spread of this vector may be a potential threat for the emergence of DF in Europe.

The present report shows that DF constitutes a risk for tourists who have travelled to tropical countries. Each year several cases are diagnosed in Italian tourists and workers travelling from endemic areas. From 1993 the number of cases is increasing, as a consequence of both an improvement of medical information and the diffusion of tourism in tropical areas among Italian travellers. Because of the lack of an efficient and safe vaccine, the prevention can be only performed by avoiding mosquito bites. Thus an important role could be played by medical staff and tourists operators giving a correct information about risk and personal care measures.

P69

AIDS in the Eyes of Future Health and Touristic Workers.
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Croatia is a tourist country because of its natural resources. Rijeka is a large center of tourism and a harbor city. Because of the increased population of migrants there exists a great chance for the expansion of AIDS (the first AIDS cases were registered in Croatia in Rijeka in 1985). Presently, Croatia has a relatively small number of registered AIDS patients. In this study we are exploring the epidemiology of AIDS with special respect to Croatia and Rijeka areas. The legal treatment of patients and carriers of AIDS in Croatia, as well as informing students at the University of Rijeka about AIDS. By administering a questionnaire to 150 students (future physicians and tourism employees) we discovered that a large number of students are relatively well informed about the problem of AIDS and the prevention is the only way to deal with it.

P70

Effectiveness of Counselling for International Travellers: Our Results.

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The Centre for prevention of Tropical and traveller's diseases, born at the Institute of Infectious Diseases of the University of Ancona in September 1991, has performed until September 1999 n° 1200 advices. A questionnaire was sent off to domicile within a month from return; if there was no response, a second questionnaire was sent off.

We obtained 708 (59%) answers: 346 (49%) and 362 (51%) out of 708 travellers were males and females respectively; median age was 33 years (range 2-75). Tourism was the main motive of travel; average length of travel was 15 days. The destination was the African Continent in 43%, Asia in 30% and Centre-South America in 27%.

With regard to the risk of malaria (WHO), 53% of the travellers went to an area C, 32% to an area A and 15% to an area B.

Thirty-two percent of travellers who went to an area A, 48% of those who went to an area B and 63% of travellers who went to an area C have been taken prophylaxis.

Fifteen percent of travellers reported adverse events; the gastroenteric and neuropsychiatric were the most frequently referred, especially related to mefloquine (the most used).

Thirty-four percent of travellers who went to Africa , 39% of those who went to Centre-South America and 27% of travellers who went to Asia reported diarrhoea. Overall this adverse event was reported in 115 (16.2%) travellers, but only in 5% of the cases it was a severe one and required systemic antibiotic (fluoroquinolones).

As far as vaccinations are concerned, travellers revealed poor compliance with anti-tetanus and anti-diphtheric vaccinations and, on the other end, an over compliance with anti-typhoid vaccination.

In conclusion, considering the low prevalence of diarrhoea in travellers and the absence of relevant health problems abroad, our counselling resulted useful.

P71

Quinin Gluconate Stability Study In Experimental Tropical Conditions.

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Introduction: Injectable Quinin Gluconate is the reference therapy for malarial attack. Once diluted in dextrose 5% or sodium chloride 0.9%, the solution should not be exposed to an exceeding temperature of 30°C (laboratory's data). Nevertheless, these conditions are reached in most tropical countries.

Aim: A physician from French Guyana apealed us to achieve an experimental study of stability of an injectable quinin (gluconate salt)in tropical conditions (35°C, humidity 100%) during 12 successive hours.

Method: Three different diluents (dextrose 5%, dextrose 10% and sodium chloride 0.9%) have been studied according to the concentration rate used in Guyana : 500 mg of Quinimax- per 500 ml PVC bag. Five solutions were made with each diluent. After validating a spectral dosage method we used it to determinate quinin gluconate concentration at t=0, t=4h, t=8h and t=12h to get into the extreme conditions found in the field.

