

MOBILITY & HEALTH: FROM HOMINID MIGRATION TO MASS TOURISM

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FOREWORD

The world that the third millennium will inherit from us will be one in movement. Every year, more than half a billion people cross international frontiers. This enormous mobility of persons brings with it an increase in health risks for travellers and host populations alike, together with greater risks for the environment and for the cultural identity of the world's peoples.

Mass tourism must certainly have some kind of anthropological explanation, perhaps in the innate nomadic nature of mankind, perhaps the restless spirit that makes it hard to stay in one place too long, or even the thirst for new and greater knowledge. The earliest hominids evolved through migrations, and along the way their descendants have discovered new continents, forged new trading links and travelled to the farthest corners of the globe. In all these cases migrations have had a strong potential to affect the health of both individuals and populations.

The principal scope of this multidisciplinary conference is to study the relations between the mobility of persons and the health of travellers and host countries, from the migrations at the dawn of humanity through to present-day migrations and mass tourism.

The conference aims to provide European doctors with information that will help them practise their professions with greater proficiency at the threshold of the third millennium.

Given the enormous increase in international travel, doctors today find themselves being increasingly asked to advise their patients on vaccinations and chemoprophylaxis and having to diagnose exotic diseases. The doctor or the nurse is the person to whom the traveller refers for information on preventive measures and to learn what personal behaviour should be adopted in order to avoid diseases transmitted by arthropods, food or sexual contacts, and what health documentation or medicines to carry.

The hundreds of millions of people who travel between countries and continents every year are profoundly modifying the epidemiology of diseases. Disease knows no frontiers, and doctors of the third millennium will therefore have to be capable of preventing, diagnosing and treating every pathological condition that exists on our planet.

The conference will address the main themes involved in safeguarding the health of international travellers, namely the prevention and control of infectious diseases, the prevention of accidents, the health aspects of immigration from developing countries, medical assistance abroad, food safety and maritime and air transport health.

The conference will be interdisciplinary, and speakers will include specialists in medical, social and other relevant sciences.

The conference will see the presence of experts from the World Health Organization, the World Tourism Organization, the Council of Europe, the European Union, UNESCO, the World Meteorological Organization, the International Organization for Migration, Centers for Disease Control from Atlanta and major European universities.

The choice of Venice as a venue for this event is determined not only by the glorious past of the Venetian Republic and by the charisma of the most illustrious figures in its long history, such as Marco Polo, but also by the fact that, in the fourteenth century, Venice was the first city-state to introduce quarantine for travellers. Our present-day International Health Regulations are still based on the rules that governed these early preventive measures.

I hope you will enjoy the city of Venice, with its magnificent heritage of art, architecture and culture, and I hope that the content of the conference could be useful in your professional activity.

Walter Pasini
Conference Chairman

1

Human Health and Disease in an Evolutionary Perspective DON JOHANSON, *Arizona State University, Tempe, Arizona, USA.*

Paleoanthropology, the study of human origins, provides us with a pretty good overview and understanding of the evolutionary history of the Hominidae over the last four million years. Some fifteen species of hominids are currently recognized with broad consensus on their dates of appearance and extinction. The adaptations, lifestyles, migratory movements of these species, including our own, *Homo sapiens*, are fairly well documented, providing us the broad brush strokes of the portrait of human evolution. One of the most profound conclusions reached by paleoanthropologists is that Africa is indeed the original homeland for the Hominidae. Africa is seen to be the location of the earliest hominids, the Australopithecines, the first tool-makers, and even members of our own species (some 100,000-200,000 years ago).

Knowledge of the health and disease of the Homindae during the vast majority of their existence remains virtually unknown. In the presentation I hope to explore, as best we can, our knowledge of health and disease in our ancestors. In a very general sense, hominid prehistory (and history) can be divided into three phases: Phase I-the Hunting/Gathering Phase; Phase II-the Agricultural phase; Phase III- the Modern Phase.

We know most about the Modern Phase and quite a bit about the Agricultural Phase, but the Hunting/Gathering Phase which constitutes virtually the entire 4,000,000 year time span is practically mute about the health and disease of our remote ancestors. Some insight into Phase I can be gleaned from the paleoenvironment in which our ancestors lived, the sorts of food they consumed, and their presumed social organization. Additional insight can be derived indirectly from study of the health and disease situation in other animals, especially the primates (e.g. we share unique forms of malaria with extant African apes, but not with Asian apes). Paleontological evidence is limited to remains of teeth, jaws and bone. Unfortunately diseases which affect soft tissue leave no signature in the paleontological record. Evidence is therefore limited to trauma, dental abscesses and caries, and other disease directly affecting bone (for example there is an intriguing occurrence of Hypervitaminosis A in a 1.6 million year old *Homo* skeleton from Africa). Careful study of living hunter/gatherers can provide some information on the health of early hominids, also.

Migrations brought early hominids, just as the contemporary humans, into unfamiliar regions where they may have come into contact with diseases previously unknown to them. However, when *Homo erectus*, probably the first hominid to become a world traveler, left Africa more than a billion years ago they migrated into tropical environments not unlike those from which they came. The relatively late introduction, perhaps some 50,000 years ago of modern *Homo sapiens* into Europe may have had health consequences for the Neanderthals who had lived there for hundreds of thousands of years. It is likely that Neanderthals had passed through the "cold filter" of a continent under the strong influence of glaciations and like the filter through which Native American passed when they migrated into North American from Siberia, Neanderthals may have lost certain genes like the absence of the sickle cell gene in Native Americans.

Throughout the entire Hunting/Gathering Phase, the majority of human existence, our ancestors were unable to make major changes in the environment and probably showed no advances over the health of other creatures. In this Phase, life was probably short with high death rates imposed on them by certain food deficiencies and the consequent susceptibility to infection. Hunter/gatherers were generally free from non-communicable diseases such as those which characterize modern humans, and except for bone diseases such as arthritis and trauma, they were generally healthy.

During Phase II, the advent of agriculture, populations increased and the increased density of people under often unhygienic conditions fostered the spread of infectious disease. This situation was made worse with the advent of cities some 3,000 years ago which contributed to sporadic epidemics, exacerbated by occasional famine occurring when population increase outstripped food supplies.

During Phase III, better hygiene and enhanced nutrition has led to rapid increase in population numbers while infectious disease were brought under better control. On the other hand, non-communicable disease

such as cancer and cardiovascular problems often led to pre-mature deaths. It is highly likely that these new disease arose because of profound and numerous changes in hominid lifestyles, diet, and environmental conditions in which modern humans live. We must not forget that we still harbor stone age genes which do not prepare us for the challenges of the modern world. The tremendous imbalance between glacially slow genetic change and incredibly rapid cultural change may be responsible for many mental and physical diseases seen in modern human populations.

2

Anatomy of the Traveler.
G. LIGABUE, *Venice, Italy.*

Man is a migratory species. According to Bewby, the fact a child will stop crying if rocked, goes back to the time when children were carried on parents' back along prehistoric pathways. The cradle of today re-enacts the movement of the past.

This primordial genetic imprinting took place when hominids first appeared at the window of history and began to travel. *Homo erectus* is considered to be the first great migrant of humankind. Over a million years ago he wandered from the African savannah as far as eastern Asia. He is also thought to have made the first attempts at socialization and taming fire, enabling him to develop down a different evolutionary path. Fire kept him warm in cold night camps as he pushed on into frozen northern reaches or went eastwards toward the "gates of dawn". In this way, the traveler *Erectus* gradually overcame the great atavistic fears of humankind: fire, cold, dark and illness. He could boldly confront the anxieties of unknown world inhabited by ghosts, malignant spirits and fierce animals.

There is a difference between moving and traveling. Moving means wandering in a familiar space without losing sight of the cultural reference points associated with belonging to the group. Traveling, on the other hand, means exploring unknown territories beyond reassuring signs and landmarks, going towards mysteries, wild nature, dark forests, and different climes. According to some experts, these elements constantly tested the traveler's ability and the strength of his impulse. A lust for adventure and for exploring unknown areas, such as those once only marked *hic sunt leones*, goaded, him on.

The archaic myths are based on the nomad hero (Gilgamesh, Hercules, Ulysses...) and the great lecturer-travelers like Herodotus, humanity's earliest roving reporter.

You can travel for the sake of faith. This is the case with the pilgrimage or visits to sanctuaries, to oracles, anticipating the arrival of mass tourism in the so-called geography of worship.

You can also travel to study and research, following the example of archaeologists and artist-explorers from the past. The great traveler von Humboldt, who set out to meet a great challenge in the name of knowledge, insisted on the importance of first-hand contact with multicoloured variety and features of nature. In this sense rock, graffiti and painting are reassuring signals. In the restless wandering of nomads, they are nerve centers, where prehistory has gone before them.

Then there is the traveler consumer, who seeks the sensation created by romantic and exotic routes and involves trivial shopping ranging from the all in package tours (postcards, hotels, transport, etc.) or the collecting of souvenirs from the "sad tropics". What is sacrificed is the originality and spiritual dimension of native art.

Inevitably in a world of diminishing mountains and shrinking forests, there is an even greater desire to travel in search of the impossible and the unknown, which has always anguished sedentary man. The information superhighway paradoxically blunts mysteries, does away with fables and myths, thus making more monotonous, pre-packed and repetitive.

The great atavistic fears once experienced by traveler have been transformed into neurotic worries about logistic problems: fear of losing the plane connection, overspending, endemic illness in the territories to be explored. Diarrhea puts the myth of travel into perspective. The consequent cultural side-effects lead to a fetishism of souvenirs and coffee-table photos, the glossy image and videos proving you were there.

And in this way an attempt is made to recover the unique individual nature of the experience tinged by the tropics. Inevitably the traveler carries with him his own "panorama". He is a "landscape transporter" in the lands he visits or explores.

But in addition to his culture he also carries his genes, viruses and bacteria, as he moves and adapts to various environments. Naturally these elements are not always welcome. The phenomenon has been going on for thousands of years, but now the ethnic drift along the great routes of the world is in danger of completely breaking down the physiological defenses of people no longer able to cope with new frontierless bio invasions.

3

Tourism Trends and Patters: an Updaten 2020 Vision

HENRYK HANDSZUH, *Chief, Quality of Tourist Development World
Tourism Organization (WTO), Madrid, Spain*

International tourism, whether for leisure, business or other purposes, does not cease to be the fastest growing economic activity: between 1996 and 1995, while merchandise trade rose by 4% and commercial services exports by 4.9%, then international tourism receipts equivalent was 7.9%. The share of tourism receipts increases year by year in relation to merchandise and commercial services exports in all world regions. In real terms, these indicators represented in 1997 the expenditure of 118 billion USD and 613 million of international tourist arrivals.

Although a remarkable slowdown to around a 2.8% increase in both receipts and tourist arrivals was noted in 1997 - which is mainly attributed to the Asian financial crisis - the long-term trend predicts a further accelerated development of international travel, to reach 692 million trips in the year 2,000; 1,047 million in 2,010, and 1,602 million in 2,020.

These sizable figures include a great number of people who realize multiple trips. Therefore, the absolute number of trippers is actually smaller than the overall figure of trips. These should be contrasted with the future population growth. On the other hand, the almost triplication from 1995 of international travel by 2,020 will exert an enormous additional pressure on the natural resources and facilities which will be needed to sustain tourism.

The other characteristics will be a changing share of international travel, largely in favour of Asia and at the cost of Europe, and an increasing share of long-haul (inter-regional) travel at the cost of intra-regional trips. New economic, technological, political, demographic, cultural, labour and ideological factors will shape the new pattern, nature and content of international travel. Travel will become even easier and cheaper, more sophisticated, consumer-tailored, discerning and demanding. Transparency will become a standard requirement. The combination of these factors will impact health in two ways: there will be a high exposure to infectious diseases and there will be ease to carry pathogens internationally. Hence the tourism sector will be asked to take part in an early warning system. On the other hand, health, environmental and safety considerations will prevail in destination choice. This will give a new impetus to including tourist health requirements in tourism policies as well as making them part of national health policies from which the local population will also benefit.

4

Microbiological Safety of Foods - An Industry Perspective.

J.L. CORDIER, *Nestle Research Center, Quality and Safety Assurance Department, Lausanne, Switzerland.*

The consumption of microbiologically safe foods is certainly an expected fact from the side of consumers and has to be fulfilled by the industry.

Safety however, is not always simply a given attribute and important efforts have to be made to guarantee it. It must be built in the product from the moment of their conception on, during their development and then throughout production, storage, distribution and up to the consumer taking into consideration as well their preparation.

Several tools such as basic knowledge on micro-organisms and their behavior, storage and challenge tests, HACCP and risk assessment have to be used to achieve the commercialization of safe foods. The importance and use of these tools will be outlined and exemplified during the presentation.

5

Food Safety in Catering. ILARIO DI VITA, *Ligabue Group, Venice , Italy.*

Food safety is the most important concern for any food service operation. There are two main reasons to handle your food safely: it may save a life, it may save money. In the U.S. each year, it is estimated that over 1,000,000 people suffer from food-borne disease, with an associated 10,000 deaths and over 5 billion dollars in medical and social costs.

The risk of foodborne illness varies with the type of food consumed. Types of meals resulting in illness are: 1 in 5,000,000 meals of fish; 1 in 200,000 meals of beef; 1 in 20,000 poultry meals; 1 in each 250 meals of shellfish.

There are nearly 250 different types of bacteria, viruses and parasites that are known to cause foodborne illness. A few of these are very common and account for the majority of cases of illness. Some cause serious illness or death, but most cause only a mild illness ranging from slight discomfort to more serious symptoms such as diarrhea, fever, vomiting, abdominal cramps and dehydration. It is important to realize that the health of the person affected has, at least, as much to do with the outcome of an infection as the infecting agent itself. Therefore, young children, the elderly, pregnant women and persons with other diseases such as AIDS, diabetes, or cancer are often the most severely affected by foodborne illness.

There are three reasons to make food unsafe: biological hazards (bacteria that can cause food borne illness, viruses, parasites, fungi); chemical hazards (pesticides, food additives, cleaning supplies, toxic metals); physical hazards (extraneous, foreign body or body matter like dirt, broken glass, piece of metal, bits of paper, wood scraps, splinters, etc).

The Ligabue Group is a multinational that has been operating since 1919 in the catering business. The catering service is carried out all around the world, on board cruise ships, ferries, cargo ships, oil rigs, work camps and on aircraft departing the main Italian airports. At present, 3000 persons from 30 different countries, serve 30 million meals per year, in 160 places all around the world. To reduce the risk of food borne illness, we have developed a number of company procedures that we can summarize as follows:

A. Prevention is selecting suppliers: Vendor Assurance Program - there is careful selection in choosing the suppliers of raw materials, in particular regarding foodstuffs. All the suppliers are "certified" by qualified personnel through a conformity inspection in compliance with quality indicators.

B. Prevention when receiving goods: Quality Control Program. When accepted, raw materials are inspected with appropriate procedures. Lately, Ligebugue has progressively reassigned the responsibility of quality inspections to its operators. Ligebugue has taken special care in training its staff and giving them simple and precise instructions to guide them towards a self-management of inspections. In case the raw materials are not in accordance with the standards expected clear procedures are implemented. This process is held by the Q.A. through inspections, assessments and continuous updating.

C. Prevention through training: courses, HACCP, GMP - it is possible to maintain a high professional level through specific courses, updating, news, meetings and most of all thanks to the continuous information exchange between the functions. The purpose is to involve the whole personnel towards the requirements of the client and guarantee the wholesomeness of the product.

6

Ciguatera Fish Poisoning in Hawaii: Important Implications for Travelers to the Tropics.

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Ciguatera fish poisoning is the commonest cause of marine poisoning worldwide. It results from ingestion of ciguatoxin in coral reef fish and is widespread in tropical waters notably in the Caribbean Sea and Pacific Ocean. From 1991 to 1996, there were 157 incidents of ciguatera fish poisoning in Hawaii, involving 353 individuals for an average annual incidence rate of 5.9/100,000 population. Age range was 1 to 83 years. The majority of cases (56%) were in males. The 4 commonest species of fish implicated were jack, grouper, sea bass and moray eel, although over 50 species of reef fish caused one or more outbreaks. A detailed review of 132 cases that occurred from 1994 to 1996 showed that the most prominent clinical features were dysesthesia (53%), weakness (51%), paresthesia (48%), circumoral paresthesia (41%) and taste disturbances (36%). Gastrointestinal symptoms included diarrhea (29%), nausea (18%), vomiting (18%) and abdominal cramps (14%). Ciguatoxin does not affect the appearance, smell or taste of fish. It is not destroyed by freezing or cooking. Travelers to the tropics should be warned about the risk of ciguatera fish poisoning and should limit consumption of reef fish. They should avoid parts of the fish known to concentrate ciguatoxin such as the head, gut, liver, roe, or soup made from these parts. Because neurological features may persist for weeks or months, the diagnosis should be considered in returned travelers with appropriate symptoms and a history of ingestion of reef fish.

7

Travelers' Diarrhea: Socio-Economic Impact in Travelers Visiting Endemic Countries.

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Travelers' Diarrhea (TD) is a self-limited disorder affecting the international traveler who visits an endemic country. It is commonly associated with enteric symptoms which usually resolve in three days. The incidence varies depending on destination, length of stay, season, and country of residence. Etiology studies show that the most common pathogen identified in TD is enterotoxigenic *Escherichia coli* (ETEC). TD may incur economic cost to travelers and to the health care system of the host and origin countries.

A cost-of-illness study of TD caused by ETEC infection was conducted in travelers visiting Jamaica for holiday or business. A disease and intervention model was built upon the logical sequence of medical decisions in the prevention and treatment of TD. The analysis was carried out from the perspective of society. Data on the incidence, medication, health services and loss of business/tourism opportunities was obtained by means of a cross-sectional survey conducted among tourists departing from Jamaica, while the etiology of the infection was determined in a parallel hotel study. Cost data were calculated in terms of direct medical costs and indirect costs resulting from incapacitation. The incidence and socio-economic burden of TD and ETEC has been calculated for a cohort of 100,000 UK travelers to Jamaica of which 42,100 experienced TD per stay. To society TD represents a total economic cost of £5,120,000 per stay. The proportion of TD attributed to ETEC is reported as 11.8% (4,988 cases); this generates an economic cost of £604,160 per stay. Conclusion: Although TD often is perceived as benign and an ailment associated with travel to exotic places, it still represents a considerable burden to both the traveler and the health care system. Cost-effective interventions that may prevent TD and ETEC infection are awaited.

8

Epidemiology, Etiology and Impact on Travelers' Diarrhea in Tourists Visiting Jamaica.

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A cross-sectional survey of diarrheal illness was conducted between March 1996 and May 1997 of travelers leaving Jamaica. A total of 30,369 questionnaires were evaluated. The average TD attack rate over a year was 23.7% (11.7% classical TD, 8.3% moderate TD and 3.6% mild TD), with the highest among UK travelers (42.1%). Rates increased with duration of stay until day 14 and then dropped. The attack rate was higher in visitors staying in all inclusive hotels (25.9±1.7%) than in people with other meal schedules (19.5-20.2%). Visitors staying with family/friends experienced lower attack rates (12.9±2.2%) as compared to hotel guests. Attack rates were higher in visitors eating high-risk food (e.g. ice cubes, hamburgers, ice cream and sea food). A marked seasonal difference was observed: TD rates were 26.4-30.2% from May to October and no higher than 17.1% from December to February. Hotels with a low or high attack rates maintained low or high rates throughout the year. Almost half the patients with classical TD were incapacitated, with mild TD this was still the case in 10%. For classical TD, mean duration of incapacitation was 17.1 hours. A considerable proportion of people treated themselves, but 1.6% required medical attention. Quality of life was significantly affected by the severity of diarrhea. A sub-study at Jamaican hotels identified the most predominant pathogen as enterotoxigenic *Escherichia coli* (ETEC) 57.9% being LT producing. CFA IV was detected in 36.8% of ETEC strains. The data show a need for a strategy to reduce TD as visitors do not seem to restrict their diets and avoid potentially contaminated food and beverages.

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 aluminium 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 immunopotentiating reconstituted influenza virosomes (IRIV) serve as immunostimulating carriers for the hepatitis A antigens (1,2). The hepatitis A antigen is a highly purified and inactivated hepatitis A virion (RG-SB strain), produced on human diploid cells (3).

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 towards 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.

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Clinical And Immunological Studies With a New Virosome Based Hepatitis A Vaccine

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As a consequence of epidemiological changes which occurred during the last decades, the clinical relevance of hepatitis A virus infection has increased dramatically, particularly in industrialized countries, thus stimulating vaccine research.

The first vaccine developed was based on formalin inactivated hepatitis A virus and was adjuvanted by aluminium hydroxide. Meanwhile several vaccines of this kind have been licensed.

Another vaccine also containing inactivated hepatitis A virus was developed by the Swiss Serum- and Vaccine Institute. Instead of aluminium hydroxide the adjuvanting effect of this liposomal vaccine is based on certain virosomes.

The new vaccine was first investigated in adult volunteers. Several clinical studies demonstrated that the vaccine was well tolerated and highly immunogenic.

Thereafter a field trial in children was performed showing that the vaccine was highly effective protecting from clinical hepatitis A as well as from hepatitis A virus infection.

In recent studies protective quality of vaccine induced antibodies and antibody kinetics have been investigated. These immunological investigations resulted in two important findings regarding onset and duration of protection. Considering virus neutralizing serum antibodies protection starts already on day 10 after injection of the first vaccine dose, and, on the other side, persistence of antibodies after the second dose guarantees protection for at least 20 years.