Results: Spectral dosage has been validated with quinin gluconate powder (variation rate of repeatabily and reproductibility < 5%). Similar results were observed with Quinimax-samples. Linearity test showed a linear relation between absorbance and quinin gluconate concentration ($p < 0.05$). Comparison between means with variance analysis indicated no significant difference between mean quinin gluconate concentration at t=0, t=4h, t=8h and t=12h ($p < 0.05$). We obtained the same stability with the 3 diluents tested: dextrose 5 %, dextrose 10 %, sodium chloride 0.9%.

Conclusion: In our study, quinin gluconate remains stable with each diluent tested. These low concentrations could allow concomitant patient rehydratation. These experimental conditions should be completed by workfield studies.

P72

Plasmapheresis In The Treatment of Cerebral Form of Tropical Malaria

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Therapeutic plasmapheresis (TP) is the medical procedure seldom applied in the treatment of parasitic diseases. Replacement of total volume 2400 – 4850ml of patient's plasma with albumin or frozen plasma is performed in few cycles. Filter separation (capillare-membrane, vinyl-ethylene) is usually applied. The most important effect of TP is elimination of toxic factors and immunological complexes. Moreover, it also has an immunomodulatory action. TP is performed in our Department of Infectious Diseases for twenty years in different infectious diseases, including parasitic: trichinellosis, cerebral cysticercosis, amoebosis, echinococcosis and malaria. Cumulatively it was performed for 29 times in the treatment of parasitic diseases.

TP can be used in the treatment of severe courses of parasitic diseases associated with the high risk for patient life, such as cerebral form of tropical malaria. An example is application of TP in 6-th day of cerebral form of tropical malaria. TP related to exchange of 1600 ml of plasma was performed three times, simultaneously with antiparasitic treatment. In the first day of the treatment, normalization of temperature and decline of cerebral symptoms were observed. There was no parasitemia in the 3-rd day of the treatment.

This observation suggests that TP and simultaneous antiparasitic treatment can fasten clinical improvement and shorten convalescence period. This profitable effect indicates possible use of TP in the treatment of malaria.

P73

When Anopheles Travel, or How to Contract Malaria Without Leaving the Greater Paris Area.

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In 1999 four autochthonous cases of malaria were diagnosed in France near the international airport, Paris - Charles de Gaulle. Three years had passed since any cases of this type had been observed in France.

The clinical histories and epidemiological circumstances leading to these 4 cases (3 uncomplicated and 1 severe) are as follows:

- The date marking the contamination of the index case and the Plasmodium strain's geographic origin.
- The study of one patient's blood, a blood donor, by means of PCR to show its potential for infection and the simultaneous use of microscopic and immunological techniques which produced a negative result.
- The misdiagnosis of one patient, for almost one month, due to misleading symptoms.
- And finally, the two separate malaria episodes suffered by one patient each demonstrating separate Plasmodium species.

The authors contend that a lack of respect on the part of certain airlines for international sanitary regulations pertaining to aircraft disinfection, lax border sanitary controls and unseasonably warm weather locally are unquestionably responsible for the 4 observed cases of contamination.

Thus in order to ensure timely and proper diagnosis and care, official authorities must address, at the beginning of very summer, a reinforcement of those inspections that ensure proper implementation of adapted anti-vectorial measures, and incentives to increase proper vigilance, to the totality of physicians and biologists likely to be confronted with those atypical and thus potentially serious cases.

P74

Patterns of Preventive Behaviour in Travellers from Non-malarious areas who visited Zimbabwe during a Peak Malaria Transmission Period.

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In Zimbabwe, malaria is reported to be on the increase with the national outpatient rate for all ages estimated in 1998 to be around 160/1000 in a population of 12.5 million people. The pattern of transmission is typical of a sub-tropical climate with a peak at the end of the wet season around the end of March and a decline during the cold winter months. The zone of year-round transmission comprises the Zambezi valley and much of the lowveld area in the south-east of Zimbabwe. Both of these areas are popular tourist destinations. The annual growth rate of visitor arrivals mainly from non-malarious areas is estimated to be around 10% per annum and with this has come a growing concern about malaria prophylaxis in this group.