Parenteral cholera vaccines administered for many years induced up to 50% protection levels for only 3 to 6 months. Therefore, the modern approach to the development of new cholera vaccines has focused on the oral route of immunization to elicit protective immunity against this enteric disease. The “ideal” cholera vaccine should fulfill several requirements, including (i) high tolerability, (ii) high protection level for several years, (iii) single dose required, (iv) protection achieved within a few days, (v) oral administration for practicability, and (VI) simple formulation. The live attenuated *Vibrio cholerae* vaccine strain CVD 103-HgR appears to comply with these conditions.

CVD 103-HgR is derived from a wild-type Classical 01 *V. cholerae*. Its construction involved two successive steps. In the first one, a defined deletion was introduced into the gene encoding the A1 subunit of cholera toxin (ctxA gene). In a second step, a mercury resistance gene (mer locus) was inserted into the hlyA gene encoding a hemolysin in order to readily allow for the identification of the vaccine strain.

To date, more than 6'000 volunteers between 7 months and 65 years of age have been involved in placebo-controlled clinical trials performed in industrialized countries as well as in developing countries with endemic or epidemic cholera. In all studies, the vaccine was shown to be extremely well tolerated. A single oral dose of 5×10^8 colony-forming units (CFU) engenders a protective immune response in volunteers from industrialized countries. Protection against challenge with fully enterotoxigenic wild-type *V. cholerae* 01 can be achieved as early as 8 days after vaccination and maximal protection is conferred for at least 6 months. A vaccine formulation with a 10 times higher dosage has also been developed for the optimal immunization of inhabitants from cholera-endemic regions.

Recent clinical trials have shown that the combination of the typhoid live attenuated vaccine strain Ty21a and CVD 103-HgR in a bivalent vaccine formulation allows for the efficient immunisation against both typhoid fever and cholera. Finally, using recombinant DNA technology, CVD 103-HgR could be engineered to express candidate protective antigens from non-01 *V. cholerae* 0139. These developments show the feasibility of multivalent vaccines for the oral immunization of travellers and residents of endemic regions.

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Vaccination against Typhoid fever
GAETANO FARA, *Italy*

Abstract not received

Military populations have traveled all over the world for many centuries. Diseases and injuries have greatly influenced the outcome of several campaigns, wars and expeditions. For example about one third of the British and German troops suffered hepatitis A during the African campaign in World War II. Around 1830 the French troops in Algeria experienced a death rate of 64 per thousand. It is important to notice that the incidence of diseases have always outnumbered the battle injuries. However, military conflicts also brought increasing medical knowledge in many fields such as surgery, drug development, tropical medicine and public health. Fortunately major improvements in preventive medicine have been achieved.

Over the last few years many countries have become involved in peace support operations. Despite many similarities with former military operations they require a different approach concerning the planning and execution of medical support. The expected number of battle injuries should be limited, but a number of diseases are still a major risk. Preventive medicine plays a crucial role and morbidity surveillance is a key factor for short and long term planning and execution for present and future operations. For example, surveillance among Dutch marines in Cambodia provided short-term information for malaria treatment and long-term information for medical planning. Tropical diseases, dermatological disorders, and injuries formed the major groups responsible for morbidity. Finally peace support operations raise questions concerning medical assistance to local populations including the co-operation with other humanitarian relief organizations.

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Medical Planning for Peace Keeping Operations - the British Perspective.

J.P. EDMONDSON-JONES, *Ministry of Defense, London, United Kingdom.*

To fail to plan is to plan to fail. The medical mission must serve the overall military mission, which may in turn derive from UN or National Government directives. The level of medical support required will be determined by the overall peacekeeping mission; if the mission involves the direct provision of medical assistance to the indigent population, the quantity and quality of support will differ from that needed only for the military force. The requirements of planning medical support to peace keeping operations include a clear understanding of the mission, good intelligence, reconnaissance and proper interface with all agencies involved. Overall costs must be kept down. Planning must include measures to diminish time lost due to illness or injury among the military force. Problems associated with climate, geography and infrastructure must be fully appreciated. Flexibility in plans to allow for alterations in the overall mission may be needed, as will a definite idea of the expected end points both for definitive medical treatment and for the operation as a whole. Illustrations of recent peace keeping operations will be used, and a definition of peacekeeping operations in the context of the address will be suggested.

The French medical service uses the Humanitarian Assistance Military Task Force for Quick Intervention (FAHMIR) for its humanitarian missions. It consists of a military airlifted hospital for quick intervention called EMMIR, a Bioforce, a unit for the identification of military victims from catastrophes (CIVMC), and it could be reinforced with one or more Surgical Advanced Units. The main principles of these units are their ability to be quickly engaged, their complete modularity, their high technicality and their permanent training. The Bioforce was created in 1983 from the conjunction of the know-how of the Medical Service in the matter of fighting epidemics and of the availability of large stocks of vaccines. The Bioforce is the outcome of an agreement between three ministries and the French producers of vaccines. It is an intervention force aimed at providing know-how and biological products to countries facing epidemics and asking for help. The Bioforce can adapt itself to different types of missions: 1) Expertise missions - to recognize the nature, the virulence and the sensitiveness of the concerned germs, to evaluate the seriousness of the epidemiological situation, the importance of the necessary means and to propose an emergency public health program. 2) Missions of epidemiological surveillance and of hygiene promotion in refugee camps in order to prevent the spread of epidemics. 3) Prophylactic missions, logically following of the former ones, consisting of sending and using large quantities of vaccines with the corresponding cold chain and injection materials, and to teach and supervise local personnel, indispensable for the realization of those vaccination campaigns. The Bioforce equipment, fully transportable by air, mainly included a field laboratory, a vaccination unit, a cold chain unit, a treatment unit, a disinfection and hygiene unit. Transportation is provided by the Air Force or a commercial flight and in-country by the Army. The Bioforce has been deployed more than 20 times, since its creation in 1983, in Africa, South and Central America and the Middle East .

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Surgical Assistance for Peacekeeping Operations: the Italian Experience

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Different political situations during last decades involved member countries of international organizations (ONU-NATO-OSCE) to employ multinational contingents as peacekeeping forces.

Italian Army Medical Corps was employed in many peace keeping operations:

In 1982 a field hospital was deployed in Beirut, Lebanon

In 1991 a field hospital with 200 beds capability was deployed to support Kurdish population in the North of Iraq. In 1992 Medical Army Corps personal was employed in Albania during "Pelicano Operation".

From 1993 to 1994 different medical units were deployed in Somalia and Mozambique.

In June 1994 a medical team evacuated from Rwanda about 100 wounded children to Italian Hospital.

In 1996 IFOR Operation started in Bosnia and Italian Army Medical Corps deployed a field hospital that is still working in Sarajevo.

In 1997 another field hospital was deployed in Valona (Albania) to support "Alba Operation".

Authors show the organization of the Army Medical Corps Field Hospital emphasizing the surgical assistance.

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The Republic of Venice Legislation in XIV Century
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Abstract not received

The trading economy of the Venetian Republic, based on extensive commercial links at an international level, exposed it from the first great outbreak of Black Death in 1348 onwards to the risk of epidemics imported from elsewhere, above all along shipping routes. This led to the development of health laws intended to control imports and immigration, with measures like compulsory isolation for goods and passengers from potentially hazardous countries, and the repression of vagrancy, begging and prostitution, practised by all those people who flocked to Venice in times of war or calamity to search a means of subsistence. Control over ferrymen by public health officials transformed the broad lagoons dividing Venice from the mainland and the open sea into veritable defensive walls that were almost impenetrable. The more isolated islands were used as places of quarantine. Cases of leprosy were confined in 1262 on San Lazzaro, and the Old Lazaretto (1423) and New Lazaretto (1468) were built to accommodate plague victims and anyone who had come into contact with them and thus needed to be quarantined.

After the two serious plagues of 1576 and 1630, the system of checks on incoming goods and persons continued to grow in efficiency, with particular attention given to arrivals from the Ottoman Empire, where health legislation was judged to be unreliable. The Venetian Republic employed an international network of informants who immediately relayed any news of the outbreak of contagious epidemics. Relations with the infected city or country were broken off at once, while health inspectors in Venetian territories denied access to all goods and passengers coming from the 'suspect' place of origin, or that had passed through it.

From 1630 onwards, no fresh outbreaks of plague were registered in Venice, even though the disease continued to devastate the rest of Europe. In 1729 the Black Death struck Marseilles, and the Dutch consul in Venice asked for details of the methods used by the magistrate responsible for public health in the republic. Although Holland had managed to surpass Venice in trade and shipbuilding, it still had much to learn in the field of health management.

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Protective Measures of the Republic of Dubrovnik.
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The hygienic and epidemiological circumstances of the Dubrovnik's Republic were under the same influences as those of the Medieval World with whom Dubrovnik's maritime affairs, traffic and merchandise were in contact. Dubrovnik very early started to think about protection of the city from infectious diseases. Dubrovnik initiated quarantine measures in 1377; very soon afterward Venice made a similar decision, though the first quarantine would be built later. Following the regulations, every boat had to have "patente 1 bera" which is something similar to the yellow card of today. Without this card one could not enter the city harbor. The first hospital for travelers was built. The Republic chose the first sanitary ship control and limited white slavery market. The seamen were punished if they traveled to the harbors where contagious diseases existed. It is a walk through Medieval history full of dates and curiosities which, somehow, predetermined today's travel medicine.

The International Health Regulations(IHR) are being revised in accordance with a resolution adopted by the World Health Assembly in 1995. The purpose of the revision is to develop IHR which are adapted to the present volume of international traffic and trade and take account of current trends in the epidemiology of communicable diseases, including emerging disease threats.

The revised IHR will provide a mechanism for immediate notification of all disease outbreaks of urgent international importance. The disease outbreaks will be characterized initially by clinical syndrome rather than specific diagnosis, in order to expedite notification. An outbreak will be notifiable under the IHR only if both of the following conditions are met:(1) it corresponds to the case definition of one of the specified syndromes, and (2) it represents an event of urgent international importance.

Routine occurrence of endemic diseases will not be notifiable under the revised IHR.

The case definitions for the syndromes are intended to ensure that all outbreaks of communicable diseases representing an international threat will be notifiable under the revised IHR. The syndromes proposed for notification are: acute hemorrhagic fever, acute respiratory, acute diarrheal, acute jaundice, and acute neurological syndromes, as well as a category covering other notifiable syndromes of presumed infectious origin. Notification of a syndrome will normally be followed by a report on the specific disease once the diagnosis has been established. The urgent international importance of an outbreak will determine whether it should be notified.

The revised IHR will not supersede or interfere with any national or international surveillance efforts. Regular disease surveillance and reporting activities will continue, including regular reporting to WHO.

During the Middle Ages much traffic between Europe and the rest of the world passed through Croatia. Many diseases with potential epidemics were transmitted across the border. The most important antiepidemic measure in those times was the quarantine. The first real quarantine was built in Dubrovnik, the main trade center among two Adriatic coasts through XIV, XV, XVI centuries. Several quarantines were established in Dubrovnik, on the islands Mrkan, Supetar and Barbara, and on the peninsula Dace, Lokrum and Ploce. During XVI century world trade increased, requiring larger harbors. As a result, quarantine was established in several places, such as Sibenik. Zadar experienced 26 epidemics Bakar and Rijeka were stopping the suspicious boats in front of their bay. In 1722, the foundation stone Lazaret in Rijeka was placed in the little port Mandrae. The complex was opened in 1726 and represented one of the most modern health buildings of that time. In 1833, the new lazaret of St. Frances in Martinscica was opened, which was in operation until the First World War.

Since the beginning of the HIV/AIDS epidemic approximately two hundred thousand cases of AIDS have been reported in the European region. In most countries AIDS incidence reached a plateau in 1995, while in 1996 a decrease occurred which continued in 1997. The largest decrease was seen in homosexual men, followed by injection drug users (IDU) and heterosexuals. The main reason for the decline is the availability of effective combination therapy which is now given to many HIV-positives before they are diagnosed with AIDS. Trends are also influenced by a change of behavior in the eighties among the main risk groups. In Central and Eastern Europe trends are different and emerging HIV epidemics are especially seen among IDU. The steep increase in the number of sexually transmitted diseases (STDs) in these countries may herald a rising HIV incidence among heterosexuals. Although AIDS case reporting remains a useful indicator of the HIV situation, HIV surveillance will become more important in the future and should be standardized in Europe to be able to interpret future trends.

Similar trends are seen in other industrialized countries, but not in developing countries as the new drugs are too expensive, the treatment regimes too cumbersome and an HIV vaccine not available. Especially in sub-Saharan Africa the HIV prevalence and incidence are still high although there are encouraging data coming from some countries indicating that prevention efforts are effective. Methods are now available to subtype HIV strains and to further characterize these subtypes by sequencing part of the genome. These molecular tools have greatly increased the insight in the epidemiology and spread of HIV throughout the world and in specific risk groups. In most European countries HIV-1 subtype B is the main subtype found among homosexual men and IDU. Other subtypes are regularly imported especially from sub-Saharan Africa, but there is no evidence for substantial spread of these subtypes among heterosexuals at risk.

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HIV Infection and the Risk of Traveling.

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There are now millions of people worldwide infected with HIV and it is likely that a large number of these individuals will travel abroad for recreation, education or business. Exotic travel exposes the tourist to unusual infections and the risk may be increased in those with HIV because of poor cell-mediated immunity and also defects in humoral immunity. Live vaccines may be dangerous and many vaccines may be poorly efficacious in the setting of HIV. Prophylactic antibiotics may be required in some circumstances but all patients need advice regarding the risks of Tb and gastrointestinal infections, such as salmonella and cryptosporidiosis. Advice is also needed in case of intercurrent illness and drug interactions. With appropriate planning, individuals with HIV infection should be able to travel safely.

During recent years the epidemiology of AIDS has changed in several ways. In Europe and Italy the sexually transmissible form of the disease has increased especially in women, while the cases of individuals infected by syringe exchange and blood and derivate contamination or of children infected by seropositive mother have decreased.

The majority of sexually transmitted AIDS occur in females infected by their stable partners, while men contracted the infection through promiscuous sexual behaviour or sex with prostitutes. Moreover recent data have shown that Kaposi's Sarcoma is also a transmissible sexual disease caused by HHV-E, a herpes virus transmitted by sexual intercourse especially by the anal route. HIV infection transmission is facilitated by sexual behaviour such as promiscuous partners, by factors such as genital lesions in anal intercourse and by other concomitant sexually transmitted disorders.

Another important finding is that in spite of immigration, emigration and an increase in national and international travel, the epidemiology of HIV infection in Europe and Italy is stable. The towns and regions who had the highest prevalence of the disease ten years ago show the same level while those with a lower rate are still protected from the disease (South of Italy). This can be explained by the success of prevention campaigns, by some changes in the sexual behaviour of younger generations and by a decrease in the use of intravenous drugs.

In addition, the recent use of dew drugs capable of reducing viral load and the infectivity of blood and semen are responsible for the diminished infectivity and transmission of HIV infection. It has also been demonstrated that certain individuals, especially Caucasians are not or are less susceptible to the transmission of HIV infection due to a lack of chemokine receptors used by HIV to enter cells. In addition in the last 5 years the increased use of prevention and condom use in developing countries has also helped to reduce the disease. Despite this positive scenario, HIV disease is increasing in other non European countries such as South America, East Asia and Equatorial Africa. This is mainly caused by the absence of prevention, by the presence of more susceptible individuals for genetic reasons and concomitant diseases, by economical reasons and by an endemic strain of HIV (strain B) more transmissible by sexual routes.

The prevention of HIV infection in European travellers should concentrate on the spread of information on the risks of transmission through sexual intercourse especially by non protected prostitutes. At present we must concentrate on campaigns focused on several main points: counselling, the avoidance of sex in adolescents for ethical reasons, condom use, voluntary HIV testing in the case of possible contamination and the prevention and course of other transmissible disease.

At present antiretroviral drugs are not indicated in cases of sexual intercourse with partners at risk for HIV infection or with seropositive partners due to the low risk of transmission and to the unproved effects of drugs in the prevention of HIV transmission.

Future efforts should be directed to informing travellers and immigrants at risk for contracting the infection in European countries through unprotected sex. The use of condoms is difficult among young people and travellers for several reasons such as simultaneous use of contraceptives in women, the high cost of condoms, embarrassment, decrease in sexual pleasure and low desire to find condoms. Some of these negative factors can be overcome by the use of National Guide Lines.

Travel to southeast Asia is on the increase which includes large numbers from populations in developed countries as well as people from the region itself. Spreading and contracting of sexually transmitted diseases (STDs) including human immunodeficiency virus (HIV) infection is one of the important aspects of travel which has attracted attention in recent years with the increasing incidence of HIV infection in the region. The opportunities for sexual exploitation of women, children and men in the region encourage a large proportion of sex travelers travel to or within the region. Establishments of various hospitality industries under the umbrella of beauty parlors, massage parlors, karaoke bars, restaurants or guest houses in some countries in the southeast Asia region including Thailand, Cambodia, Myanmar, Vietnam, Philippines and southern China encourage people to choose these as sex holiday destinations.

A study conducted among departing travelers at the Hong Kong Kai Tak International airport indicated that 44% of 383 travelers who had traveled within the previous year had had sexual experience with a stranger (commercial sex workers, local people or other tourist) during their travel and 37% of them do not always use a condom. Having sex during travel was associated with ethnicity, age, gender, and sexual attitude. Using condoms during sexual intercourse was associated with age, marital status and perceived risk for HIV infection. A recent study among a sample of Hong Kong-China cross border population reported that about 40% of the respondents had had sex with strangers during their previous trip to China and more than 30% did not use a condom.

Besides sex travelers, those who are not traveling with the intention of sexual exploitation may also be prone to becoming involved in such activities due to the accessibility, attractive promotional package of the services together with the affordability of travelers. All of these carry a potential risks of STDs to travelers themselves, their spouses or partners and to the vulnerable people who provide services to them. Effective interventions are urgently needed to reduce the sexual health hazards related to travel in the southeast Asia region.

The total number of people found to be infected with HIV in New Zealand since testing became available in 1985 is 1214 (1075 male, 119 female, 20 sex unstated). The number with AIDS notified since similar monitoring was 635, of whom 606 were male and 29 female. The cumulative rate being 18.5 per 100,000 population. Ethnically 81.4% of those notified with AIDS were European/Pakeah and 10.9% Maori.

The expected AIDS epidemic has not affected New Zealand as it was thought it may have. There are a number of reasons for this and they will be outlined and discussed as appropriate.

Sexually Transmitted Infections (STI) are of public health importance because (a) they frequently cause disease; (b) they lead to severe complications and sequelae; and (C) "traditional" STI which cause genital discharges or genital ulcers enhance HIV transmission. The major STI are due to viral agents (HIV, HBV, HSV1 and 2, HPV), to bacterial agents (gonorrhoea, syphilis, chancroid, chlamydial infection) and include also such conditions as trichomoniasis and bacterial vaginosis. HIV/AIDS is now predominant but the other STI should not be neglected. The HIV/AIDS pandemic is still in expansion; there is a stabilization in industrialized countries, but increasing frequency rates in Africa, Asia and South America. The epidemic is nascent and rapidly spreading in 4 out of 5 of the most populated countries. In the world (China, India, Indonesia, Russia); in the fifth country (USA) rates are stable or slightly decreasing.

Population movement, of which international travel and tourism is a major fraction, undoubtedly is an important contributing factor for spreading STI. Travellers can import as well as export STI and their important role in transmission of infection was exemplified by the rapid global spread of antibiotic resistant gonococci and HIV/AIDS.

Prevention and control programs for STI should also target international travelers. Information and health promotion, in particular on safe sex, remain the most effective methods for prevention of STI in travelers. The travel industry has remained rather reluctant to provide advice on sexual health; other agencies (governmental and non-governmental) have responded to an overwhelming need and started such projects as "AIDS and mobility" in Europe. In particular the young people should be targeted for happy and healthy holiday campaigns ("sea, sand and safe sex").

Sexual tourism is common nowadays and sexual myths develop and change according to many criteria as religious, historical, economical, cultural, aesthetical, political, socio-anthropological and medical points which join to the history of prostitution. Its root is particularly connected to male-world, at least in Italy, but it involves all sexuality from ordinary sexual intercourse to straying one (as in case of pedophilia). Growing erotic desire brings to new feelings which are very often satisfied far away from local environment where there are too many social rules and controls of different kind. We also can divide it in "external sexual tourism" and "internal sexual tourism", the former being used "at home" exploiting men and women coming from all over the world (Viados, Nigerian, Eastern).

Sexual tourism has developed following erotical imaginations and unpleasantly the poverty of a country. In the first hand, we can find sexual stimuli in French sexuality, the myth of charming French women, North-sexuality (German and Sweden, for example), Anglo-Saxon with its free and emancipated women of East and West Coast, while, in the second hand, we point out natural African-sexuality, Brazilian, the wonderful women of playa carioca, Caribbean, from Cuba to S. Dominicus, Thai-sexuality with its well known massage, and of Oriental Europe (Russia, Romania, Bulgaria, Hungary) where the myth of "collant" played a big role.

Then, there are many cases in which there is not any connection between sex and poverty: Baleari Islands (Minorca, Majorca, Formentera and Ibiza particularly) and Cycladic Islands (Ios and Mykonos) are perfect examples of sex research where poverty has no rule at all as well as Cote d'Azur or Italian beaches with s. Tropez and Rimini/Riccione.

Another important feature is the economical aspect of sex-market which moves different interests and needs, problems as touristic prostitution, political and economical conditions of the countries involved, medical laws, health tutelage (STDs and AIDS), loss of human dignity in such affairs and loss of choice. Finally, sexual tourism is pleasure research, far from living places, which is equal to "home sex" in their deep dynamics and in their strength relations (a Western can force a Cuban woman as a professionist can push the role on to an employee) and this shows complexity of the problem.

The travelling patterns in Europe has and will probably change even more as a consequence of the break down of the communist rule in the eastern part of the Continent. This has also meant new pathways for export and import of infectious diseases; sexually transmitted infections being no exceptions. The mobility of the populations initially resulted in, e.g. a westward spread of syphilis and an eastward export of HIV. This early pattern of spread has now turned into a complex geographic STD epidemiology within the former communist countries. The mobility not only of clients to prostitutes but also of the prostitutes to clients even to other countries than their home country has accelerated the disperse of STDs. In some of the East European countries, syphilis cases do now occur in all strata of the population, as suggested by the socioeconomic background of the mothers of cases of congenital syphilis recently diagnosed in one of the Baltic states. A study of ours of 100 prostitutes, being consecutive attendees of an STD clinic in Riga mainly treating Russian speaking clients showed that all did suffer from one or more STDs. Thus 8-9% had active syphilis and/or gonorrhoea, respectively, while almost half had trichomoniasis. Approximately 20% were pregnant when attending. Later all, but one, interrupted their pregnancy. Gonorrhoea has decreased markedly in all Europe, including most of the former communist countries. However, the antibiotic susceptibility pattern of circulating strains is a matter of concern. The sex tourism performed by West and East European men, including abuse of underaged, is expanding, e.g. in all areas bordering the former iron curtain. The recent demonstration of every second prostitute in a series of Kaliningrad prostitutes being HIV-positive, is alarming. The slave trade of young women to brothels and other establishments within Europe and all mentioned facts from the pay-for-sex sector ought to be of great concern for tourism authorities as well as for health providers and bodies of justice in all European communities.

Objectives: Slovenia is a connection between rich and safe Western Europe and politically and economically unstable former communist Eastern Bloc states with high incidences of STDs. Many Slovenians earn their living in Eastern Europe. International travelers to Slovenia are business persons, holiday makers, refugees and migrants. Slovenians still have contact with their relatives in the regions of Yugoslavia where the consequences of the war are still present. In the last years there was a decreasing number of refugees from the former Yugoslavia (13,900 in 1996). Though prostitution is illegal in Slovenia, there is an undetermined number of prostitutes from Eastern Europe.

Methods: Slovenia has very reliable data on classical STDs (syphilis, gonorrhea, chancroid and lymphogranuloma venereum) since 1951. The data are reported monthly by dermatovenereologists from the entire country to the STD Registry Office. We analyzed all the cases of classical STDs for the period, 1994-1996.

Results: We registered 102 cases of early syphilis, 514 cases of gonorrhea, 1 case of lymphogranuloma venereum. Early syphilis: 62.66% of the infections were acquired abroad and 42.66% in the former Eastern Bloc countries. Gonorrhea: 21.82% of the infections were acquired abroad and 16.92% in former Eastern Bloc countries. 1 case of lymphogranuloma venereum was imported from Africa. No cases of chancroid were registered.

Conclusions: Slovenians, traveling abroad especially in the states of the former Eastern Bloc and Yugoslavia represent the majority of STD infected persons. Illegal prostitution in Slovenia and "sex tourists" do not seem to be an important source of sexually transmitted infections. The modes of transmission of STDs and methods of safer sex must be explained to the traveler. The current epidemiological situation of STDs in Slovenia warrants strict surveillance by our medical services and close cooperation with the health authorities in all the neighboring states.

We investigated sexual tourism, evaluating linked problems and possible dangers for health. To overcome the usual difficulties in dealing with research in this field, a group of people has been examined who had spoken to their physician because of travel-related disease. The investigation was carried out with the approval of all patients keeping anonymity. The study concentrated on countries with sexual tourism.

Because of the small number of people, the present research is considerably limited. Anyway, it was possible to sketch a quite reasonable framework either concerning chosen countries and characteristics of people or concerning behaviors with respect to health.

Intervention proposals to modify or to limit risky behaviors, were promoted.

Risk Factors for HCV Transmission in Sexual and Non-Sexual Family Contacts.

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Background: Sexual transmission of HCV infection is less frequent than of HBV. Moreover, HCV transmission in non-sexual family contacts is reported but its role is unclear. The aim of this study is to investigate the risk factors for HCV transmission in household contacts of patients with anti-HCV positive chronic liver disease.

Methods: From July 1994 to December 1996, 234 family contacts (139 females and 95 males, mean age 40 years) of 127 anti-HCV positive patients with chronic liver disease were interviewed using a structured questionnaire concerned with potential risk factors of hepatitis C. Among the family members, 139 were non-sexual contacts and 95 were sexual partners. Crude Odds Ratios and 95% confidence intervals were calculated for each risk factor.

Results: The risk factor showing the strongest association with anti-HCV seropositivity was sexual relationship with index cases (O.R. 4.49, C.I. 1.68-11.94). Significant association was also found with intravenous drug abuse (O.R. 26.4, C.I. 1.43-485.6) and with history of sexual contacts with I.V. drug users (O.R. 9.95, C.I. 1.32-74.49). Multivariate analysis showed that only intravenous drug abuse remained as an independent risk factor ($p=0.03$). In non-sexual contact group, anti-HCV positivity was significantly associated with I.V. drug abuse (O.R. 26.4, C.I. 1.43-485.6), history of surgical interventions with blood transfusion (O.R. 13, C.I. 1.003-168.3), sexual contacts with intravenous drug users. The best fit in logistic regression was obtained by the 3 variables model: I.V. drug abuse, surgical interventions with blood transfusion, tattoos ($p=0.02$).

Conclusions: Our findings confirm that the most frequent mode of HCV intrafamily transmission is sexual. Non-sexual transmission is infrequent. Risk factors significantly associated with anti-HCV seropositivity in non-sexual family members are the same as those involved in parenteral transmitted infections.

Travel from industrialized countries to developing tropical regions of Latin America, Africa, and Asia is associated with the rate of occurrence of diarrhea of approximately 40%. As much as 80% of the illness is caused by bacterial agents and food is the major vehicle of transmission. Water appears to be an important vehicle for viruses, responsible for approximately 10% of the illness. Exercising care about what one eats and drinks is fundamental to disease prevention, with avoidance of items with moisture that are served at room temperature such as salads, buffet-style foods, previously cooked foods served at room temperature, tap water (including ice) and non-carbonated non-bottled drinks. A minority of travelers may employ prophylactic drugs to prevent the illness including those who have a medical condition predisposing to diarrhea or its complications or when the mission is so critical that a six to eight hour illness could destroy the purpose of the trip. It is suggested that all persons to be put at risk be armed pretravel with an antidiarrheal medication (e.g. loperamide) and an antibacterial drug (e.g. a fluoroquinolone) to employ in the treatment of diarrhea that might occur. Minor diarrhea may be treated with symptomatic drugs only. The antibacterial drug is taken with passage of the third unformed stool in a 24 hour time period, alone if the patient has fever or in passing bloody stools or with an antimotility drug if these are not present. The usual antibacterial drug is a fluoroquinolone (norfloxacin 400mg., ciprofloxacin 500mg, or ofloxacin 200-300mg given for one dose [milder to moderate illness] or twice a day for three days [severe cases]). Antibacterial drugs will shorten the duration of illness by two to three days. Antisecretory drugs are being developed which may have advantages over the antimotility drugs and nonabsorbed antibacterial drugs (e.g. rifaximin) may prove to be the optimal treatment of the illness.

Diarrhea represents a major health problem in travelers to developing Countries. Although the syndrome is usually self-limited and recovery could occur in the majority of cases without any specific form of therapy, there is a need for safe and effective ways of preventing and treating it. The key factor in the management of acute watery traveler's diarrhea, particularly in infants and young children, is the restoration of water and electrolyte balance (i.e. oral rehydration therapy, ORT). This does not reduce the duration of the illness but its use will limit dehydration and prevent acidosis. Many patients will require no additional therapy whereas some can need a pharmacologic treatment to shorten the duration of diarrhea or to relieve the accompanying symptoms, like abdominal discomfort, nausea and vomiting. These include antidiarrheal compounds to reduce both the frequency of passage of stools and the duration of illness, antispasmodics to relieve abdominal cramps and antiemetics to control vomiting, thus allowing a better ORT. Some systemic antimicrobials have been successfully used, but, during the last few years the 4-fluoroquinolone drugs have received considerable attention and have been shown to be highly effective in reducing the duration of traveler's diarrhea. The safest choice remains the use of poorly absorbed antimicrobials (like, for instance, bicozamycin furazolidone and rifaximin). Although theoretically safe, "poorly absorbed" antimicrobials could become "absorbable" in the presence of mucosal inflammatory or ulcerative changes, like those occurring when invasive bacteria colonize the intestine. Studies in rats with experimentally-induced ulcerative colitis or patients with UC have shown that no detectable blood levels of rifaximin could be found after oral administration. This drug seems therefore to be a true "topical" antimicrobial, particularly suitable for treatment of traveler's diarrhea.

Subacute or chronic diarrheal syndromes are being increasingly recognized by clinicians who practice travel medicine. 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 agent of acute diarrhea are also found to be responsible for persistent diarrhea. In addition to relapsing and recrudescing Salmonella and Shigella infections, Enteraggregative 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 diarrhea. Entameba histolytica may cause persistent diarrhea but is probably a much less common cause of acute and chronic diarrhea in travelers than has been previously suggested. The syndrome of post dysenteric colitis which is characterized by continued symptoms of diarrhea after treatment for presumed E. histolytica infection is probably more common after treatment of other enteric pathogens. Post infective malabsorption may be a temporary phenomenon after any cause of infectious diarrhea. Chronic malabsorption may reflect underlying tropical sprue. 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, celiac sprue or a pre-existing irritable bowel syndrome. Clostridium difficile colitis 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.

The most fruitful approach to the evaluation of chronic post travel diarrhea involves careful attention to travel history, onset of symptoms, specific symptoms, and antibiotic use during the trip. Evaluation often includes stool for microscopy, C. difficile and culture. Empiric therapy with quinolone antibiotics, a d-xylose test, a trial of a lactose-free diet, and certain blood tests such as amebic serologies, CBC with differential, and electrolytes may be useful. Hemoccult testing can be utilized in older age groups and endoscopic procedures reserved for cases that defy diagnosis after the above diagnostic interventions have been employed.

Cyclospora as a Cause of Traveler's Diarrhea.

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Objective: To describe 4 cases of traveler's diarrhea (TD) caused by *Cyclospora cayetinensis* (C.c.) in Italian tourists.

Reports: Patient 1 - a 54 year old man, after a holiday trip to Hong Kong, Bali and Singapore, complains of watery diarrhea (4-5 bowel movements/day), abdominal pain, nausea and fatigue. Laboratory investigation showed immature C.c. oocysts. Symptomatic anti-diarrheal (loperamide) and rehydrating treatment was started with complete oocyst clearance on day 26. The patient drank beverages with ice in Singapore, the last stage of the trip. Patients 2-3: married couple coming back from a 3 week holiday to Bali, Java and Singapore. Four days after return, the woman complained of water diarrhea (10-12 bowel movements a day) with severe abdominal pain whereas the man complained of epigastric ache with 3-4 semiliquid daily evacuations. Therapy with ciprofloxacin and loperamide was given. Coproparasitological exam was positive for C.c. oocysts in both patients. Symptomatic therapy was given with parasitological cure on day 23 for the husband and on day 30 for the wife, respectively. The patients drunk tap water in the hotel in Singapore. Patient 4: a 28 year old woman during the honeymoon in Mexico did not pursue any food and drink prophylaxis. After 10 days she complained of diarrhea (5-6 bowel movements per day) and abdominal pain. A few days after her return to Italy, parasitological test showed C.c. oocysts.

Conclusions: *C. cayetinensis* is increasingly reported as an etiologic agent of travelers' diarrhea. In the immunocompetent subject the infection is self-limiting, and cotrimoxazole is the drug of choice.

The obligations for food handling personnel by Croatian legislation are education about hygiene and health examinations. Good education is undoubtedly the most reliable way of protecting food. Health examinations before starting to work are efficient. The purpose of this review is to discuss periodic examinations (twice a year for carrying salmonella and shigella and once a year for carrying parasites) as the method for detecting and isolating carriers from contact with food.

The efficiency is not low when detecting chronic carriers, but if the carrier-state is of short duration, the efficiency of detecting and isolating carriers from contact with food is very low (if all the personnel examined and all detected carriers isolated, the efficiency is only 5.48% for "non-typhoid" salmonella and 13.870% for shigella). Improving laboratory methods or increasing the frequency of examinations would give some, but not a satisfying rise of the efficiency.

Canine rabies was endemic at the beginning of the century in Europe as it is currently in most parts of Asia, South America and Africa. It disappeared from France due to the control and vaccination of domestic animals since 1941. The fox rabies enzootics that originated in Eastern Europe, appeared in the eastern part of France in 1968. Since then, animal and human rabies cases have been monitored through two centralized and separated networks, the CNEVA-LERPAS, located in Maizeville, for the surveillance of animal rabies, and the National Reference Center for Rabies located at the Rabies Unit at the Pasteur Institute. The National Reference Center for Rabies carries out performing laboratory diagnosis in animals suspected of having infected humans and also in patients. Data of all the cases and of patients treated in the Rabies Treatment Centers throughout the French territory are collected and analyzed.

Indigenously acquired human rabies has not occurred in France since 1924. Nineteen reported cases have been reported. About 8000 patients per year have been treated after being bitten, 5% of them outside France. Children under 10 years are at highest risk, as well as residents and travelers staying in remote areas. A comparison is made with human rabies cases occurring in other European countries and the USA.

Rabies pre-exposure immunization as well as information on rabies epidemiology and exposure, and guide-lines for first aid and rabies post-exposure treatment, should be included in the travel clinics as well as in the GP medical information.

In Croatia and in other European countries foxes are a source of rabies. They transmit rabies to other wild and domestic animals. Main European vectors to humans are dogs, then cats and other animals. In Croatia more and more importance is attached to rural tourism, where tourists come in contact with domestic animals and wildlife. Animal bites occur relatively often in the country, on which occasions one needs to think of rabies. Therefore, attention should be paid to education of residents and tourist officials on first aid and recommended procedures for a bitten patient.

The first confirmed case of rabies in Croatia was in 1977 in a red fox. Subsequently it has also been confirmed among wild and domestic animals throughout the territory of Croatia. The Adriatic Islands are the only place that is free from rabies. In the last 19 years 40,000 animals were examined for rabies (32,000 wild animals and 7,600 domestic animals). Of this number, rabies was detected in 6,706 of the wild animals (98% of these were foxes) and in 398 of the domestic animals (40% of these were dogs). During the same period there were no human rabies cases in the country. However, in 1989 and in 1996 there were two cases of imported hydrophobia in two persons, both of whom were treated and died in Zagreb.

Yearly, about 6,000 people in Croatia go to antirabies stations where 1201 immunizations were given in 1996. This was carried out by administering concentrated human diploid cell vaccine (HDCV) following the so called shortened scheme 2-1-1 with four vaccine doses: on day zero two doses, on the 7th and 21st day a dose each (Zagreb procedure), following 1992 WHO recommended standard immunization procedures. In the area of the Littoral-highlander county (Rijeka with its coast, islands and hinterlands) about 300 persons on average reported contact (bites, scratches and the like), with a rabid or dubious animal to antirabies stations. In 1996, 25 antirabic prophylaxis were indicated out of these reports.

In this country, attention is being paid to wildlife rabies prevention of foxes, by taking systematic action in the area of the Littoral-highlander county and towards the Slovenian border by spreading baits containing vaccine along fox habitats.

Rabies is a fatal viral meningoencephalitis usually caused by a rabid animal bite. It may also result from a non-bite exposure to the rabies virus. There is no chance of treatment once clinical symptoms have occurred. The incubation period varies from a few weeks to months, but could also be some years. Rabies is distributed all over the world. According to official WHO data, more than 2.5 billion people are at risk in over 90 countries reporting the disease. Rabies mortality ranks 10 in all infectious diseases worldwide. There are still about 50,000 human deaths although effective vaccines for post-exposure treatment are available. Most affected are the tropical countries in Asia, Africa, South America, and Oceania. Rabies-free are island states because of their geographical isolation and their control and quarantine programs. Rabies is more or less under control in Europe and North America through oral wildlife vaccination and mandatory parenteral vaccination of domestic animals. The vast majority (95-98%) of the 50,000 annual human rabies deaths worldwide occur in canine (dog rabies) endemic regions with large stray dog populations. Cats, bats, bovines, and various wildlife species are responsible for the other human death cases. There exists a certain risk for tourists who travel to areas with endemic rabies because most are unaware of the danger of the deadly disease. Health education is essential to protect tourists. Travelers should seek advice on the current rabies situation and which animals are rabies reservoirs in the area to be visited. Rabies disease and death can easily and effectively be prevented by not petty domestic dogs and cats and avoiding contact with wild animals. Each scratch or bite should be reported to a local physician for advice on post-exposure treatment with human rabies vaccines. Further consultation should be sought on return to home country. Pre-exposure vaccination might be offered to people at high risk for exposure abroad. In this context, the following will be discussed, pathogenesis and rabies disease, detailed epidemiological data, measures to be taken after exposure in tropical countries, guidelines for pre- and post- exposure vaccination, simultaneous administration of rabies immunoglobulin either of human (HRIG) or equine(ERIG) origin in case of severe exposure and how to avoid treatment mistakes.

Description of Two Patients with Imported Rabies.

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In the last 23 years 3 cases of rabies were reported in Italy, all 3 were cases of "imported" rabies. We describe two of these.

Patient A: In India in 1974, a man on a safari fell from a car and a wound on his face was licked by a jackal. 21 days later, at home in Italy, the patient developed fever, anxiety, myalgia and paraesthesia in the area of the wound and on the ambilateral arm. Two days later he showed typical hydrophobia and aerophobia and was admitted to the Infectious Diseases Department of the Hospital of Bologna. After 7 days, acute progressive myelitis developed. The patient died 14 days after the onset of these symptoms in spite of therapy with rabies vaccine (HDCS) and hyperimmune serum (HS).

Patient B: In 1996 a man on his honeymoon in Nepal was bitten on the right hand by a young dog. Twenty-seven days later he developed paraesthesia at the bitten hand, fever and hydrophobia. Two days later, a few hours after having been admitted to the Infectious Diseases Department of the Hospital of Venezia, the patient developed aerophobia and spasmodic muscle contractions with apnoea attacks. Therapy with HDCS and HS was not effective and the patient died 6 days after the onset of symptoms.

In both cases the patient's cerebrospinal (CSF) fluid was normal and neutralizing antibodies in serum and CSF were negative, whereas inoculation of salival supernatant in mouse brains confirmed the presence of the virus. Typical encephalomyelitis with Negri bodies in Ammone's horn neurons resulted from both patient's autopsy. Direct immunofluorescence was positive on the salivary glands and spinal cord of the 2nd patient.

Rabies is enzootic in most areas of the world. In many developing countries the control and the prevention of rabies is either poor or entirely absent. Information about the risks of contracting rabies should be given to travelers in these countries. In certain cases pre-exposure prophylaxis with vaccination should be strongly recommended.

Background: the compulsory Social Security Health Insurance Scheme in Belgium provides coverage for the most basic health needs. Coverage under this scheme exists in Belgium and in states with which the Belgian government has signed a treaty (i.e. within the EEC and with some Mediterranean countries). The insurance scheme only covers basic needs.

Therefore, the health funds enable their members to join a complementary, voluntary scheme (CVS). This provides several services, including coverage for certain interventions or facilities in Belgium not covered under the compulsory scheme, and assistance and coverage for medical care and medical repatriation during recreational travel abroad. EuroCross Belgium is a non-profit association. Members are the Belgian health funds and EuroCross International. EuroCross International provides the procedures, techniques, software applications, and worldwide network of correspondents, subcontractors, and contacts. The Belgian health funds provide financing of the organization plus coverage for their subscribers of the CVS.

EuroCross Belgium handled 7,311 cases in 1996, of which 4,417 were evaluated. A total of 1,426 Belgian travellers were repatriated. Personal and medical data were obtained by contacting the travellers and their physicians.

Background: The role of the registered nurse (RN) has been expanded at Oregon Health Sciences University International Travel Clinic, allowing the RN to assume basic pre-travel consultative duties previously designated to the medical doctor (MD). RNs also see patients in a clinical setting where other physicians are available on-site for emergencies. The MD continues to see new travelers with complicated medical histories, children under the age of 6, and patients returning with post-travel illnesses.

Method: The traditional MD role in pre-travel medicine with RN assistance was analyzed, and protocols were developed enabling the RN to assume consultative responsibilities. Satisfaction surveys were given to each pre-travel patient at the time of the initial consult for return after travel.

Results: From July 1996 through October 1997, 2177 pre-travel patients were seen: 867 by MDs and 1310 by RNs. Patients were charged \$45 for physician pre-travel consult and \$32 for RN consult. Average cost basis per hour for an MD is \$48 and for an RN, \$22. Written surveys from post-travel patients indicate overall patient satisfaction with both consultative options.

Conclusion: The role of RNs in travel medicine can be expanded to offer effective, affordable and comprehensive preventive counseling and immunizations. Patient costs are reduced by an average of 30% when patients are seen by an RN vs MD thus making pre-travel patients consultations affordable for the traveler. Clinic costs are reduced by an average of 21% when pre-travel patients are seen by an RN vs MD. RN pre-travel consults now comprise 84% of pre-travel patient visits.

Objective: To evaluate, in Extra European Economic Community (EEEC) women at high risk for STD and HIV infection, the correlation among sociodemographic characteristics, sexual behaviors and genital tract infections/dysplasia.

Methods: From December 1994 to November 1997, 59 EEEEC women (88% Nigerian, 10% South American and 2% Eastern European) participated in gynecological screening, which included cytospin, mirrored biopsies, microscopic research for virus (HSV), bacteria (*C. trachomatis*, mycoplasma/ureaplasma), fungi (*Candida* spp.), protozoa (*T. vaginalis*), and serological tests for HBV/HCV, HIV and Syphilis. The results were evaluated to assess correlation among sociodemographic details, sexual behaviors (number of partners in the last two months, condom use, 1st sexual intercourse age) and STDs. Categorical variables were analyzed using Pearson χ^2 test, according to Fisher and Yates correction and continuous variables were studied using non-parametric tests (Wilcoxon and Mann-Witney Test).