In this paper we present the results of a study carried out among visitors from non-malarious countries to Zimbabwe during a peak period of malaria transmission (February 2000). The presentation builds on a study conducted during a period of low malaria transmission (June 1999) when we piloted a research protocol to examine the use of chemoprophylaxis and personal protection measures (PPM), attitudes and outcome beliefs about transmission in a sample of over 500 passengers departing from Harare and Victoria Falls International Airports. While the most popular form of chemoprophylaxis in travellers from Europe and the Americas was found to be mefloquin, doxycycline is the most frequently prescribed prophylaxis for travellers from the Australia, with a majority of travellers citing the Medical Practitioner as the main source of information. Compliance with chemoprophylaxis was high (72.%) compared to compliance with PPM (14.5%). Compliance with chemoprophylaxis was significantly ($p < 0.05$) higher in women than men. Travellers who were compliant with chemoprophylaxis also tended to be more compliant with PPM. In persons visiting for business purposes and in those who recorded a previous history of malaria infection compliance was found to be low. It was concluded that the study should be repeated in the peak season of transmission, the results of which will be presented at this meeting.

P75

UV Radiation Induced Skin Disorders

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The sunlight which reaches the Earth's surface is composed of the ultraviolet, the visible and part of the infra red spectrum of electromagnetic waves. The most important for changes in the skin are ultraviolet rays, and the special branch of medicine dealing with these relationships is called photomedicine.

In this presentation we deal with photodermatoses - diseases, where sunlight is the only or a very important etiopathogenetic factor. They are divided according to the time interval between sun exposure and the onset of a skin disorder in the acute form, the chronic form, or those disorders where changes partly develop soon after the exposure and partly later, over the years. As regards the scope of this meeting mostly acute reactions to sunlight are discussed (sunburn, photosensitivity reactions /photoallergic and phototoxic/, polymorphic light eruption and hydroa vacciniforme. At the end, the basic diagnostic procedures are mentioned, with warnings about adequate sun protection measures.

P76

Resistant *Mycobacterium tuberculosis* in a Low Prevalence Country.
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Ulleval University Hospital and National Health Screening Service are responsible for monitoring infectious diseases such as tuberculosis (TB)

The number of TB cases in Norway has declined from more than 10,000 cases per year after World War II to 255 (6.0 per 100,000 inhabitants) in 1989. The number increased in 1990-92 to 6.8 per 100,000, then gradually decreasing to 5.5 in 1998, among the lowest in Europe. TB in immigrants accounted for 53% of our cases in 1998. Among immigrants TB is mainly found among young persons, median age 30 years, while in Norwegian-born patients the median age is 70 years. In low incidence countries, there is a growing risk for TB to be underdiagnosed. TB should be screened for in selected groups, e.g. adopted children and immigrants from countries with high incidence of TB. Because of cultural differences, these groups need special attention if treatment is to be successful. In order to follow the situation, a well-functioning notification system has a very high priority. Resistant *M. tuberculosis* is rare in Norwegian-born patients, but in immigrants 10-25% are resistant to isoniazid depending on the continent of origin.

Objectives: To prevent importation of diseases by increasing the level of immunisation of travellers to risk areas.

Project and methods: Travel medicine is one of the tasks of a local health service. The risk of importation of infectious diseases has increased because more people travel to risk areas. To increase the level of immunisation it is necessary to attract more people. To reach more travellers a more business-like and professional approach is needed.

To reach more travellers it was found important to make the travel clinic more widely known among three groups: holiday-travellers, travel agents and among people visiting family abroad (especially ethnic communities)

Before approaching the different target groups the relevant product-characteristics of our travel clinic were formulated:

- a. knowledgeable and motivated staff
- b. knowledge of the national immunisation programme
- c. protocols on cold chain procedures, shock etc.
- d. a special project for pilgrims to Mecca

Based on these characteristics a preposition was formulated: Care for your health. This led to choosing several target groups with different communication means. Ethnic communities are one of the prioritised groups.