Results and Conclusions: Among EEEEC women, median age 26 years (R:19-45), 11% had high educational level, 29% were married, 9% lived with steady partner, 33% had sons, 65% gave a history of voluntary abortion. Median age of sexual initiation was 18 years (R: 14-20). 76% of the patients reported more than 5 sexual acts at risk in the last 2 months and only 29% referred condom use while only 39% used contraceptive methods. Only 3 women had a history of IVDUs, 29 resulted HIV Ab positive and their median CD4 cell count was 250/ μ l (R: 4-1013). Nine patients were HCV or HBV carriers. Six patients (10%) had a history of STDs. Positive serology for syphilis was found in 9 patients. STDs were demonstrated in 46 patients. Microbiological examinations showed mycoplasma in 39% of total isolations, candida in 24%, non venereal bacteria in 23%, *trichomonas vaginalis* in 9% and HSV in 4%. Severe dysplasia was found in 6 patients (10%). Higher educational level was associated with proper contraception ($p=0.005$), minor frequency of abortion ($p=0.05$), condom use ($p=0.0032$) and no previous STDs ($p=0.046$). Younger age was related with unsafe sex ($p=0.00059$) and incorrect contraception ($p=0.00008$). Finally, STDs were related with younger age (mean age: 27 vs 31 yrs, $p=0.05$) and early sexual initiation ($p=0.00042$). HIV infection and immunological status did not appear to influence STD manifestations.

Chlamydia Trachomatis and Sexual Behavior.

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Sexually transmitted diseases are among the most common infectious conditions worldwide. The purpose of this study was to establish the prevalence and the relationship with sexual behavior of Chlamydia trachomatis infection in women attending the Obstetrics and Gynecology Clinic, University of Rome, "La Sapienza". A total of 80 women were examined for the presence of the pathogen. Cervical and urethral samples were collected. The specimens were processed using chlamydial culture employing McCoy cells, treated with cycloboximide. Chlamydia trachomatis was detected in 13/80 (16.2%) cervical samples and in 3/80 (3.7%) urethral samples. Of 13 women infected with Chlamydia trachomatis, 4/11 (36.3%) were less than 20 years old and 9/69 (13%) older. The sexual behavior investigation of those infected with Chlamydia trachomatis indicated that they had more than 5 partners during their lifetime (38.5%), had a greater frequency of more than one sexual partner in the last six months (23%), were not using any contraception (46.1%), used barrier methods (23.1%), and used oral contraception (30.8%).

Conclusions: A sexual risky lifestyle is important in the acquisition of sexually transmitted diseases and particularly of Chlamydia trachomatis. Systematic screening for Chlamydia trachomatis should be extended chiefly to young people that are more likely to be infected even in an asymptomatic form when sexually active.

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Importance of Chlamydia Trachomatis Genitourinary Infection in Women.

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Chlamydia trachomatis is estimated worldwide to be a major cause of sexually transmitted diseases (STD) with different rates of infection, depending on the type of population tested. Reliable data are difficult to obtain, considering that a large number of infected subjects are asymptomatic and seldom ask for medical care or for microbiological confirmation. Due chiefly to its silent course, chlamydial genitourinary infection, particularly in young women, frequently leads to serious sequelae as salpingitis, infertility, abortion, premature delivery, ectopic pregnancy, the incidence of which in our country seems to persist in a steady state.

Objective: to survey the rate of C. trachomatis infection in women of different age, consecutively tested, attending hospital based clinics, or asymptomatic, but partner/mother of infected subjects (apmis).

Materials and methods: 300 sexually active women were included, 33 younger than 20 years (mean age: 17.2 years) and 267 older (mean age 32.0 years). Two swabs from the cervix and 2 swabs from the urethra were taken in each subject and processed in parallel with 2 methods, culture in shell vials and direct immunofluorescence (Microtrak, Syva). We considered C trachomatis infected the women in whom at least one test was positive in one specimen and with one method.

Results: the rate of infected cases was 18/33 (54.5%) in the younger patients and 118/267 (44.2%) in the older ones. Significant ($p=0.02$; $c2=5.19$) was the difference between the rate of positivity in the symptomatic 103/206 (50.0%) and in the apmis 33/94 (35.1%). Of the 136 positive subjects resulted infected: 48 (35.3%) only at the cervix; 20 (14.7%) only at the urethra; 68 (50%) at both sites. Conclusions: the overall C trachomatis infection prevalence was (136/300; 45.3%) Testing also the female urethra gave us a 14.7% more of positive results. Preventive measures are urgently needed as education campaigns on STD for teen-agers, and systematic screening C trachomatis testing in sexually active subjects.

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Import of HIV-1 Non B Subtype to Austria by Sex Tourism.
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HIV-1 subtype B is highly prevalent in Western Europe and North America. In Africa the genomic diversity of HIV-1 is much greater with different subtypes. In parts of Southeast Asia subtype E is found most frequently. It has been reported that subtype E may be associated with a higher risk of heterosexual transmission compared to subtype B.

Import of HIV-1 non B subtypes to Austria is demonstrated by three cases of sex tourism. Two male patients had heterosexual contacts in Thailand and one female in Kenya. Serotyping was done by a competitive enzyme immunoassay using 120/V3 peptides corresponding to subtypes A,B,C,D and E. Patient 1: A 60-year old man had been to Thailand as a sex tourist in 1992. During a zoster infection, HIV-1 antibodies were found in 1997.

Patient 2: A 34 year old man developed flu like symptoms several weeks after his return from a sex travel to Thailand in 1993. An HIV-1 infection was diagnosed.

Patient 3: A 33 year old woman had several heterosexual contacts in Kenya in 1997. Two months later an HIV-1 infection was diagnosed at a blood donation screening.

Serotyping of both HIV-1 infections from Thailand revealed serotype E, whereas serotype C was found in the patient infected in Kenya. Two of the three HIV-1 infections were diagnosed within 3 months after infection, the third five years later.

Subtyping is important to survey the epidemical situation and to trace the import of different HIV-1 subtypes. Campaigns for prevention of HIV infections may concentrate especially on sex tourists to avoid further import of HIV-1 non B subtypes to Western Europe.

A study has been conducted in 1994 and 1996 in the Central Clinic for foreigners, "Cira Garcia" in Havana, Cuba, of women presenting at the gynecology department with abnormal vaginal secretions. An endocervix and vaginal exudate test was made with Grams-techniques and culture to determine the etiology. Isolates were made of *Candida*, microorganisms associated to the bacterial vaginosis, and vaginal trichomonas.

In addition, patients of both sexes were studied, and a serologic test was performed for syphilis (VDRL) and AIDS (Elisa and Western blot). 0.43% of the patients were positive for syphilis, 0.37% for AIDS. 77.7% of those identified by Elisa were positive by Western blot and 22.2% was indeterminate.

Treatment and control of sexually transmitted disease (STDs) is important in tourists visiting Cuba.

Fox rabies has occurred in France since 1968, red fox being the main rabies virus vector and reservoir. No animal case of

carnivorous rabies has been reported in this country for more than one year. Rabies reached the west and the south areas of France from the Moselle region. A total of 3487 rabies-positive wild animals has been reported from 27 departments in France in 1989.

Different prophylaxis strategies were developed since 1986 in France: fox extermination in rabies emergencies, development of oral vaccines, and vaccination campaigns of foxes. Vaccines, vaccine baits, different fox oral vaccination pathways and human risks for those exposed to vaccine baits are discussed. The success of the used strategies suggest the following questions: how should fox vaccinations be carried out, what will be the extent of new generation vaccines (i.e. recombinant vaccines), and what is the risk of new "imported" rabies in the border regions?

Bat rabies is another serious problem in Europe with more than 30 bat species. Only one, the common serotine, is reported in more than 93% of isolated cases. The increase of bat rabies cases during 1986 and 1987 suggests epizootic rabies in European insectivorous bats. It is not clear what the best program would be for protections against rabies. The most efficient protection against rabies relies on a high level of public general information. In addition, available human vaccines have to be improved, since chiroptere rabies is due to related rabies virus lyssavirus strains (EBL - 1 and EBL -2).

We studied 120 tourist patients that came to Central Clinic "Cira Garcia" of Havana, Cuba, between January 1995 and July 1997 with high digestive symptoms with a previous pathologic diagnosis and in which the result of the endoscopy drainage test was negative. A study of duodenal and biliary smear was made to assess the prevalence of *Lambli*a *Giardia* and to compare the effectiveness of both methods in the parasite diagnosis.

Of 120 patients studied, the smear was positive in 104 (86.6%), which indicates an elevated prevalence of this parasite. The result of drainage was positive in 65 patients (54%). Comparison of both methods indicates that all patients with positive drainage had positive smear, and 35 of 55 (63.6%) patients with negative drainage had a positive duodenal smear. In all patients with a negative smear, the result of biliary drainage was negative.

We conclude that there is a high prevalence of Giardiasis in the studied tourists and that the duodenal smear is superior to the drainage as a diagnostic method.

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Salmonella Enteritidis in Two Touristic Areas in Croatia in a 10 year period (1985-1994).

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A total of 5025 cases of acute (parasites not included) diarrheal diseases have been reported during the ten year period (1985-1994) to the 2 health centers (departments of hygiene and epidemiology). There was no typhoid fever.

The reporting was based on clinical diagnosis, but for 1071 of these cases the causal microorganism was known (laboratory diagnosis and/or those individually reported cases which were related to outbreaks with a known etiology). Among these cases, 1014 (94%) were caused by salmonellas. 66% of the salmonella infections were due to S. enteritidis.

Imported Parasitic Infections Diagnosed at the Departments of Tropical Medicine of the University Hospitals in Bratislava and Kosics, Slovakia, 1993-1997.

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The authors present the results of parasitological examinations during the period 1993-1997 in Slovak citizens coming from abroad and in foreign citizens coming to Slovakia for work, study, business or other long-term stays. During the period of study 14,504 parasitological examinations were made. There were 172 positive findings for persons who were travelers from Slovakia and 877 positive findings from foreigners. The most common pathogens from intestinal parasites were *Giardia lamblia*, *Trichuris trichiura*, *Entamoeba histolytica*, other infections were malaria, schistosomiasis, cutaneous larva migrans and others.

In addition, increased migration of populations and the increased intensity of tourist traffic poses an increased risk of transferred infections and parasitic infections, rare in our country.

Factors which affect the occurrence of travel-associated diseases in the Middle East will be discussed.

Since becoming a member of the EU, tourism to Sweden has increased. People from neighboring countries buy summer houses in Sweden and they are exposed to a variety of vector-borne infections and zoonoses while living in the countryside. Other groups of tourists are those who come to Sweden for birdwatching, hunting and trekking in the north. It might be that, due to the incubation period, they fall ill after returning home and their doctor may be unfamiliar with uncommon clinical entities.

Lyme Borreliosis: Lyme borreliosis is not a notifiable disease in Sweden, therefore the exact number and distribution is not known. The best estimate is that we have around 10,000 cases each year. In 1995 we made a study in southern Sweden and found altogether 1471 cases during a one year study. Most of the cases were infected on the south-east coast.

Tularemia: During epidemic years over 100 cases are reported. Most of them occur in the northern most part of the country, but we have seen cases also in the south. The infectious bacterial agent, *Francisella tularensis*, is commonly transmitted by contact with rodents, by inhalation of infected dust or by insect bites.

Sindbis virus infections: Some years up to 50 cases of this mosquito-borne infection are reported. The so called Ockelbo disease is a mild febrile illness, sometimes complicated by long-term arthralgias. We saw one of the southern most cases in our country recently, but the majority are seen in middle and northern Sweden.

Tick borne encephalitis: Between 50 and 100 cases are recorded annually. Most cases, sometimes severe, occur in the Stockholm area and along the east coast. Tourists who stay in the archipelago of the capital are advised to be vaccinated.

Nephropatia epidemica is caused by puumala virus. Between 100 and 300 cases are recorded annually. Most cases are seen north of lines Norrlandicus. Certain rodents transmit the infection, that may be alarming with abdominal pain and anuria for a large number of patients.

The population of Karatas town, one of two coastal towns of Turkey, is 11, 850 and reaches 35,000 people during the summer. One of the purposes of the study was to determine the reasons for the cases of travelers diarrhea (57.5% acute diarrhea occurred among tourists). Another purpose was to take measures to prevent diarrhea by examining these cases of tourist health.

Every year from the beginning of July to the end of September, 25,000 tourists, 89.2% internal and 10.8% foreign, visit and stay for a while in Karatas town where there are, with different capacities, many hotels, motels, pensions, camping and governmental resting homes. Karatas has a bed capacity of 1216 beds, 1050 areas are reserved for tents. Acute diarrhea cases recorded in the village clinic book were examined according to age, sex, laboratory tests and treatments.

From January-December, 1997, there were a total of 492 acute diarrhea cases, 351 (71.3%) of which were in the tourist season (1 July-30 September, 1997). 202 (57.6%) of 351 acute diarrhea cases determined in the tourist season were travelers' diarrhea. Of these cases 80 (39.6%) were 0-19 years of age; 96 (49.0%) 20-60 years of age; and 26 (12.4%) were > 60 years old. The factors on 17 cases (8.4%) by *Entamoeba histolytica*, 7 cases (3.5%) by *giardia lamblia* totaling 24 (11.9%) were determined by laboratory tests, and for 178 (88.1%) Enterotoxigenic *E. Coli* acute diarrhea was considered. Oral rehydration salt had been suggested to 7 (3.5%) of these cases.

To prevent travelers' diarrhea cases or to reduce its occurrence to a suitable level; water and food sanitation, discards and vectors, etc. environmental health works should be reviewed. And it is of the opinion that local government, public and village clinic teams should work together in a shared program in order to decrease traveler's diarrhea to its lowest level.

Prevalence of Foodborn Diseases and Intestinal Parasitic Infestations in Venice: 18 Months of Surveillance.

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From January 1996 until June 1997 a retrospective analysis of foodborn diseases (FBD) and intestinal parasitic infestation (IPI) was performed on patients admitted to the Emergency, Infectious Diseases Internal Medicine Departments of the Hospital of Venice. The survey was based on a questionnaire regarding the patients' symptoms, the time of their onset and the nature of the food consumed. Data from coprocultures, parasitologic, and hematologic exams were also analyzed.

Results: A total of 179 patients with FBD or IPI was observed. 124 patients (69%) were Italian (50 tourists, 70 Venetian residents), 55 were foreigners (36 tourists, 9 Venetian residents). Coprocultures and parasitological exams were performed on 117 patients, 71 (60.7%) of these were positive for enteric pathogens. Salmonella were isolated in 51 cases (71.8%). For 125 patients it was possible to identify the food source of the illness; most frequently the cause was uncooked or insufficiently cooked shellfish, eggs, cream or ice-cream. In the 4 cases of botulism, mushrooms preserved in oil was the contaminated food. The mean time of incubation was 12+/-3 hours for Salmonellosis and 4+/-1 hours in the cases of negative coprological exams, which were probably almost always caused by *S. aureus* toxins. The most frequent symptoms were diarrhea (90%), fever (80%), vomiting (60%). 18 patients (10%) needed treatment with quinolones.

Conclusion: 12,000,000 tourists come to Venice each year for a vacation lasting usually 1-3 days, they usually have their meals in restaurants, self services, pizzeria and pastry and ice-cream shops. The most frequent FBDs are still caused by minor Salmonella. Symptoms of FBDs usually begin while the tourist is still on vacation, resulting in complex practical and medical complications. IPIs usually occur in immigrant workers who return to Italy after a vacation in their homelands or are diagnosed in asymptomatic immigrants when the coprological exams necessary for the working permits are performed.

Ciguatera Poisoning: 4 Imported Cases.

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Since May 1993, we have diagnosed 4 cases of ciguatera poisoning, in Spanish women, imported from the Dominican Republic (2 cases), Colombia (1 case) and Senegal (1 case). The diagnosis was made by the characteristic gastrointestinal and neurological manifestations: diarrhea (100%), nausea/vomiting (75%), metallic taste (75%), dry mouth (50%), cold-to-hot temperature reversal dysesthesia (100%), paresthesias (100%), ataxia (75%), pruritus (50%), weakness (50%), myalgias (25%) and headache (25%). In one patient the symptoms were exacerbated by attempts to eat. Travelers are at risk of ciguatera poisoning after eating fish from endemic areas and should be advised about the risk associated with eating certain types of fish. Especially grouper, red snapper, barracuda and amber jack should be avoided, though errors in the naming of fish may make this problematic.

An Investigation on Bacterial Flora of Sea Bream, Red Mullet, Shrimp and Squid from Iskenderun Bay, Turkey.

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Turkey is one of the most important touristic countries in the world. The country has many aquatic products. Most are transported primarily to Istanbul and the other parts of Turkey. As most tourists consume these products, they must meet nutritional quality standards. In this investigation samples were captured from one of the most important fishing areas, Iskenderun Bay.

Bacterial flora of the muscle of 20 specimens of Sea Bream, Red Mullet, Shrimp and Squids were determined. Mean aerobic counts (APC) for Sea Bream, Red Mullet, and Squid were <102/g. APC for shrimp was 2.5 102/g. Faecal E. coli for sea bream and shrimp were 14/g and 23.5/g respectively. Staphylococcus sp. (plasma coagule -) S. albus) in red mullet and squid were the same (102/g). Plasma coagule (+) S. aureus in sea bream and shrimp were 78/g and 67/g respectively. No Salmonella sp. and Vibrio sp. were found in the samples.

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The Level of Specific IGG Antibodies in HIV Carriers after Vaccination of FSME-immun.

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It is generally accepted that the HIV carriers are susceptible for different infections. On the other hand these carriers are more imminent than others in endemic areas for some diseases e.g. tick borne encephalitis. Therefore we have decided to test these carriers how they react on FSME vaccination by measurement the IgG specific antibodies.

We have included 29 HIV carriers and 40 healthy persons. The vaccinations have been performed for the control groups according to the producer - Immun. Austria, e.g. 0, 1, 9 months. Because of the serious of immunodeficiency in carriers we included additional vaccination on month 2. Therefore the vaccination was on 0, 1, 2, 9 months.

No side-effects were noted in carriers. Only 44.8% of carriers exhibited specific IgG antibodies after vaccination whereas in controls 85%. More valuable information concern that even in these cases where IgG antibodies were produced their level was twofold lower than in controls. The carriers with CD4 lymphocytes in the range 200-400 exhibited lower specific IgG antibodies in comparison to carriers with CD4 lymphocytes over 500. The conclusion is that carriers should be accepted as a group with higher risk for infections in endemic areas and additional (fourth) vaccination FSME may be recommended.

One of the activities of the office for prevention of infectious diseases is to advise travelers about the prevention measures. In 1993 a project was planned for improving the quality of the activity concerning malaria counseling with the following objectives: 1) to increase the number of people who comply with the instructions for malaria chemoprophylaxis and other preventive measures, 2) to increase the efficiency of counseled preventive actions improving the risk/benefit ratio, 3) to study the actual incidence of adverse events of chemoprophylaxis, 4) to initiate a retrospective study in order to analyze the history of all cases of malaria occurring in travelers and notified to the office.

A protocol was defined with the following contents: 1) definition of malaria chemoprophylaxis, 2) inclusion and exclusion criteria for deciding who is counseled about taking chemoprophylaxis, 3) procedures to suggest for personal protection measures.

An instrument was implemented in order to verify the activity: all the people who come to the office are called up by phone two months after their travel and asked about compliance to chemo and mechanic prophylaxis and about adverse events occurred.

The indicators used for the evaluation of activity include the number of people counseled, the number of chemoprophylaxis proposed, the number of people compliant with counseling, the number of cases of malaria in people for whom no chemoprophylaxis was counseled, the number of adverse events.

The results of the activity of quality improvement will be discussed: the efficiency of the counseling regarding chemoprophylaxis was increased, the number of chemoprophylaxis treatments was diminished without any case of malaria in non-treated travelers. Not all cases of malaria reported to the Office had been to the Center for counseling prior to travel. Personal protection measures were not carefully used by one third of travelers. The way of informing travelers should be changed.

The Cuban Central Clinic "Cira Garcia" specialized in the attention of tourists, is carrying out a number of studies in order to determine the relationship between the infection caused by Helicobacter Pylori and gastrointestinal diseases in our patients, mainly in what pertains to ulcerouspeptic gastrointestinal disease.

From July 1995 to August 1997 endoscopic studies of the upper digestive tract were carried out for some 200 patients that showed a high digestive symptomatology. Some of them knew their pathology and others exhibited their symptom for first time during their stay in our country.

Helicobacter Pylori was present in 47 of the 52 patients (90,3%) with duodenal ulcer and associated gastritis. From 4 patients with ulcer without associated pathology the germ was isolated in 50% of the cases (2 patients).

Non atrophic gastritis in its different histopathologic ranges was diagnosed in 54 patients, in 46 of which H. Pylori was present for a 85,18%.

In 38 patients with no ulcerous dispepsia the H. Pylori was only isolated in two patients (5,26%). An analysis between the native country of the patients and the presence of H. Pylori was carried out.

Finally, we consider that there is evidence of a relationship between H. Pylori and ulceropeptic gastroduodenal pathology, but it is necessary to continue studying the issue.

Population movement is recognized as a major factor in the emergence and spread of infectious diseases. Population movement can take many forms, ranging from mass migrations by immigrants and refugees to military deployments to international leisure travel. In an increasingly mobile world, travel becomes an increasingly significant factor in disease emergence. Among the reasons are (1) newly recognized diseases often arise in areas of heavy tourism (2) travelers may visit areas which have a different spectrum of disease than their homeland and may introduce pathogens upon return (3) persons often engage in behaviors that place them at higher risk of exposure to emerging diseases while traveling (4) socially disrupted settings foster the spread of infectious agents.

The recent recognition of influenza A(H5N1) [avian influenza] in Hong Kong is an example of an emerging infection in an area of heavy tourism. Although this virus has been recognized to cause illness in poultry for decades, the Hong Kong cases are the first documented among humans. Travelers to and from Hong Kong represent a major potential vector for movement of this virus to other parts of the world. Other recent examples of emerging diseases in areas of heavy tourism are dengue fever in the Caribbean and Pacific, hantavirus pulmonary syndrome in the Andean foothills of Argentina and Chile, Rift Valley fever in Egypt, and measles in Rio de Janeiro.

Drug resistant malaria, dengue fever, yellow fever, cholera, and legionnaires disease are all recent examples of infectious agents which produced illnesses in tourists after they returned home. Among adventure travelers, schistosomiasis and leptospirosis have recently produced recognized outbreaks. Even the recognition of increased numbers of cases of monkeypox in central DR Congo could be of concern to persons engaged in extreme travel. HIV remains a major issue for persons engaged in sex tourism. Outbreaks of drug-resistant shigellosis, scrub typhus, varicella, and cholera have been recognized in recent refugee crises.

Travelers must have access to up-to-date information to assess risks and take precautionary measures. Public health officials should also prioritize surveillance efforts in travelers because of their pivotal role as early sentinels for emerging diseases and their subsequent spread. A number of efforts are underway to meet these needs.

Emerging infectious diseases are those whose incidence in humans has increased during the last two decades or which threatens to increase in the near future. The term also refers to newly appearing infectious diseases, or diseases that are spreading to new geographical areas. For Europe, in particular eastern Europe, the emergence of infectious diseases is of great importance.

The AIDS epidemic shows a great variation in Europe, with the majority of all cases reported from western European countries. Recently, several outbreaks of HIV infections among drug users occurred in Ukraine, Russia, Belarus, and the increasing rate of sexual HIV transmission in those countries is alarming as well. Additionally, a dramatic upsurge of other sexually transmitted diseases, mainly syphilis, has been reported from many countries of the former USSR.

Since 1990, a huge diphtheria epidemic affects the newly independent states of the former USSR accounting up to now for a total of more than 170 000 cases and more than 4000 deaths representing more than 90% of diphtheria cases reported worldwide from 1990 to 1996.

In many of the countries in the eastern part of the Region, incidence and mortality due to tuberculosis is increasing. The downward trend of tuberculosis incidence in western Europe has levelled off owing to TB cases in immigrant populations.

In Europe, endemic malaria was a nearly forgotten disease in the 1980s. But the number of registered cases has exploded in recent years in Turkey, Tajikistan, Azerbaijan, and there is a real threat for their neighboring countries.

In 1996, a large outbreak of poliomyelitis occurred in Albania resulting also in additional cases in Greece and the Kosovo province of Yugoslavia.

Resistance by infectious agents to antimicrobial drugs is a major public health problem worldwide. The high multi-drug-resistance of *M.tuberculosis* in Russia (7%) and Lithuania (22%) may be used as an example.

Reasons for the re-emergence of diseases are the breakdown of the Soviet Union and the political and economical changes in eastern Europe. In many of these countries, sanitary-epidemiological health services deteriorated, and immunization and disease control programmes were interrupted. Although major outbreaks to date have been confined mainly to central and eastern Europe and particularly the newly independent states of the former USSR, importation of diphtheria, syphilis, gonorrhoea to western Europe and other parts of the world has occurred. Between 40% and 50% of new tuberculosis cases in many western European countries have occurred in migrant populations. New animal diseases pose potential food-borne risks to human health that are sometimes difficult to evaluate or predict. An example that is causing much public concern in Europe is the "mad cow disease".

What is needed? A comprehensive surveillance and control strategy to be implemented immediately across Europe as urgently requested by the Member States of the World Health Organization (WHO) European Region. The Regional Office for Europe has shown to be ready to work closely together with all countries, governmental and non-governmental organizations.

Beginning in November 1997, East Africa experienced the largest recorded epidemic of Rift Valley fever (RVF). The outbreak was triggered by exceptionally heavy rainfall and flooding that began in late October 1997 and continued through January 1998. These conditions were favorable for hatching virus-infected floodwater *Aedes* mosquito eggs that persist throughout the region during arid conditions. Domestic livestock serve as the amplifying host and infect multiple species of mosquitoes that then transmit the virus to man other animals. Humans can also be infected through contact with blood or fluids from infected animals. During epizootics (epidemics in animals), the virus causes abortions in pregnant animals and deaths in young animals. In humans, the virus produces a usually nonfatal dengue-like illness. Less frequently, infection results in retinitis, encephalitis and haemorrhagic disease.

In mid-December 1997, reports of an outbreak of a fatal, hemorrhagic fever were received from the Northeastern Province, Kenya and southern Somalia. An investigation, coordinated by the World Health Organization (WHO), and involving the Kenyan Government, international agencies, non-governmental organizations and WHO Collaborating Centres began on 24 December and is ongoing. Reports of cases of acute fever with at least one sign of haemorrhage (HF) and characteristic disease in livestock indicated that infections were widely distributed throughout Kenya, southern Somalia and in northern Tanzania. As many as 500 deaths are estimated to have occurred and cross-sectional studies are being conducted to determine the total number of infections.

In a preliminary analysis of 91 HF cases, data for 87 subjects indicated that ages ranged from 2 to 85 years (mean=30, SD=16), and 62% were male. Of HF cases, 93% reported headache, 84% vomiting and 82% reported GI bleeding. Of 50 cases tested, 21 (42%) had evidence of recent RVF virus infection (positive anti-RVF virus IgM, virus culture, and/or PCR). Testing has excluded other viral causes of HF and extensive investigations are underway to identify other etiologies for the HF cases being reported.

WHO has not recommended any travel restrictions in connection with the RVF epidemic. Although infections are widespread throughout Kenya and the disease boundaries of the epidemic are not well defined, individuals at highest risk for being infected are those who work with or live in close proximity to livestock and are frequently bitten by mosquitos. Travellers to Kenya should take the usual precautions to avoid insect bites that transmit discases such as malaria (wearing long trousers and long-sleeved shirts, using mosquito repellants and bednets) and avoid contact with animal blood or sick animals. Viral epidemics understandably generate concern among prospective travelers. WHO'S access to disease data and facilities for rapid dissemination, make it a reliable source for current health information.

Hepatitis A is the most common vaccine-preventable disease among international travelers from industrialized countries. In developing countries, particularly in parts of Africa, Asia, and Latin America, HAV usually causes clinically-inapparent infection in childhood, and nearly all adults are immune. In contrast, most young adults in industrialized countries are susceptible to hepatitis A and, when infection occurs, it is often icteric, occasionally associated with severe morbidity, and may lead to fatal acute liver failure. In Europe and the United States, a significant proportion of reported cases of hepatitis A is associated with travel, and available studies suggest that the risk is between 3 and 20 cases per 1000 travelers per month. Because hepatitis A is spread by the fecal-oral route, avoidance of adventurous eating styles in developing countries may reduce risk. Nonetheless, travelers may even contract hepatitis A in luxury hotels and expensive restaurants. Prevention therefore rests upon adequate pre-travel immunization, either active or passive.

Several inactivated hepatitis A vaccines are available; they are safe, highly immunogenic, and effective in field trials. Anti-HAV antibodies appear as early as two weeks after immunization of most adults, and a single booster produces long-lasting immunity. Immune serum globulin (IG) is also highly effective but should be reserved for short-term travelers whose departure date is imminent. IG given simultaneously with HAV vaccine may slightly lower the immune response to vaccine but provides immediate and long-lasting protection. Screening older adults for anti-HAV antibody prior to travel may be cost effective in some settings. Protection of travelers against hepatitis A is now widely recommended and should be a high priority.

Hepatitis B virus (HBV) is transmitted by the blood and body fluids of infected individuals which enter an uninfected individual through skin lesions and via mucosal membranes.

The modes of transmission with epidemiological relevance for travellers are unsafe sexual contacts and voluntary or accidental events such as medical intervention with non-sterile equipment, i.v. drug use or unsafe "medical" practices (tattooing, body piercing, health cures by injection etc.). The characteristics of travellers who get HBV infections have changed in the past years and will change in the future. The main reasons are the growing knowledge and compliance of preventive hygienic measures of travellers and the implementation of universal vaccination against Hepatitis B in many countries since 1991.

Comparisons of HBV infections between countries are difficult since the reporting systems on the incidence of acute hepatitis B and on the prevalence of HBV markers differs widely. Little information is available concerning implicated travellers. Therefore some of the following statements rather reflect hypotheses than documented facts.

In terms of sexual transmission, Eastern Europe is now becoming increasingly popular for heterosexual and homosexual prostitution. Unfortunately of late, some of these areas have also become high incidence countries for HBV (and also for HIV). Conversely, in South-eastern countries where sex tourism is well established, great efforts have been undertaken to make safe sex popular and to implement hepatitis B vaccination. The epidemiological impact by these changes has not yet been established.

There are also relevant changes of HBV epidemiology amongst i.v. drug users. In some countries the incidence of HBV infection drops due to abundant distribution of sterile injection material while this is not the case in other countries. In some countries the epidemics of i.v. drug use is fading, in others it is still growing. It is therefore a risky activity for travellers who try i.v. drugs as an adventure.

HBV infections could theoretically be omitted by hygienic measures alone, e.g. by using safe sex practices and by renouncing i.v. drug use etc. However it would be naive to think that hygienic measures could ever be fully implemented taking into account human nature. This issue also concerns travellers for business or leisure.

The goal must be to vaccinate against hepatitis B the largest proportion of the world population possible. The implementation of universal vaccination of infants and adolescents is on the way. However it will take many years to see the benefits. Instant results depend on the coverage of vaccinated individuals in the age groups with the highest incidence of infections which is between 15 and 30 years in most countries of the industrialised world. However, these age groups are not the main targets for on-going vaccination programs.

Analyses have shown that vaccination against hepatitis B e.g. for Swiss travellers would not be cost beneficial. This is probably true for most of the industrialised countries. This explains why vaccination of travellers is not or is only partly taken care of by paid governmental programs or by health insurance. In countries where the cost for hepatitis vaccines for travellers is not reimbursed, the traveller should be in a position to make an informed choice on whether or not to invest privately in the vaccination. To do this, they need access to information on the disease, risk behaviours/events and the benefits of prophylactic vaccination. In this respect further efforts are needed.

Travellers are even more implicated in the epidemiology of HAV than of HBV, at least concerning individuals living in countries with a high hygienic standard and travelling to areas with a low such standard. The popular advice given to such travellers to avoid HAV infections by hygienic measures alone are well intentioned but of little effect. Therefore travellers to areas of high endemicity should be strongly advised to get vaccinated by a hepatitis A vaccine or by a combined hepatitis A and B vaccine.

Blood transfusion is an integral part of modern medicine. Transfusions are performed across the world and importantly it must be remembered that blood transfusion does save lives. However, like most other clinical interventions it does have some degree of risk associated with it. The transmission of infectious agents is clearly one of those risks, and one of the main focuses of transfusion services is to ensure that the blood supply is as "microbiologically" safe as possible. Unfortunately not all countries have well structured healthcare systems with good blood transfusion facilities, and blood is still collected under unsafe conditions and may be transfused untested in certain situations. The reasons for this are varied but invariably centre around the lack of resources; lack of donors, lack of test kits, no stocks of tested blood, and no time to test before the blood is required and used. Of the approximately 100×10^6 donations collected in the world per year, only a small number are likely to present a significant risk to the recipient, nonetheless it is clearly essential that all risks are minimised and globally the blood supply is as safe as possible.

One of the major global threats to blood safety is hepatitis B virus. This virus is endemic in many parts of the world and transmitted very effectively by blood transfusion; it is stable in single donor blood and blood products, although the modern fractionation methods used in the production of large pool products do effectively inactivate it. Unfortunately many of the endemic areas in the world are also those whose countries have relatively poorly developed healthcare systems, and thus generally have poor blood transfusion facilities and standards. The provision of a safe blood supply generally relies upon two specific activities; donor selection and donation screening. Donor selection is performed to identify "low-risk" donors, i.e. donors who have no clearly identifiable risk associations and are highly unlikely to have been exposed to transmissible infectious agents. Donation screening is performed to identify donations that show specific evidence of the presence of particular infectious agents. Unfortunately in some countries both procedures may either not be applied, or not applied effectively. Donor selection is generally performed in most countries although the criteria may vary a lot. Laboratory screening is not always performed, and even when it is, its quality can also vary significantly. Thus even in a country with a transfusion system and which selects donors and screens the blood, the safety of the blood supply cannot be assured; some donations may have been screened and others may have not. Paradoxically this may not necessarily lead to an increased risk of HBV in indigenous patients undergoing transfusions as there is a high probability that they had already been infected naturally, but any foreigners from non-endemic areas receiving blood may face a higher risk of post-transfusion HBV infection.

In addition to the risk from the transfused blood itself, there is also the risk of transmission of infection through the process of transfusion or other medical interventions carried out at the same time; in some countries this may be a significant route of infection. Although today the apparatus used to transfuse the blood, the "giving sets", are generally disposable, "disposable" equipment is often re-used in many countries. In addition, older style "giving sets" which are designed to be re-used are still found in some countries; the problem arises from the inability to ensure that the equipment is sterile before re-use. Very often the modern disposable sets cannot be sterilised after use by conventional hospital means, and the re-usable sets are themselves often not sterilised properly. In these situations there is the risk of cross-contamination from one patient to another via these "giving sets". The same issue of cross-contamination applies to all other invasive equipment re-used between patients.

Although the prospect of a serious accident whilst travelling is not something that most people want to think about, as more people travel to far-off places where healthcare facilities in general are poor,

it is important that any precautions that can be taken are indeed taken. In the case of HBV a very effective vaccine is available, and is a significant safeguard against HBV transmission, not only through medical intervention, but also by any other route.

In conclusion, although there are some risks associated with blood transfusions, it is important to put those risks into perspective; all drugs have some risk associated with them and should only be used when necessary, most people do not need a transfusion during their lifetime, and importantly blood transfusion saves lives.

Besides the monovalent hepatitis A and hepatitis B vaccines, which proved to be safe and effective, a combined hepatitis A and B vaccine has been developed recently by SmithKline Beecham Biologicals (Rixensart, Belgium). It offers more convenience, dual protection and potentially better compliance to those still susceptible for hepatitis A and B infections. This new combined vaccine (Twinrix™) is registered in most countries of Western Europe, in Canada and in Australia. This combined hepatitis A and B vaccine, contains in its adult formulation 720 Elisa Units of hepatitis A antigen and 20 mcgr of hepatitis B surface antigen adsorbed on to aluminium salts in a total volume of 1 ml. Immunogenicity data show an anti-HAV seroconversion rate of 94% (≥ 33 mIU/ml anti-HAV titre) at month 1, At month 7, one month after the booster dose (schedule 0, 1, 6) 100% seropositivity was obtained, with a GMT of 5,404 mIU/ml.

With regard to the anti-HBs titers, immunogenicity data show 34%, 84% and 97% seroprotective titers at month 1, 2 and 6, respectively. The anti-HBs GMT increased from 62 mIU/ml at month 2 to 4,814 mIU/ml at month 7. The immune response elicited by this combined vaccine compares well with the anti-HAV anti-HBs seroresponses and GMTs reached after administration of monovalent hepatitis A and hepatitis B vaccine alone. Persistence data of anti-HAV and anti-HBs (month 24, 36 and 48) with the combined vaccine show similar results compared to those reported for monovalent constituents. In addition, the combined hepatitis A and B vaccine proves to be consistently safe and well tolerated.

Trials were also conducted in children (aged 1 to 15 years), with a paediatric formulation of this combined vaccine (360 EI.U. of hepatitis A antigen, 10 mcgr of HBsAg). These studies confirm the safety and immunogenicity data in younger subjects.

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Typhoid and Combinations: solving the problems together
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Abstract not received

An assessment within the framework of the Mediterranean Action Plan was made on the basis of MED POL monitoring data collected from the beginning of MED POL Phase II. The assessment covers the Mediterranean countries divided into two groups. The first group includes those countries of the European Union that have to comply with the European Commission Directive for Bathing Waters while the remaining countries were included into the second group of countries that have to comply with the Interim Environmental Quality Criteria for Bathing Waters adopted by the Contracting Parties to the Barcelona Convention in 1985.

In evaluating the data, stations were classified as satisfactory (i.e. complying fully with the interim criteria) only if they satisfied the three requirements: frequency (at least 10 samples in one year), FC50 (50% of the samples not exceeding 100 fecal coliforms per 100 ml, and FC90 (90% of the samples not exceeding 1,000 coliforms per 100 ml. Data for 1993 and 1994 were not evaluated as, in each case, those available were limited to two countries.

An evaluation of the compliance of bathing beaches in France, Greece, Italy and Spain with the mandatory values of the microbiological parameters of the 1976 Directive for the period 1988 to 1994 shows that, in general, a definite positive trend emerged over this seven year period.

Tourist Health Depends on the Quality of Bathing Beaches

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Problems associated with the aesthetic quality of recreational waters and bathing beaches have been emphasized in recent W.H.O. and U.N.E.P. reports. They reflect increasing concern about our "throwaway society", the currently unstable relation between population, health, and a sustainable environmental, aesthetic, physical injury and microbial problems of uncollected refuse and discarded litter, the mixing of domestic, general and clinical waste and fears that environmental degradation of bathing beaches could lead to loss of income from tourism. Healthcare waste in particular, is "becoming an important environmental health issue worldwide". The W.H.O. European Charter on Environment and Health, 1989, reported too, that: "good health and well-being require a clean and harmonious environment in which physical, psychological, social and aesthetic factors are all given their due importance". Accordingly, in 1990, the Third International Conference on Tourist Health, in Rimini, Italy, recommended that: "to supplement recreational water quality standards, a set of health indicators should be developed to help appraise the quality of bathing beaches and the effectiveness of cleansing operations". Follow-up work with the W.H.O. will be presented. The method and findings will be given of the annual Coastwatch UK studies since 1991 for time trends of the annual rate of different litter, sanitary and medical waste items. Some 6000 fieldworkers are involved. A health economics audit of needlestick injury data from bathing beaches will also be presented. We have concluded that provision of litter bins, regular refuse collections and beach cleansing is insufficient. A greater sense of personal responsibility and individual accountability is needed as is improved understanding of what determines our human environmental values.

The Comparative analysis of the touristic flow and the international mega-events shows that the tourism doesn't avoid the war among the nations.

The tourism is not an active peacemaker in the international relationships.

The peace is negotiated by the institutional organisms and above all by the Foreign Offices.

The tourism along with the promotion of the local economy, intensifies the peace after the end of the war and it is just for this reason that the international terrorism hits the tourists and changes the amusing-cultural places from tophilic into topophobic ones.

In this context, the tourism is incompatible with the war. The war places may become a touristic attractive in peace-time and a source for travellers' homesickness. The site of the battle acquires the scientific status of the play and the tourists, for fun, change the peace-place from topophobic into tophilic, by consumption activity.

Climate is part of the environment to which the human organism must adjust if he is to remain in good health. Healthy persons can adapt to different atmospheric conditions to an extraordinary degree. Adaptation permits to people to live, not always very comfortable, even in such extreme climates as hot and humid tropics, ice-cold polar regions, scorching deserts and at high altitudes. But even the zones of temperate climate require some adaptation, which mostly goes unnoticed. The adaptability of sensitive, elderly and sick persons, pregnant women and children is, however, more likely to be overtaxed.

Human beings comfort is primarily determined by the thermal environment. Extremes of temperature can cause physiological disturbance and organ damage, leading to illness or death. There are a lot of epidemiological studies on the impact of these extreme conditions (heat, cold, air pollution) on morbidity and mortality.

The urban-rural difference in temperature is already now of the same order as the effect of the global climate change expected for the next century. Concerning climate change it is difficult to predict the effect of temperature increases on man health. There are not only direct effects, such as excess deaths or cataracts, but also indirect effects, such as changes in the development and distribution of vectors, for example malaria. However, there is no question that increased heat stress in many urban areas could claim many more lives than at present.

The extent of heat-related mortality varies according to geography. Mortality data for many cities in temperate regions, where hot weather is severe but infrequent, show sharp rise in total mortality during unusually hot weather conditions. Duration of heat stress is also a critical determinant of thermoregulatory failure.

A watch/warning system for heat was instituted for the summer in Philadelphia and some other cities in USA. The system is based on the predicted arrival of "offensive air masses" historically associated with elevated mortality levels. The health impact of hot weather has been studied predominantly in relation to the most serious health outcome, i.e. death. A major reason for this is that mortality data sets are readily available. Because of diversity of causes of death, the number of heat-related deaths is considered to be the number of deaths occurring in excess of the number that would have been expected for that population in the absence of heat wave. Time-series analyses have been used to analyse daily weather characteristics in relation to daily mortality, and applied widely to establish associations between these variables.

Possibilities to apply such watch/warning systems in major cities in south Europe will be presented. Another field of human bioclimatology deals with tourism, vacation, leisure time and sports. Information on heat load conditions in summer and cold stress conditions in winter is necessary for people to compare climates in space and time in order to choose the climate of preference. For this purpose bioclimatic maps are very useful.

Tourists have the right to information on the risks they may encounter at the destination. Information on health risks and on the preventive measures is readily available to tourists through various national and international bodies.

However information on tourist exposure to violence and protection against it offered at various destinations is rare and unreliable. Tourists have the right to such information so that they may make an informed decision along their perception of acceptable risk in selecting their destination.