Results: Since spring 1999 as part of this strategy the following activities were carried out:

- in March and April 1999 145 travel agents were visited with information materials;
- during the summer more than 10.000 people were reached with freecards and information flyers at three large multi-cultural festivals in Rotterdam;
- in June 1999 all general practitioners received a special issue of the Infectious Diseases Newsletter focused on travel medicine and a poster with countries for which immunisation is advised;
- in July 1999 all 33 maternity centres received the same poster;
- in July research was carried out to establish the client satisfaction with our travel clinic (N=300). The mean score was 8.5;
- during the first 9 months of 1999 there was a 12% increase of visitors to our travel clinic compared to 1998.

Conclusion: To prevent the risk of importation of diseases extra efforts are needed to raise the level of immunisation among travellers. Our activities have made clear that with a well organised campaign and with communications means targeted to specific groups it is possible to gain a large increase in visitors to a travel clinic.

P78

Prevalence of Hepatitis C Virus Infection after Accidental Exposure in Hospital Workers.

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Health-care workers are known to be at risk of occupational transmission of blood borne viruses, i.e. HBV, HCV, HIV.

Among them, HCV infection is of particular concern due to the lack of a vaccine and of an effective postexposure therapy.

In spite of the reduced frequency of needle stick injuries reported in the last few years, HCV exposure remains a definite problem.

In our middle dimension hospital we conducted a survey of biological accidents that occurred in health care personnel, with a special focus on the accidents (context of exposure and adherence to Universal Precautions). During the first 9 months of this study 51 biological accidents were recorded; they represent 57.6% of the total accidents reported.

HCV exposure occurred in 7 cases (13.7%): 4 were needle stick injuries; 2 were blood contact with injured skin or mucosa, in only one case the blood contact occurred with healthy skin (an event usually believed to be ineffective in the transmission of the virus).

In none of the reported cases was sero-conversion observed during the follow-up (mean 6 months of follow-up).

Our data, albeit preliminary and with a limited follow-up, suggest that in our hospital HCV exposure does not represent a primary biological risk for health-care workers.

Navigation is one of the main industries in Ukraine, and the number of seamen who work on different vessels is growing annually. Success of the maritime industry depends on the safety and standards of health care followed by this occupational group. According to statistical data circulatory diseases are most commonly reported. In this stand point it was interesting to observe of cerebral blood circulation and determine adaptive mechanisms to different special tests.

Methods. The blood circulation was examined by ultrasound dopplerography in 68 seamen, age range 30-55 years. The maximal systolic, middle and diastolic flow blood velocity were found, as well as resistance, systole-diastolic and pulsation indexes. To evaluate cerebral gemo dynamic and vessel's adaptive ability we used functional load of two tips: 1)chemical - hyper and hypocapnical tests; 2) physical - orthostatic and antiorthostatic, test of compression of carotid arteries. Then indexes of reactivity, of auto regulation were calculated. Complete medical examination included routine laboratory tests, arterial pressure, neurological examination..

Results. 76% of seamen have had good results of flow blood velocity. It has corresponded to the age's normal indexes. In seamen who were over 45-50 years old the indexes were clearly lower. But even in person who had normal indexes after tests 48% have had abnormal indexes of reactivity and auto-regulation.

Condition of blood circulation depends on blood biochemical state, vegetative nervous system, professional activity and etc.

After the voyage the number of persons with disturbance of cerebral reactivity increased twice. To increase vessel's ability we used Vin-vita for young people and espa-lipon for eldest seamen.

Conclusion. Professional particularities of seamen influence the adaptive mechanisms and cerebral auto-regulation. Additional methods of seamen's professional examination were recommended. Methods of prophylactic circulatory disturbances were suggested.

P80

Construction and sequence determination of *Mycobacteria recombinant* shuttleplasmid of MSA2 gene fragment of *Plasmodium falciparum*

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Aim: Construction and sequence determination of *Mycobacteria recombinant* shuttle plasmid of MSA2 gene fragment of *Plasmodium falciparum*.

Methods: The MSA2 gene fragment was amplified by PCR. After purification, the gene fragment was ligated with *Mycobacteria* shuttle plasmid pBCG5.6 at polylinker. The recombinant plasmid pBCG5.6/MSA2 was transformed into E.coli DH5a. Positive clones were screened and identified by PCR technique and digestion with restriction enzyme. The sequence of inserted MSA2 gene fragment was also determined.