Since tourism has become an international affair and tourist safety and security an international requirement, information relating to the risks of violence and the protection from it is the responsibility of international bodies and national authorities concerned, tourist operators and tourist agencies. The question arises whether those who do not meet this tourist right for information and for protection should be allowed to participate in international tourist trade.

Safety and security is a delicate matter for which precise criteria and standards do not yet exist, as far as the risks of violence, terrorism, and war are concerned.

Methods for risk assessment are being developed and considerable experience on preventive measures exists. Therefore it seems that the essential prerequisites exist for proposing a set of requirements for the safety and security of tourists against violence, which tourist receiving countries should meet in order to qualify for participation in international tourist trade.

The travel and tourism industry is especially susceptible and vulnerable to crisis, especially to a war. The touristic activities during the war cease usually, and often are unable to rebound as quickly as other business, demanding prolonged recovery, much of a destination's attractions is derived from its image.

Crisis management is a new field of research that addresses the problems of dealing with crisis, and the stress that accompanies crisis. Crisis management involves efforts to prevent crisis from occurring, to prepare for a better protection against the impact of a crisis agent, to make for an effective response to an actual crisis and to provide plans and resources for recovery and rehabilitation in the aftermath of a crisis. Crises, health care and tourism from the management point of view have to be considered in strong connection. Regardless of the unpleasantness of the topic, management has to acknowledge that crises have to be part of their daily operations. Given the interdependence between crises health care and tourism it is not possible to consider crisis management interests separate from the whole environment. The fundamental elements of crisis management are: education of managers to deal with the challenges posed by a potential crisis, proper advance planning priorities means and policies needed to reduce the negative impacts in times of security unrest, and provide management tools to ensure controlled and sensible health care and tourism development, as well as rapid transition from crises management to long terms viable development in peaceful period.

The paper will discuss the Croatian 1991-1995 war and its consequences for the Croatian health care system and tourism, as well as their recovery.

Physical conditions and precautions in air travel, scuba-diving, trekking and high altitude mountain climbing.

Air travel: Baro-medical aspects are often not mentioned in medical advice for travelers although most tourists travel by air. Especially pulmonary, cardiac and vascular conditions have to be considered because the average tourist is getting older and prefers to go to distant countries. Patients with severe health problems while traveling frequently have cardio-vascular and pulmonary problems. Medical examination and advice should be more specific.

Scuba diving: Diving activities are increasingly important. National or international regulations are missing. Scuba diving is often practiced without or after poor medical examination. Diving accidents are often the result of lack of precautions.

Trekking and Alpine sports: Trekking and high mountain climbing is a modern adventure. Accidents are often caused by insufficient pretravel medical examination, misinterpretation of symptoms and poor treatment. The most important problems are Acute Mountain Sickness, High Altitude Pulmonary Edema and High Altitude Cerebral Edema.

The kidnapping of US Ambassador C. Burke Elbrick in Rio de Janeiro in 1969 signaled a turning point in, first, US policy concerning how to deal with terrorists and, second, in the role of security planning for protection of executives overseas in both public and private sectors. The US Government announced a firm policy of refusing to negotiate or make deals with terrorists in kidnap or hostage situations. While this policy masked a number of behind-the-scenes compromises and trade-offs in freeing hostages, it also had the effect of thrusting negotiations over private executive kidnap victims into the hands of private security groups.

Multi-national corporations and private security firms, often affiliated with major providers of kidnap and ransom (K&R) insurance, developed a series of comprehensive security plans to protect traveling and foreign resident executives – both in the area of health and safety. These plans evolved as Crisis Management Plans (CMP). The four key elements of an effective CMP are:

1. Threat analysis and advance notice of possible problems from terrorism, crime and disease;
2. Planning for crisis so that a traveler's documents relating to medical conditions and health, medical evacuation insurance, business and personal affairs are in order in the event of injury or mishap;
3. A plan of action for a company, church group or family when one of their people has fallen ill or been injured, been arrested or kidnapped or been affected by some other crisis – flood, earth quake or political upheaval;
4. Instructions to individual travelers as to how to maintain a low profile on a trip, how to avoid troublesome situations and what they should (and should not) carry to avoid travel hazards in the air and on the ground.

Examples will be drawn from the speaker's experience as a member of the Embassy Response Team to the kidnapping of Ambassador Elbrick and from more recent incidents, including one in which his business partner was held hostage on the Pan Am flight taken over by terrorists in Karachi.

Air travel is currently known as one of the safest ways of travel. However, the large expansion of travellers number and its repercussion on the aboard conditions augment the in-flight diseases. Among these, pulmonary embolism (PE) remains one of the most frequent emergencies, as shown by the increase in papers and by the Paris Airport Medical Service experience: in fact, since 1990, 46 PE (including 43 since 1993) have been diagnosed in Orly and Roissy (which one can associate deaths probably caused by PE). Studying these cases (flight duration, previous medical history, landing schedule, treatment...) and the literature data, the authors try to determine the risks factors and the better management and prevention of this pathology, including general measures and medications, to lead to a safer air transport.

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Vaccines Against Diarrhoeal diseases
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Abstract not received

Abstract not received

Tick-borne encephalitis (TBE) virus is one of the major human pathogenic flaviviruses, causing thousands of cases of severe neurological disease per year. It represents a significant public-health problem in endemic areas such as Southern and Eastern Germany, Austria, Switzerland, Slovenia, Croatia, Hungary, the Czech Republic, Slovakia, Poland, and the whole of Russia. TBE represents a particular risk for travelers from America, Australia and Japan where the vaccine is not available. Tourists from those countries, planning to spend their holidays in natural environment expose themselves to a high risk of being bitten by a common wood tick (*Ixodes ricinus*) of which every 20th to every 500th is infected with TBE virus. The activity of ticks is seasonally determined. They are at their most active in the period April-July. However, after long, hot, humid summers the number of ticks rises again in September and October. Humans pick up the ticks through contact with infested undergrowth and grasses.

The clinical picture of TBE is usually biphasic. After an incubation period of 5-14 days the first signs of disease appear in the form of influenza-like symptoms such as fever, headache and rheumatic pain. In one fifth of these cases a second phase is manifested, involving inflammation of the central nervous system.

There is no causal therapy for TBE. The only way to effectively prevent the disease is by means of vaccination. With the advent of the new Chiron Behring TBE vaccine (Encapur) large-scale multicentric studies were conducted to determine the most effective schedule of vaccination. In contrast to the conventional scheme of three doses at days 0, 28 and 300, the abbreviated one on days 0, 7, 21 showed a much more rapid induction of specific antibody. Even better results (100% of seroconversion on day 7 by the NT test, and 92% by ELISA) have been achieved by the extremely short 0,0,7 schedule in which two doses of vaccine are given bilaterally on day 0 and one on day 7. The use of these short schedules probably eliminates the necessity to use human TBE immunoglobulin in post-exposure treatment. Two years of experience in TBE immunization with short schedules have not resulted in a single reported treatment failure.

A survey will be carried out in January 1998 among 500 people on attitudes to travel vaccinations. Questions asked will attempt to uncover the reasons why people complete/do not complete/do not commence vaccination courses when required, and to establish underlying vaccination phobias and concerns.

It is anticipated that the results of the survey will show that people prefer to undergo fewer injections if given a choice and that support for multivalent vaccinations is high and would likely lead to increased compliance and therefore decrease the incidence of travel-related disease. The survey is expected to highlight the large proportion of travelers who forgo vaccination (due to fear or ignorance), thereby putting themselves and those with whom they come into contact with on return at risk of disease. It is expected that several behavioral or psychological factors, e.g. number of injections required, may determine whether people take up recommended vaccinations.

In the year of 2000, the city of Rome will host the Jubilee, a general indulgence granted by the Pope, formerly every fifty years but later every twenty-five years and on other special occasions, to pilgrims visiting the four most important basilicas of Rome, or in some cases churches elsewhere. It is estimated that in 2000 over 20 million pilgrims will come to Rome from all over the world for the Jubilee. Other places in Italy, for instance Padua, Loreto and Assisi, with churches or shrines of particular religious importance will also attract more pilgrims than usual, and holidays and tours with religion as their dominant theme are being planned throughout Italy.

The arrival of so many persons in such a short space of time will require significant efforts to be made in the organization of public health and hygiene and medical assistance services.

Actions in the field of public health must address themes like drinking water, waste disposal, prevention and control of infections and epidemics, monitoring of microbiological standards of bathing waters and the cleanliness of beach sand, and the prevention of accidents.

In the field of preventive medicine, leaflets giving information and health instructions for travellers will be distributed, with the aim of promoting conduct that can prevent illnesses and accidents.

Steps to provide adequate medical assistance will involve the reinforcement of medical personnel in the hospitals of Rome and other pilgrim destinations, the creation of medical surgeries throughout the territory, and the organization of services for the treatment of urgent and emergency cases.

In October 1999 a major international conference will be held in Loreto, focusing primarily on medical aspects of pilgrimages but also analyzing their historical, anthropological and religious significance.

The conference will be an opportunity for medical personnel involved in the Jubilee to update their knowledge, and will deal with all the technical and organizational aspects of assistance to pilgrims, including assistance for children, the chronically sick and psychiatric cases, treatment for medical emergencies, the organization of surgery services, the control of infectious diseases and other aspects of public health.

THE LORETO CONFERENCE MUST BRING TOGETHER HOST COUNTRIES AND INVOLVE THEM IN DISCUSSION ON THE MEASURES TO BE ADOPTED FOR THE PREVENTION OF TRAVEL DISEASES AND ACCIDENTS.

It will also be an occasion to inform the world media on the action to be taken by Italy and in particular by the Marche Region to cope with the problems posed by the Jubilee.

Tourism, population migration, importation of foreign workers and pilgrimage have increased beyond expectation during the second half of this century.

World tourism, which had been the privilege of the affluent minority, today embraces a much larger section of the population. In Israel for example, it is common for young adults to travel extensively to remote and developing areas immediately after completing their military service. These young tourists who are generally not well-off, travel in poor conditions and stay with the local population. Consequently, they are sensitive targets for the common endemic causes of disease.

Immigration of workers from the poorer developing countries to the industrialized ones is increasing. Often these immigrants carry parasites and disease agents into their new environments.

Many parasites and disease factors are spread in Africa by movement of large numbers of starving war refugees. Death rates are consequently very high, especially among children. Worldwide, the number of refugees is estimated to exceed 10 million. These are the most vulnerable of all people. They are in a poor health condition already when they leave their homes. They then often find themselves in overcrowded camps, where food, water, and sanitary conditions are lacking, and so their liability to infection increases.

Adverse health outcomes related to tourism can be related to various factors. These can be at the individual or at the population level, during the pre-travel period, or with many destination-specific issues. A case study demonstrating the multifaceted approach to tourist health risk management is presented. Beach-related morbidity analyzed from 2 studies on the Victorian coast demonstrates this principle. Cause of morbidity, demographic data, and service provision are presented. Issues discussed:

1. Individual management; such as awareness, preparation, behaviors.
2. Population management; such as foreshore management, local government development, health service provision.
3. Pre-travel factors; such as education skills
4. Destination factors; such as the environment both natural and manmade.
Results of the studies have influenced a number of related bodies.
 1. Foreshore management committee. Attention has been paid to the maintenance and design of walkways, litter collection and signposting of beach related risks.
 2. Local Government Public Health Plan. Support was given to the above body and consideration was given to coastal developments which would alter each usage patterns.
 3. Department of Natural Resources. Consideration of projects altering beach access, design of manmade structures and consideration of foreshore vegetation.
 4. Surf Life Saving Association. Review of the training of guards and manpower issues.
 5. Coastal Management Board. Consideration of safety in coastal planning.

The Rijeka region occupies the northern part of the Adriatic coast and is one of the significant tourist regions of Croatia. The majority of foreign tourists in hotels and in transit arrive from neighboring countries. Between 1987-1995, medical assistance was provided to 1684 tourists from Italy. Fifty-six percent were women. Medical care was provided to outpatients in 87% and in a hospital in 13%. Hospitalization lasted 8 days on the average. The most prevalent were traffic injuries and injuries while playing water sports (20%) followed by diseases of the circulatory system (14%), nervous and respiratory systems (8%), gastrointestinal and musculo-skeletal systems (7% and 5% respectively). Infectious and parasitic diseases were found in only 2%. Medical vehicles were rarely used during repatriation due to the vicinity of the tourist's own country. Medical care was most frequently required from June to September. The results of this study show that, among tourists, there is a rise in the number of persons with increased health risk, that demands better, more efficient health care in the tourist region.

Lombok, an island east of Bali has become popular for tourism. The main problem is the high incidence and prevalence of communicable diseases, including malaria.

Integrated health services with intense community participation passively identifies malaria cases. Treatment of all clinical cases followed by surveillance are done by all Health Centers. Surveys to detect resistant parasites revealed that although it is not a major problem, resistance against standard drugs becomes more frequent.

A referral system has been set up and a special Health service with good language proficiency medical personnel is available 24 hours a day 7 days a week. IEC materials cover the major diseases has been developed and is distributed to all hotels under the coordination of the Tourism Bureau.

SARSANTA (Tourism Sanitation Facilities) have been built with community participation. On one side it will make tourist more comfortable and on the other side it will also act as a Health Education device for local people. With the above activities together with other programs from other sectors, tourism has increased significantly on Lombok island.

Many studies of illnesses during travel were done to assess the adverse health effects of travel. Only few studies considered the positive health aspects of travel. The Emporiatric Association, which aims to promote the health of people through travel, conducted research by measuring the effects of international trips on physical and mental health. This communication presents the general set of problems, the operational hypothesis and methodology of the study.

We will consider 1) our research protocol, which is based on 3 questionnaires asking the travelers about their health state before departure, during their stay, and two weeks after return from the journey, and 2) the battery of indicators, which was constructed, concerning the perception of their health state, the experience during their journey, the representations and practices concerning their health during traveling, the way of life and socio-demographic characteristics.

The tourism industry is one of the most dynamic markets with a growing mobility of people and with an increasing political and economical importance. Some 617 million tourists worldwide travelled to foreign countries, spending almost US\$ 450 billion in 1997, according to sources of the World Tourism Organization (WTO). There is nearly no region any more where tourism doesn't arise.

This enormous mobility has inevitably a great impact on health for tourists as well as on employees in the visited countries, who work in the tourist industry. This bears challenges and risks both for clients and local residents.

There is a high relevance to develop key strategies for a healthy tourism policy. We have to give answers to specific issues on health promotion and health development in the tourism sector.

While a tremendous and increasing number of tourists travel to developing countries (Africa for instance is the fastest growing tourism destination), where people are confronted with strong social and economical disparities, succeeding health promotion strategies will only be realised if these countries can take part on a national, regional or local level. Equal participation is essential to sustain efforts and is a key to create a great health gain for people in order to avoid inequities in health.

New forms of action are needed. Therefore, functioning, learning and growing networks for all participants are unalterable. WHO is ready to tackle the realization of healthy tourism networking jointly with the World Tourist organisation (WTO). Partnerships with all relevant institutions and groups will offer mutual benefit for health through sharing of expertise, skills and resources.

There has never been a better time for the development of a healthy tourism network:

- All relevant and functioning worldwide settings, e.g. Healthy Cities and Healthy Islands, have a great affinity and similarity with the tourism sector in defining problems and searching for answers. They offer adoptable strategies and options to take action.
- Other programmes like Ageing and Health and Active Living deal with appropriate approaches to Healthy Tourism.
- Finally, the Jakarta Conference of July 1997 initiated the breakdown of traditional boundaries within government sectors, between governmental organizations and NGO's, between public services and private industry. This new approach will enable both WHO and WTO in a joint programme to promote health solidarity in action with tour operators, airlines, Travel Medicine Societies and International Hotel Associations.

A Healthy Tourism setting represents the organizational base of an infrastructure required to reach people in both developed and developing countries. Only with motivated and competent partners in both the public and private sectors we will be able to bundle different strategic approaches into well-formed actions in order to develop supportive environments for health. All together will help to set up the agenda for joint actions that can move us forward towards improving human welfare through Healthy Tourism.

The Association of Personal Well-being with Aesthetic Quality and Environmental Values

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The WHO definition of health “represents a balanced relationship of the body and mind and complete adjustment to the external environment”. Environmental values and tourist health are interdependent and increasingly important for the quality of life. Tourist health is also a function of the health and behavior of visitors. Health and behavior of the host tourist receiving population, physical qualities of the natural and built host environment, economic well-being of the tourist and host populations, understanding of what tourists seek when they travel, the desire, in it inheritance, of a host tourist receiving population to sustain its cultural, social, emotional, spiritual, aesthetic and lifestyle values and the quality of its natural and built environment, and the will to recognize and act on that heritage. As well as what the sciences contribute, the arts are sometimes used to express what we seek and consider worthwhile. Creative expression of this pleasure can also provide research material to help identify, categorize and prioritize human needs for different aesthetic qualities in the external environment. Article 27-1 of the Universal Declaration of Human Rights alludes to these points: “Everyone has the right to freely participate in the cultural life of the community, to enjoy the arts and to share scientific advancement and it benefits”.

In this presentation it will be reasoned, with examples from poetry, that for tourist health and Agenda 21 for sustainable development, aesthetic standards of environmental quality are needed. Our initial studies of using the arts to identify and explore aesthetic factors in the environment suggest that some people react negatively and retreat from certain factors whereas they respond positively and resonate with others. Personal well-being seems to be associated with a positive response.

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Urban Mobility and quality of life
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Abstract not received

A natural selective ultraviolet phototherapy along with bathing in the sea was utilized in the management of psoriasis at Safaga-Red Sea. In 80 patients with psoriasis, 90% achieved complete clear or excellent improvement. The results compare favorably with other therapeutic regimens used in the treatment of psoriasis. Since systemic medications are avoided, the advantage of the Safaga-Climatotherapy is that treatment is natural, pleasant and without serious side effects that is sometimes associated with other methods.

There is more to preparing children for overseas travel than merely “downsizing” the advice, vaccinations, and medications commonly prescribed for adults.

Travel may require that routine childhood immunizations be administered at an earlier than optimal age, and then repeated later. Many travel-related vaccines have lowerage cutoffs. One of the few studies of travelers’ diarrhea that included children showed that the highest incidence, severest disease, and longest duration of diarrhea occurred in travelers under the age of 3 years. The stools of infant in diapers may be a source of infection for caretakers. Common antidiarrheal medications used in adults are inappropriate to use in children. Infants and children are as susceptible to malaria as adults. Advise regarding mosquito repellants and prophylactic medications must be modified for children. Other issues to consider when preparing children for travelling overseas include the availability of health care at the destination, the health of caretakers in developing countries, preventing accidents, sun exposure, avoiding encounters with animals, waterfront safety, and whether or not small children with upper respiratory infections and ear infections can safely travel by airplane.

Background: As the economy develops, more elderly people in Taiwan are able to travel abroad in recent years. This study investigates the prevalence and risk factors of travel-related diseases in the elderly in Taiwan.

Methods: Questionnaire interviews were used for the elderly (>65 years old) in Hsin-Yi district in Taipei. 327 were sampled with a ratio stratified random sampling design. Valid responses were obtained from 303 (92.7%). SPSS and SAS software were used for analysis with chi-square for association.

Results: 48.5% (147) experienced sickness during travel, 166 (54.7%) experienced travel psychosis, 56 (18.5%) had traveler's diarrhea, 34 (11.2%) had muscle pain, 23 (7.7%) complained of fatigue. Other travel discomforts included insomnia (7, 2.3%) and headache (6, 1.9%).

Conclusions: Continued monitoring of illness in the elderly traveler and provision of appropriate health care merit prevention of travel-related diseases and improves the quality of their tours. Increased collaboration on travel illness between family physician, health educators, and those involved in the travel aspect, will be a very positive and efficacious contribution to reducing travel-related diseases.

The enormous increase in tourism seen over the last few decades involves more than ever before a large number of persons who are cardiologically vulnerable, including subjects affected by ischaemic cardiopathy, hypertension, valvulopathy and other cardiovascular diseases. There are also other categories of travellers, such as the elderly, who although when they set out on a journey have no specific history of cardiac disorders, nevertheless run the risk of cardiovascular disease.

Together with accidents, cardiovascular pathology is the main cause of death in international travellers. An apparently healthy person can be exposed to the risk of thoracic traumatology during transfers by car, of coronary ischaemia during flights or holidays at high altitude, or of bradycardia or arrhythmia if scuba-diving. In addition, there can be exposure to the risk of acute or chronic infection (eg. Chagas' disease) during visits to tropical countries, as well as the consequences of climates that are either too hot or too cold.

Travellers can help to prevent cardiovascular disease by adopting particular precautions and standards of conduct, and medical personnel must provide them with the following instructions.

1. Heart check-up before departure, backed up by appropriate instrumental analyses (echocardiography, exercise test), so as to correctly assess the state of health and the functional capacities of the cardiovascular system.
2. Carry a copy of a recent electrocardiogram and any other clinical documentation about a known disorder. Particularly recommended is the Health Passport, which allows doctors who may be required to give treatment to easily obtain details of the disease, case history, possible allergies and any therapy in progress
3. Carry sufficient drugs for the full duration of the journey or holiday, as these might be difficult to obtain in a foreign country.
4. Do not exaggerate with physical activity, to avoid exposing the heart to excessive strain to which it is not accustomed, particularly in the first few days of a holiday. In general, the pace of life on holiday should never be too intensive.
5. Ascertain that at the holiday destination there are suitably equipped medical facilities (emergency services, intensive care units, pacemaker fitting and checking centres, etc). Make a note of addresses and telephone numbers of these facilities, together with those of local cardiologists.
6. Check blood pressure periodically. Stress due to air travel, altitude, extreme climate conditions, over-exertion, incautious eating and other factors of risk can have a negative effect on therapy for hypertensive disease, causing complications.
7. Pacemaker patients must carry an information card with details of their pacemaker model with full updates, and should check that their holiday destination has a suitable pacemaker centre. Care must be taken with the electromagnetic fields of metal detectors, particularly in developing countries.
8. Do not choose high-altitude destinations, as these could cause a fall in blood oxygen content (hypoxaemia). Rapid altitude changes with ski-lifts, cable cars or other means of transport can also be dangerous.
9. At seaside destinations, avoid prolonged exposure to the sun and exposure in the hottest hours of the day. Hot and humid tropical climates can cause serious pathologies like heatstroke, characterized by the incapacity of the organism to disperse excess heat.
10. European travellers must carry documentation allowing them to use the same health services as the citizens of the host country. Non-European travellers should take out insurance to cover the cost of medical examinations, any hospitalization needed and repatriation expenses.

Objectives: to describe epidemiological data, clinical presentation and efficacy of IVM.

Methods: Prospective study between June 1994 and October 1997 using a standardized clinical examination and a questionnaire returned to the investigator by the traveler at least 15 days after IVM (12 mg in a single dose in adults) was taken.

Results: 49 patients were included. Of their destinations the Caribbean (mainly French West Indies) head the list (n=16, 33%), followed by Southeast Asia (mainly Malaysia and Thailand) (26%), Latin America (Mexico, Brazil) (20%) and Africa (20%). The mean time between arrival in the endemic country and onset of the CLM was 29 days (5-61). In nearly 50% of the cases, patients had received wrong medical advice between 1 and 6 times before attending our travel clinic. Only 20% of the patients had a single lesion. The maximum number of lesions was 10. The main location was the feet (42%) followed by the buttocks (27%). The face was involved in one case. All but 2 patients received IVM. In 5 cases a second course was necessary because of relapse. In 1 case albendazole was efficient after the failure of 2 courses of IVM. The median time for disappearance of pruritus and lesions was respectively 3 days (1-7) and 9 days (4-30). No side effects were reported. IVM was given to a 20 month old child with good efficacy and tolerance. Conclusion: CLM seems to be little known among GPs and even dermatologists, leading to a wrong diagnosis and/or inadequate treatment whereas a single dose of IVM is safe and effective. In addition IVM was efficient and safe in a 20 month old child.

Objective: To assess the trends of viral hepatitis B during 1976-1997.

Materials and Methods: A retrospective analysis of 2,568 registered cases of viral hepatitis B has been carried out in the population of about 870,000. Actual immunization programs have been evaluated.

Results: In 1976-1997, the registered morbidity declined considerably from 23.0 to 2.8 per 100,000 population. During the investigation period a significant decline in the number of nosocomial and occupational infections occurred in all age groups. However, the morbidity still remains highest in the age group of 15-24 years. The new problem is distribution of infection among drug users. Coverage of healthcare workers has reach 85%. Of the 113 infants born to HBsAg-positive women identified in 1994-1996, 95% were fully vaccinated by 6-8 months of age.

Conclusions: The core of the problem regarding the transmission of the infection has shifted beyond the health services. However, sexual transmission is a persisting problem. Therefore, vaccination of high risk groups should be implemented before regular immunization is introduced.

Hepatitis E virus (HEV) is a single-stranded positive sense RNA virus. Electron microscopic studies show that HEV is unenveloped virus particle of 27-34 nm. Large epidemics of HEV have been reported in the developing countries: Asia, Africa, Soviet Union and China.

Several species of primates have been successfully infected with in the experimental HEV infection and attempts were made to propagate the virus in tissue culture cells. In the present study, we tested different cell lines: PLC/PRF/5, CaCO₂, simian kidney cell, HT. The inoculum was a 10% stool suspension in phosphate buffered salts obtained from a Rhesus monkey experimentally infected with HEV SAR55 strain (Pakistan origin). The cells, growth on 25 cm², were infected with stool suspension 1:5 and 1:10. After 90 minutes adsorption at 37°C, the monolayers were washed and 5-6 ml of fresh medium was added. The presence of HEV in cell cultures was recorded using the method of reverse transcriptase-polymerase chain reaction. RNA was extracted using the Trizol reagent and the PCR product (266 bp) was separated by electrophoresis in 2% agarose gel containing ethidiumbromide.

Kidney monkey cells, CaCO₂ and HT after respectively 10, 14 and 2-day post-infection were scored as negative in the first passage. Whereas the PLF/PLC/5 cells were positive until the 4th passage and after 15, 10, 10 and 9 day post-infection respectively.

Two Pakistan brothers who have been living in Italy for two years were admitted to our division after a trip to their country.

Clinical presentation suggested acute hepatitis (fever, abdominal pain, jaundice and increased ALT level) but serum markers for the usual hepatitis virus (HAV, HBV, HCV) and for Herpes viruses were absent.

Therefore, two serum samples from each patient were sent to the Virology Institute of Milan University for anti HEV (antibody) assay. All sera tested positive for both IgG and IgM HEV specific antibodies. In two weeks the patients recovered and ALT level normalized.

The authors underline the following points: 1) Travelers must be aware of the risk of acquiring HEV hepatitis during trips to countries where this disease is highly endemic; and pregnant women deserve a particular regard because of the risk of a fulminant course; and 2) no cases of HEV hepatitis have been reported from the region Lombardia in spite of many travelers to tropical countries.

A new clone of *Neisseria meningitidis* appeared in the Czech Republic in 1993 and caused an emergency epidemiological and clinical situation in invasive meningococcal disease (IMD) characterized by increased morbidity and fatality rates, changed age distribution, more serious clinical courses, local outbreaks in the civilian population and an increase of the IMD incidence in the army. The clone was recognized by multi locus enzyme electrophoresis as ET-15 belonging to ET-37 complex and was practically identical to the clone identified in Canada at the beginning of the 1990's. The National Reference Laboratory for Meningococcal Infections in Prague set up a nationwide active IMD surveillance in April 1993 and prepared the Guidelines "Epidemiological measures to be taken in a focus of invasive meningococcal disease". A targeted vaccination with A+C polysaccharide vaccine was conducted in the most affected parts of the population to prevent the spread of the disease caused by the emerging meningococcal clone. Vaccination of recruits was introduced nationwide in 1995. Epidemiological factors presumably involved in the development of IMD have been evaluated in a nationwide prospective epidemiological study. Genetic clone ET-15/37 showed phenotype C:2a P1.2(p1.5) in 1993, antigenic variants in which serotype or subtype is not detectable by whole cell ELISA have been found since 1994, and a B variant of ET 15/37 clone appeared in 1995. The occurrence of B:ET-15/37 variant has been rather infrequent in the Czech Republic to date. Genetic clone ET-15/37 has appeared in several European countries recently (Greece, Spain, Poland), causing emergency situations there as well. In each country, the appearance of clone ET-15/37 is an indication for following special guidelines and taking appropriate epidemiological measures including vaccination focused on the part of the population at the highest risk of IMD. Nevertheless, no indication for vaccination on an international level has been seen in Europe to date and vaccination of travelers has not been required. Recently, further investigation of the clone ET-15/37 strains has been conducted in cooperation with laboratories in France, Spain, Poland, Greece and Canada.

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We analyzed the vaccination level, tetanus, polio, hepatitis A-B, typhoid and A/C meningitis, of travelers at the Nantes Travel Clinic.

About 3000 outpatients come to the clinic each year, prior to a tropical trip, to receive the yellow fever vaccination. For most travelers it also an opportunity to receive a revaccination of tetanus/polio. Most patients had the correct hepatitis B vaccination. Many have still failed to appreciate the hepatitis A vaccination as most people do not know the risk and mode of transmission of this disease in the tropics. Indications and prescription of this vaccine by the general practitioner were often confusing.

Typhoid and meningitis vaccine are given systematically even when there is not risk or the risk is unknown.

It seems necessary to inform the medical staff in France of the correct vaccine information. TRO-PIVAC II is a French logical (PC and Macintosh version 1997) that we have used at the University of Nantes to help physicians in their prescription of vaccines. It was distributed free of charge by SmithKline Beecham's Vaccine Unit, our partner.

The inactivated hepatitis A vaccine (Havrix™ 1440) has been shown to be safe, efficient and providing a long lasting immunity after two doses given 6 to 12 months apart. Unfortunately, many vaccinees forget to come back for their booster injection. The aim of this study was to compare the effect of the recommended interval to a longer interval of more than 24 months on the immunogenicity of a booster dose of Hepatitis A vaccine.

Method: Travelers older than 18 years who had received a first dose of Havrix™ 1440 or 2 doses of Havrix™ 720 one month apart more than 24 months previously were included in the study. Blood samples were taken before and 1) 30 to 40 days after (2) a booster dose of Havrix™ 1440. Hepatitis A antibodies were measured by the ENZYMUN Anti-HAV test (Boehringer) and expressed as geometric mean titers (GMT). Sex, age, body-mass index (BMI), history of disease, and concomitant administration of other vaccines were recorded. Travelers coming in for their booster doses after 6 to 12 months served as controls.

Results: Distribution in sex, age and BMI were similar in both groups. Interval between the first dose and booster ranged from 6-63 months. After the booster injection, the GMT₂ rose dramatically in all categories and was not influenced by age nor by the time elapsed since the first dose. The number of travelers with a baseline titer under 20 mIU/ml (seroprotective titer) was higher in the case group (22/98, versus 5/86, $O=0.0002$), but all developed a titer above 180 mIU/ml after the booster. **Conclusion:** this study shows that the immunogenicity of a booster dose of hepatitis A vaccine is not influenced by the time elapsed since the first dose, up to 63 months. But 22% of cases had baseline titers below the seroprotective level suggesting that the present recommendations for a booster dose after 6 to 12 months should still be applied.

A New Single Dose Chiron HAV Vaccine: Early and Lasting Protection for Travelers.

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Chiron has licensed in Italy an inactivated low dose type HAV vaccine with an antigen concentration of 6 EU requiring three injections for immunization in adults. This vaccine is safe and immunogenic and induces 100% seroprotection 30 days after one single injection, but only 75% at 15 days after immunization. The aim of this study was to find an antigenic concentration of HAV vaccine that could guarantee a seroprotection closer to 100% within 15 days of immunization. In addition, the persistence of anti-HAV antibodies was evaluated. This early and lasting protection is important to persons traveling from low to high endemic areas.

Materials and Methods: 242 healthy seronegative adults were enrolled at the University of Torino (Italy), all signing an informed consent form. Study subjects received in an observer blind manner three different concentrations of the Chiron HAV vaccinia or a licensed high dose type vaccine. A booster dose of the corresponding vaccine was administered 6 months later. The enrollment ratio among study vaccines was 1:1:1:1.

Results: all study vaccines were safe and well tolerated. Two serious adverse events were reported during the study period; both of them were considered unrelated to vaccination. The Chiron 12 EU vaccine showed a 94% seroprotection rate of anti-HAV antibody titers 15 days after a single dose. Moreover, Chiron HAV 12 EU vaccine demonstrated better persistence 6 months after immunization in terms of both seroprotection rate and geometric mean titer (GMT) with respect to the licensed control vaccine. The booster dose had brought to a statistically significant increase in terms of GMT, with respect to the licensed control vaccine and this behavior was maintained at one year after the first immunization.

Vaccination Against Hepatitis A in Slovenia.

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In the past 10 years (1987-1996) an average of 425 cases of hepatitis A (HA) were registered in Slovenia. Morbidity rate was 21.7 per 100,000 population. There were no fatal cases of HA in this period.

From 1987 to 1989 nearly 1000 cases of HA were reported each year, while in the past three years the number of cases decreased under 100 per year. Most cases of HA in Slovenia occur among school children and young people under 30 years of age. The seroprevalence indicates that Slovenia is moving from an intermediate to a low endemic rate of risk of acquiring HA (anti-HA virus prevalence under 25% in children younger than 5 years and under 50% among children under 15 years). Mass compulsory vaccination against HA is not included in our immunization program. There is a growing interest in vaccination against HA, especially among travelers to HA endemic areas and other people who would like to protect themselves against the disease. Serological studies indicate that most children entering elementary school did not have antibodies against HA.

A 2-year follow up study of 58 plasma donors (age: 19-58 years; medium range: 32 years) investigated antibody concentrations against tetanus - and diphtheria toxin after boosting with combined vaccine (≥ 20 IU tetanustoxoid, ≥ 2 IU diphtheriatoxoid). Tests were performed with double-toxoid enzyme-immunoassays standardized in bioassays. The vaccination history of test persons was unknown. All had antibody concentrations against both toxins of >0.01 IU/ml as a reference to former vaccine contact. The medium concentrations of tetanus antibodies was 22 IU/ml two weeks after vaccination with a rapid decline on half of it after half of a year. After one year the ideal declining curve became nearly linear. The reduction value from this moment was one third in one year. The medium concentration of diphtheria antibodies was lower with 3 IU/ml two weeks after vaccination. The progress of the ideal declining curve had similar to that of tetanus a rapid decline in the following half-year. The value was then one third of the starting-concentration. After one year the curve became nearly linear with a decline of one half in one year. It can be calculated that the protecting level of vaccine-induced antibodies is reached earlier in diphtheria than in tetanus reflecting the lower immunogenicity of diphtheriatoxoid. This is important for the further vaccination strategy against diphtheria in adults.

Clinical Tolerance and Immunogenicity of Polysaccharide vi Vaccine of Typhim vi (associated to diphtheric and tetanic valencies) and Typhoparatyphoid Tab Vaccine (combined with the same valencies) in Royal Army Forces.

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An unicentric and randomized study was conducted by the department of Medical Biology of Mohamed V Military Hospital in Rabat (Morocco) in collaboration with serums and vaccine Pasteur Merieux Institute of Lyon, France. The study concerned 320 males militaries Royal army Forces, between 18 and 22 years old during 3 months (Nov, 1989 - Feb, 1990).

The subject of this work is to assess the clinical tolerance and immunogenicity of polysaccharide Vi vaccine of Typhim Vi (associated to diphtheric and tetanic valencies) and typhoparatyphoid TAB vaccine (combined with the same valencies).

We propose to Army Headquarters to use Typhim Vi vaccine instead of the classic TAB vaccine whose adverse reactions are known because the study shows that:

1). Typhim Vi is more useful (1 injection per 2 or 3 years), more tolerated (15% of local reactions, 12% of general reactions) and confers seroconversion in 78 at 95% of cases; 2) TAB vaccine is less useful (3 injections a month spaced, and one injection every 5 years), less tolerated (72% of local reactions, 30% of general reactions), and confers seroconversion in 61 at 90% of cases; 3) diphtheric and tetanic valencies associated of Vi and TAB vaccines induce total immunity in the two cases (100%); and 4) Typhim Vi can be simultany associated with diphtheric, tetanic, poliomyelitic and meningococcic vaccines, that make it a perfect and more acceptable vaccine.

As organized forms of human's activity, in time and space, travel and tourism imply changes from different points of view, therefore the traveler should adapt his behavior according to the local ecosystem for a consonance with his whole organism.

To improve physical and psychological health it is necessary to adopt an eco-educational strategy with a eco-prophylaxis beneficent which are able to arouse the conscience.

Travel and tourism are for life, like salt for food; these activities offer diversity and happiness, experience and culture for the psycho-physiological equilibrium. In this context, we must wake-up everyone's conscience, because the behavior changing depends on conscience, and humanity's health depends on behavior changing.

Education and culture are vital for humanity's health and this means the victory of life by wisdom, in order to have a better health and life.

During a war tourist activities cease usually. However, during the war in Croatia 1991-1995 the tourism activities had not ceased. The tourists, despite the risks visited the Croatian areas which were not affected by war.

In these retrospective study we present the dynamic of tourism activities in Istria (not with war affected Croatian region) and the morbidity of tourists. We use data from the medical care system of one hotel complex, compare, describe, and evaluate morbidity of tourists in two pre-war years(1989-1990) and three war years period(1991-1993). In two pre-war years this area was visited by 30,000 tourists and through war years hotel hosted 20,000 tourists, a 3-fold reduction in number of tourists. The incidence of tourist check-ups up was nearly the same for both periods (12.5%). The morbidity in both periods was very similar with no significant differences in groups of illnesses (30 % skin and subcutaneous tissue, 25% respiratory system, 25% digestive system and 20% poisoning and other outdoor illnesses).

Accurate information about the health risks should be given to tourists. According to the suggestions of WHO the tourist outpatients departments should be organised and they would offer specific services of prevention according to the standards and demands of the countries the tourists come from. A doctor will always work with care and sacrifice respecting the international standards and rules of the occupation at any time to protect and improve tourist health.

Most often solar erythema reduces the joys of vacations. In order to prevent and treat erythema, we have carried out a series of new photo-protective preparations with complex effects.

The products actively associate and reciprocally intensify the filter-like effect of classical photo-protectives, chosen among chlorodium, artiprine, aluminum, hydroxide, Peru Balasam, allantrine, urea, etc, with the reepythilisant, antibacterial, cholenseatic, healing effect of bioflavonoidetine from the extract of propolis, with the antibacterial, antiviral, melignophrocive effect of bullint green, malchite green, with reepythilisant effect of vitamin A; with the antibacterial antiallergical, reepythilisant effect of Aeth-Millefolia, Aeth-Chamaillae; with the reepythilisant, soothing antibacterial effect of extracts from dulidonium magis L, callendullae officinolae L, armice martenael, etc; with the soothing reepythilisant, nutritious, antibacterial effect of the olive cerium, etc;

The products, obtained in a vast palette, under Form of emulsions, creams, solutions, etc, enlarge the range of photo-protective preparations.

Owing to their complex composition, these preparations render besides their photo-protective effect, reepythilisant, soothing, nutritious, antibacterial, antiviral complex effects as well, contributing thus to the efficient prevention and treatment of solar erythemias.

Most frequently the pleasure of a journey is shadowed by catching a respiratory infection. To prevent and treat respiratory infections of tourists during their holidays, we have managed to produce a series of new preparations under form of syrups, gelulea, etc.

The preparations actively associate and reciprocally potentate the antibacterial effects with a large spectrum of volatile oils from *emaceuca leucadendron*, *anthemis nobilies*, *cinnahonum globulous*, *junniperus communis*, *abies albae*, *eugenia caryolphyllata*, *hysorus officinalae*, *lavandulae officinalae*, *menths piperita*, *myrthus communis*, etc. The antibacterial, antiviral, malignophyl effect of the brilliant green, green of amalchine (mountain green), with antibacterial effect, immunostimulating, soothing, antiviral of phalnonoids from the standardized extract of propolis, from the extract of *Polulus Nigar* (plant buds), extract od *Callendula Off*, *Armica Montanta*, with antibacterial antiellergical effect of azulenela from *EIAeroleia Millefollis* and *Eto. Camomillia*.

The products show favorable complex effects in the prevention and treatment of respiratory affections. The execution of the products under various forms-syrups, galulae-bearing tastes able to assure the preference of consumers belonging to different categories of age, from children to adults.

Cape Verde is an Atlantic archipelago of volcanic origin, composed of 10 islands and 8 islets, situated 445 Km from the west coast of Africa. With a total area of 4.032 Km², the local resident population is estimated at 400,000. Tight cooperation with Portugal in health problems has been established after the independence in 1975. Annually, in October, a medical congress is locally organized with important Portuguese participation. In 1996, 92 Portuguese participants, mostly family doctors and nurses, traveled to the city of Mindelo - S. Vicente island- where the event took place during 4 days, followed by a short stay (3 days) on the island of Sal. Accommodations were arranged in 4 star hotels and no special precautions were recommended before traveling. Two weeks after returning to Portugal, a questionnaire was sent by mail to all the participants, asking for medical problems that occurred during the trip. Sixty three (68%) forms were received and the main health problems in descending order of frequency were: traveler's diarrhea in 13 (21%), sun burns in 7 (11.2%), accidents in 3 (4.8%), respiratory infections in 2(3.2%), other skin diseases in 2 (3.2%) and a 5 days feverish disease in one (1.6%). Only 5 participants asked for medical help and none needed hospitalization. The relatively low frequency of medical problems in this population traveling to Cape Verde in spite of no particular pre-travel advice may be explained by their profession (medical doctors and nurses) and previous stays by most of the participants in African countries.

Study Design: A search of the computerized database at the Victorian Institute of Forensic Pathology was performed. Records of deaths from April 1994 to October 1996 occurring in individuals who have been identified as non-residents of Victoria were analyzed.

Results: 188 interstate and 36 international cases were recorded during the search period. These were categorized by age, sex, country/state of origin, nature of death (natural or accidental). Utilizing the available arrival data to Victoria over the search period a crude incidence of death was calculated at 3 per 100,000 for both groups.

Discussion: It was demonstrated that a coroner's database can be searched to isolate the deaths in visitors. While there are a number of reservations with the current search, it certainly offers a starting point for further more detailed analysis. Mortality studies provide the following: 1) risk determination, which then can lead to risk minimization strategies. These strategies can be at the individual level, the industry level, also the government level; 2) the requirement of health services. Trend analysis provides health planners with data to calculate future service demand.

Conclusions: The death rate of visitors to Victoria appears to be of a low level, however further data analysis is required to confirm this. The cause of death in those over 50 years of age is significantly of cardiovascular disease, whereas in those under 50 it is significantly due to trauma.

In our hospital during a 2-year period 74 patients with tibial shaft fractures were treated. All were hurt in traffic accidents, 70% of them were men, the middle hospitalization was 40 days. In 29.7% of the cases of open fractures the patients were treated by external fixators.

Surgical interventions were used in 9.5% of the hospitalized patients. In the patients with close reduction and plaster immobilization the complications appeared in 6.7% of the cases, but in the group of the surgical treated patients we had 31% complications with wound healing. The deep infection or pseudo arthritis were not noticed.

The authors favor the conservative treatment of the tibial shaft fracture.