Results: The *Mycobacteria recombinant* shuttle plasmid of MSA2 gene fragment of *Plasmodium falciparum* was successfully constructed. That would make it convenient for MSA2 diagnostic antigen expression.

P81

The Imported Malaria at the Rennes Teaching Hospital (France): Evaluation of Diagnosis During the Last 35 Years (1965-1999)

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Between 1965 and 1999, 448 cases of imported malaria have been diagnosed by blood smear in the parasitology laboratory of the Rennes teaching hospital. From these 448 cases; 354 were reported in the last 15 years. During the last 35 years, 71% (318) of the cases implicated *Plasmodium falciparum* (79% from 1965 to 1974, 47% from 1975 to 1984 and 75% from 1985 to 1994 and 76% during 1995 - 1999 period).

During the same period, *P. vivax*, *P. ovale*, and *P. malariae* were implicated respectively in 12%(54), 11.4%(51) and 2%(9) of all the cases. In twelve cases, we, the association reported for two specie, while in 4 other cases the species could not be identified. 93% of cases (395/430) have been diagnosed in August, September, or October. 75.5% (315/417) and 23.3% (97/417) affected European and African people respectively. The age of the patients was known for 406 cases. Fifty six cases concerned children (<15 years). The sex was known for 442 patients and the male represented 291 cases (65.8%). The diagnosis was performed for *P. falciparum* with a delay of less than 60 days for 95.4% of the cases after the winding from the endemic area. The longest delay observed was 14 months. The majority of *P. vivax* and *P. ovale* cases have been diagnosed with a lower delay of 18 months. The longest delay observed was 3 years.

Among the malaria cases due to *P. falciparum*, an acute uncomplicated infection was reported in 90.6 and cerebral malaria in 4.2% (12/288). Since 1995, 47% (66/141) of all patients did not use any malaria chemoprophylaxis and 37.7% (39/141) did not follow prophylactic protocol. Between 1995 and 1999, an important and constantly progressive increase in the diseases was observed, with a greater incidence in 1999 than in 1990.

The increase of malaria cases during the last 5 years, has incited us to be more careful in the advice given to travelers and to increase the prophylactic measures.

P82

A screening of main infectious diseases in the immigrant population and in Italian homeless (Vicenza health district, Italy, 1989 - 1999)

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Background: The estimated percentage of immigrants in Italy and Veneto Region is around 2% of total population. The number of registered foreigners at 30 September 1998 was 100.634. In the Vicenza district this percentage is higher (i.e. 4,3 of total population). Ninety percent of them come from different continents than Europe. In the Vicenza town district estimated foreigners are 17.000. Former Yugoslavia republic, Marocco, Ghana, Albania, India, Pakistan and Bangladesh are the main countries from where immigrants are from.

Methods: A screening of main infectious diseases have been provided for all immigrant individuals referring to Croce Rossa Italiana and Infectious Diseases Department of the Vicenza Hospital. All data have been analysed according to gender, country, age, year of arrival in Italy, and main sociodemographic characteristics.

Results: A total of 2,291 individuals have been screened: 596 were from North Africa; 765 from sub-saharian Africa; 417 from North and East Europe; 285 from Far East and Asia; 105 form Latin America; 123 were Italian homeless.

- HIV infection: a total of 86 individual have been recognised as HIV positive (3.8%).
- HBV hepatitis: 148 (6.5%) subjects were HBSAg positive;
- HCV hepatitis: 53 (2.3%) people had a positive test for HCV;
- VDRL/TPHA: 126 (5.5%) demonstrated a positive result for a syphilis screening;
- Tuberculosis: In a period time of three years (1995-1998) a total of 34 patients have been found affected from tuberculosis (22%)
- Imported malaria: in the period considered a total of 118 cases of imported malaria has been documented;
- HEV: a different number of individuals has been screened for HEV (327). Hundred 39 patients (42%) ad a positive test.

Conclusion: An higher percentage of chronic infections, of healthy carriers and of sexual transmitted disease are present in the immigrated population.

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