Changes of climate feeding during travel lead to homeostatic changes and reduction of immune response, increasing the possibility of intrusion of a foreign agent in traveler's organism. This causes a more severe course of several infectious diseases, e.g. virus hepatitis (VH). We examined 30 aged and old patients with acute VH. We studied malondialdehyde (MDA), dien conjugates (DC), activity of glutathione redox system (GRS). In the acute period of a disease, patients with VH of mean severity showed activation of lipid peroxidation and all enzymes of GRS. Patients with a severe course of VH at the background of extremely high indices of MDA and DC showed a decrease of glutathione peroxidase, glutathione reductase, glutathione transaminase activity, and GSH concentration. It proves a breakdown of adaptive capacity of antioxidant system and possible unfavorable outcomes of the disease. In clinic, they showed aggravating symptoms of intoxication, oppression of emotional sphere, increased serum bilirubin, decreased indices of blood coagulative system. Proceeding from the mentioned above we suppose that lipid peroxidation is one of the leading causes of hepatocytes cytolysis. It needs correction of hemostasis with medicines of antioxidantive mechanism of action.

Mental health is an important part of public health, especially among seafarers. For instance, seamen, in contrast to other groups of population, have 10 times more suicidal to neurotic reactions, and 3 times more other neuroses. The increase of mental disorders is one of the main reasons for the increase of the accident rate aboard ocean-going ships.

It is necessary to consider a phenomenon of certain neuroses, neurosis like aberrations, and broad spectrum psychological diseases (NPS) first of all, as a model of condition of person. The most general feature of NPS is the collection of diagnostic criteria of psychoneurotic parameters and observance of structure of complex professional sailor's activity. The problem, which a physician must solve is to reveal NPS in time and to give a qualitative evaluation.

To assess the influence of intensive physical activity on the antibody response to a hepatitis A-vaccine, 28 fitness-oriented athletes (age 27.8 +/- 4.9 years, usual workout 4.6 +/- 2.1 hours a week) underwent a two week intensive training program. All subjects were healthy by history, physical examination and routine laboratory examinations, seronegative for hepatitis A and signed a written consent before participating in the study. The athletes were randomly assigned to either of the following four groups: 1)vaccination before the work-out program, 2)vaccination after one week of the work-out, 3)vaccination after the end of the training period and 4)controls. The training program consisted of continuous bicycle exercise, five times a week at 110% of the individual anaerobic threshold (IAT) (approximately 75% of the maximal capacity) to exhaustion. IAT was determined as lactate threshold by an incremental exercise test on a cycle ergometer. Venous blood samples for the measurement of the antibody response, immunoglobulin isotopes and IgG subclasses were drawn before, two and four weeks after the vaccination and six months later. Two weeks after the vaccination, participants of groups 1, 2 and 3 developed significant lower antibody titer than controls (group 1 = 26 IU/l, group 2 = 10 IU/l, group 3 = 27 IU/l, group 4 = 64 IU/l; $p < 0.05$). Seroconversion rate was 100% in controls as compared to 71.5% in group 1, 42.9% in group 2, and 71.5% in group 3 ($p < 0.05$). Four weeks after, the antibody response still exhibited a non-significant tendency to lower levels in the training groups, especially in group 2, followed by group 3 and 1. Six months later, antibody titers of all groups showed almost equal levels. The data indicates that intensive workout has a temporary suppressive effect on the antibody response to a hepatitis A-vaccine that may last up to two weeks after cessation of the training.

From January to October 1997 a study was conducted in Havana City, involving Cira Garcia Central Clinic for foreigners and the medical posts of 15 hotels. The goal was to ascertain the number of patients, most common ailments and the origin of the sick tourists.

2542 tourists were assisted in Cira Garcia Central Clinic plus 2224 in the hotels medical posts, totaling 4766 patients. The most common clinical pathology was 712 (18%) of the patients with acute respiratory diseases, with trauma (301 patients, 32.2%) being the most common surgically treated condition.

Spain ranked first as a country of origin with 874 patients, followed by Italy with 836, and France with 368.

140 patients were admitted as emergencies to the clinical services and 177 to the surgical ones, 55 patients of which (31.0%) were operated.

As the millennium ends, it is estimated the early in the next decade the world will witness more than one billion international journeys per year. While the majority of these voyages will be related to business and tourist travels a significant amount of those undertaking international journey will be individuals of other categories.

Greater numbers of immigrants, refugees, asylum seekers, international students, migrant workers and displaced populations will be moving from more areas of origin to an expanding number of destinations. This growth in the scope and volume of population movement is taking place in an environment of increasing globalization. The geopolitical and social changes observed in the past decade have inexorably altered the travel and migration patterns of Central and Eastern Europe, Central Asia and the African continent. Trade, tourism, an increasing integrated labor and economic system and the demographic consequences of migratory movements since the end of the Second World War act together to influence and moderate international and regional population movements.

These groups of migrants represent, as international travelers, an expanding area of health interest. The factors that promote the relocation of these populations, the nature of the journey itself and the demographics of each of the subpopulations of migrants act to influence the health parameters of the population.

Between the origin and the destination of the migrant these individuals often cross bio-geological boundaries that demarcate the incidence and prevalence of illness and disease. The health related consequences associated with travel across these prevalence demarcations can be significant. Illness and disease common at the origin of the migrant traveler may be rare or unusually encountered at the destination leading to delay in recognition and treatment. The migration of large numbers of individuals with the sequella of chronic disease can influence the micro-epidemiology of disease in the area of resettlement. Finally, migrants and their children returning to their origins after prolonged absence may be at unappreciated risk of illness or disease acquisition. This presentation will review the global demography of modern population movements, describe the epidemiological implications of migration health issues and define situation where appropriate interventions can support both the health of the migrant traveler and that of the local populations into which they settle.

Travel medicine addresses the health and medical needs of travelers, primarily those leaving industrialized countries to visit areas of the world with a higher prevalence of endemic diseases, such as malaria, hepatitis A or diarrheal diseases. The increase in mobility of individuals and populations worldwide forces us to reconsider the scope of travel medicine. Industrialized countries receive an increasing influx of migrants (immigrants, refugees, asylum seekers) coming from numerous parts of the world with common and specific health needs, different perception of health and disease and access to health services which can vary greatly.

As a result of this increasing cultural and social diversity, travel medicine providers are facing new challenges in the care of patients of various origins: new types of exposure of migrants returning home, different perception of risks influencing compliance to recommendations, rare imported diseases, cultural and language barriers, management of compliants related to adaption difficulties or to previous traumatic exposure, etc. New knowledge and skills are needed, enriching the practice of travel medicine, which in turn can make travel medicine doctors key players in health promotion for migrants and as trainers for local general practitioners.

The Veneto Region has to provide health assistance to irregular immigrants who do not have full access to the National Health Service. Until now, those who needed urgent medical attention and did not belong to the National Health Service, had to turn to the Emergency Rooms of various hospitals to be admitted. This is very expensive.

In 1995 there were 10.99% hospital admissions in the Veneto, amounting to 76,536 days in hospital at a cost of 38 billion, 268 million lire. The total number of hospital admissions observed in the seven provincial centres amounts to 5613, corresponding to 37.262 days stay (average stay 6.63 days) and a cost of 19 billion, 805 million lire.

The data suggests that in the provinces of Padova, Verona, Vicenza, and Treviso, the provincial centre is burdened with 50% of health problems pertaining to immigrants, while the remaining 50% is distributed over the rest of the territory. In Padova during the 4 year period 1993-1996, the five main causes of admission were: Trauma (519), Drug Addiction (394), Voluntary Abortion (311), Fractures (137), Alcoholism (136) and Pregnancy to term (124), while the infectious diseases which determined admission were relatively few. In 1995 alone Emergency Room services administered to immigrants in Padova amounted to 4,500 cases, while another 4,000 examinations were carried out by the Caritas out-patient clinic, suggesting that 23% of immigrants who underwent medical examinations in Padova were subsequently admitted to hospital, rising to 43% if the examination was carried out in the Emergency Room.

The Veneto region has therefore established a "light" health card that provides limited health cover for those who are without a stay permit or without residency.

During the congress, information concerning the provision of the "light" health card during 1997 will be presented and the difficulties encountered during this first phase will be discussed.

Several factors contribute principally to the increased recognition of the role of immigration-associated tuberculosis. First, migration patterns increasingly change with accessibility of foreign destination becoming easier. Second, international migration is stimulated by an increasingly wider socio-economic gap between low-income and industrialized countries. Thirdly, the epidemiology of tuberculosis in industrialized countries has dramatically improved while in low-income countries it has remained unchanged or even deteriorated. Finally, armed conflicts lead to an increasing number of displaced persons who are often forced to live under crowded conditions in temporary settlements, conditions that are conducive to increase the likelihood of transmission and progression to clinically overt disease among those who have become infected. It is thus not surprising that the proportion of tuberculosis cases that are foreign-born in industrialized countries has been dramatically increasing over just the last decade. In at least four countries in western Europe this proportion now exceeds 50 per cent. Refugees and other displaced persons in low-income countries are similarly seen as increasing the tuberculosis burden in the concerned host countries to the point where resources of national programs have become seriously stretched. It has thus become an important process to develop international guidelines to address specifically migration-associated problems encountered in tuberculosis control both in industrialized and low income countries.

Approaching the year 2000 gives an opportunity to summarize the 20th century. In the beginning of the century the issue of mental health and migration was characterized by mental stigmatization, ethnocentrism and backlash against immigrants. Psychiatric diagnosis was used as social control. Parallel to this an ideal arose in the world's industrial countries, considering mental health as a state of general well being and optimal functioning, rather than merely the absence of mental illness. It started in Finland 1897 with the forming of the first citizens voluntary mental health association. After World War II, the World Federation of Mental Health in 1948 spoke of a new concept of "World Citizenship". One of the requirements was and still is equal opportunities to ethnocultural minorities. Since World War II mental health professionals and others have advocated the needs of immigrants and refugees. Although this humanitarian view has gained increasing support, hostility and prejudice reappear in many countries against foreigners. Statistics on poverty, unemployment and illness among immigrants and refugees to Western Europe indicate that there is a crisis. Our duty as health professionals is to identify the needs and difficulties as well as the powers and opportunities of individual migrants and refugees. We have to act locally and individually but to think globally and historically. Recent groups of migrants come from different countries and for different reasons than their predecessors. Questions of integration and mental health of migrants and refugees is not simply a continuation of old themes. We may have to revise some of the old knowledge and continue learning according to new challenges, and to be self-critical. I have a dream that one day people will build bridges between societies, sciences, professional disciplines and cultures. That would mean a big step forward to improve mental health of mankind including ourselves.

The assessment of risks to which tourism workers are exposed is a fundamental factor in the prevention of associated pathologies, according both to the directives imparted by the European Union to its member states, implemented in Italy with Decree 626/1994 and subsequent modifications, and also to current practice as taught in our country for many years, given that the maxim 'CENSIRE PER CENSURARE', translatable as 'IDENTIFY TO ELIMINATE', dates back to the 1960s.

In particular, health surveillance for tourism workers aimed at preventing possible damage is based on the systematic identification of risk factors that can be used to prepare a programme of prevention. Given the notable experience acquired over the years, in Italy and elsewhere, the risk factors for tourism workers seem to be prevalently of a biological nature, linked namely with living organisms. Among these, consideration should be given first and foremost to *Homo sapiens* himself, since it is humans who organize the work in question, even though they have little control over its very particular rhythms, since in objective terms it is extremely cyclical. Periods of intense activity, at times even totally exhausting, alternate with less busy moments that are not always able to promote physical and mental recovery. The result quite often is an absence of gratification or even authentic 'job dissatisfaction'.

Remaining in the field of biological risks, emphasis has long been placed on the need to avoid the transmission of infectious diseases or parasites from tourism workers to their guests, but it is equally necessary to dedicate attention to transmission in the opposite direction, safeguarding tourism workers from possible infections or infestations passed on by holidaymakers.

In addition to biological risks there are also physical ones, some familiar, such as ambient climate conditions (dry or humid heat in kitchens and laundries, low temperatures in cold stores and freezer chambers, etc), electric shock and traumas, and others that are new but growing rapidly in importance, including noise and/or vibration from technological devices, particularly if poorly serviced, and non-ionizing radiation from microwave ovens, once again if poorly serviced or even worse, if badly designed. Special attention must be given to noise, a risk factor to which for instance discotheque staff are particularly exposed. These are subjects in which our own studies and those of others have revealed auditory and extra-auditory disorders with a far higher frequency and of greater seriousness than found in better-protected worker categories.

Finally, risks of a chemical nature must be considered, starting from the hundreds of thousands of commercial compounds to be found at tourist facilities (as they can also be found in private houses). These products often have a similar or even identical composition, but equally often differ widely in their cost. Above all they have completely different names, totally lacking in relevance to the actual product, and this is allied with labelling for product characteristics that frequently fails to respect legislative standards or even essential criteria of common sense, which would logically call for at least a mention of chemical composition (sometimes protected by industrial patents), as well as a coherent set of instructions for correct use that can prevent health risks.

All occupations are concerned by international travels during long-term periods (expatriation, rotations) or short-term periods (sporadic or repeated trips).

Occupational medicine departments are before departure in direct contact with the employees who travel and have to advise, inform, develop preventive campaign, vaccinate (primary prevention). They follow up individual and collective health status before departure or on return (secondary prevention). They can manage return pathology (tertiary prevention) and sometimes even during the course of the trip (long-distance advice, medical transfers, liaison with the local medical infrastructure). Health risks to manage and prevent include:

1. risks of occupational disease or injury due to workplaces and sites or to occupational activities;
2. risks from travel, transport, transfers;
3. risks of physiological perturbations due to the environmental change: i) disturbances of biorhythm with shifts of times zone, sleep deprivation, shift work; ii) atypic work time, iii) work at high altitudes, or hyperbaric, iv) acclimatization to hot or cold environment, disturbance of thermoregulatory mechanism or hydric balance;
4. risks linked to the new ecologic or environmental factors i) chemical or radioactive pollutions, ii) work in hot or cold temperatures, iii) infection or parasitologic infestation, with, in this case, three targets for pre-entator; diseases which could be prevented by immunization, those which could be screened by periodic follow-up, and those for which we have to prepare the eventuality of diagnosis or therapy;
5. psychological or sociological aspects: i) impact of the differences, ii) stress due to fast change of references: family, usual environment, iii) social isolation environment, iv) transplantation pathology;
6. health risks in relation to medical environment, due to the local acquisition of a disease or an injury, or with the follow-up of pathology, "well stabilized" in western countries: i) subjective feeling about differences in curative management, ii) objective risk, in case of local lack, of deficiency, iii) medically isolated sites, iv) problems with medical evacuation in difficult conditions, and with repatriation.

The study evaluates the health of the crew of the Romanian Air Transport Company-TAROM for epidemiological and health care reasons, mainly on parasitic and tropical diseases-enrolling 50 persons (pilots and land-technicians) operating internal flights in Pakistan, over a period of 40 days (October-November 1994).

Patients and Methods: 33 persons requested medical care, the great majority being land-technicians, with an increased epidemiological risk (vectors contact, variation of humidity, high temperature differences between day and night, contact with the soil) presenting cutaneous manifestation, heat, illness, diarrheal manifestations. The pilots presented a different pathology, involving the digestive segment, heart and lungs. All patients were males between 25-30 years.

Results: 11 cases acute diarrhea (due to giardia and E. histolytica); 7 cases cutaneous manifestations (suspected as dengue fever, cutaneous allergy produced by insects bites, cutaneous larva migrans and micosis); 8 cases respiratory tract involvement; 7 cases febrile illness; 1 case dehydration.

Conclusions: In spite of enrolling a small group of patients and covering a short period of time, the study emphasizes that the risk of contacting some tropical diseases exists, especially when the receptive population is not protected by any specific chemoprophylaxis or vaccines.

Romanians flying in tropical areas, especially the crew, must be better advised and evaluated by specialists in a travel medicine department that has to be created in our country too.

We studied the dynamic effects of acute heat stress on the visual, hearing and act reaction time at dry bulb temperature: $37.51 \pm 1.2\text{C}$, wet bulb temperature: $26.7 \pm 0.1\text{C}$, and black bulb temperature: $39.1 \pm 1.4\text{C}$ within a man made climate room. Compared with that before stress, there was almost no change in visual single reaction time after heat stress, but there was a significant increase in visual selected, hearing single and selected, and act reaction time after heat stress, especially in 30 minutes after heat stress. These results indicated that there were the effects of heat stress on the visual and hearing sensory function and reaction velocity, and these results would also provide a referential data for evaluating pilots.

This study focuses on the three most prevalent parasites. *Opisthorchis Viverrini*, Hookworm, and *Stercolaris Strongyloides* in Thai laborers who came to Taiwan between 1992-1994. They were interviewed and stool samples were collected and examined. SAS software was used for statistical analysis.

A total of 315 male subjects were included. There were 205 (65%) infected laborers and 110 (35%) uninfected ones. Before and during the course of treatment, the symptoms most encountered were: anorexia, vomiting and diarrhea.

Infection of *opisthorchis viverrini*, hookworm and *stercolaris strongyloides* did not seem to be affected by demographic variables such as age, height, weight, marital status, educational level and income. Infection seemed more related to eating habits. All three infections were significantly related to eating raw or undercooked pork, found more frequently among infected hosts. *Stercolaris strongyloides* infection was also related to eating raw water caltrop or white bamboo shoot, while *opisthorchis viverrini* infection was additionally related to eating undercooked lamb. Difference in habitat among the infected and uninfected groups was also an influencing factor. Those who had tap water in their native homes had a significantly lower frequency of hookworm infection. No other significant differences were noted.

In the Netherlands Travel Health Advice (THA) is mostly given by the municipal public health services (40%). Around 10% of travelers visit hospital-based or specialized travel clinics or occupational health services. Sixteen percent of travelers receive their vaccinations and malaria prophylaxis from their GP. A great diversity of physicians is involved in THA and an even greater diversity of advice is given. For many Dutch travelers traveling in groups, this often leads to confusion about the correct advice and consequently may lead to a diminished adherence to the advice given and compliance with prescribed medication. The Polder Model applies primarily to the Dutch economic system in which all social partners involved in the economy collaborate to decide on the salaries and wage and on other factors involved in economic advancement. This has worked very well and the economy in the Netherlands is flourishing. The same model is applied to the decision making process in Travel Medicine. The model implies that everyone involved in Travel Medicine should have their say and that decisions are reached through consensus. This approach does not ensure that the most knowledgeable people set standards but it encourages the cooperation of all parties involved in Travel Medicine since everyone can have an input in formulating national standards and guidelines. Other advantages are that academically brilliant guidelines are given a more practical public health orientation. Reaching consensus through getting everyone's opinion on a certain guideline consumes time and money. The costs are covered by the users of the information. The financial contribution pays for the maintenance and up-dating of the travel health advice. The MOH's Health Inspectorate uses the guidelines and standards that have been formulated in this consensus group as the national standards. The quality of the advice given by the different physicians is checked using these standards. This system can improve standardization and quality in Travelers Health Advice.

In the past few decades, travel medicine has evolved from a cottage industry to an interdisciplinary subspecialty with a unique knowledge base. With over 50% of travelers to developing countries suffering some health impairment, there is a need for specialized travel clinics that offer education in the prevention of, self-treatment of, and management of illnesses in travelers. Studies in the last 10 years have highlighted the poor quality of information obtained from travel agencies, tour operators, embassies, consulates, as well as from primary care providers. Involvement in the various local travel medicine organizations and/or in the International Society of Travel Medicine (ISTM) has improved health advisors' level of knowledge. Many of these societies offer educational opportunities, the ISTM providing a newsletter, journal, web site, and biennial conferences. As travel and commerce have promoted the development and spread of emerging infectious diseases worldwide, it has become more important to improve our ability to identify these threats and respond to them. The ISTM, through a cooperative agreement with the CDC, developed a sentinel network for monitoring emerging infectious diseases. The concept of the GeoSentinel network is that travel clinics are ideally situated to detect emerging infections with potential global impact at their point of entry into a given population. Surveillance began in 11 GeoSentinel sites and has now grown to 21 sites worldwide. Travel medicine advisors, through their clinics, can play a key role in the education and care of travelers, and can assist in monitoring for the spread of emerging diseases.

Protecting the health of travellers is an imprecise science. Deciding on a traveller's health risks for a specified journey, needs to take into account the individuals perceived health risks alongside the advisors risk assessment for the planned journey. The advisor needs to appreciate the concerns, fears and knowledge of the traveller in order to formulate and provide appropriate advice to protect the traveller against the most probable health risks. These should be based on evidence based research and should be problems for which an intervention is feasible, appropriate and cost effective. The methods of communication should be relevant to the traveller while the advisor should be sensitive to concerns expressed by the traveller. A number of studies have looked at pre-consultation knowledge of travellers using both population and clinic based cohorts: Many travellers have unsubstantiated concerns over diseases and infections of which they are ignorant. They are often unaware or have no appreciation of the risks shown by research, to lead to morbidity. These include trauma, road accidents, cardiovascular events and exacerbations of pre-existing conditions.

This paper will examine knowledge and attitudes of travellers and compare these to established patterns of health risks and morbidity.

Measures to prevent ill-health abroad will be reviewed. These include immunizations: 1) yellow fever vaccination for which an international vaccination certificate may be required; 2) an update of the primary vaccinations (tetanus, diphtheria, poliomyelitis); 3) frequently required travel-related vaccinations (hepatitis A, typhoid fever); and 4) travel-related vaccines for particular itineraries (hepatitis B, meningococcal meningitis, rabies, Japanese encephalitis, exceptionally tickborne encephalitis and BCG). Many vaccines may be administered simultaneously.

These measures also include malaria prevention: 1) the risk of malaria; 2) personal protection measures; 3) chemoprophylaxis (chloroquine, proguanil, mefloquine, doxycycline; possible side effects; 4) warning against altering their regimen because of non-expert advice; (4) importance of an early diagnosis in case of possible malaria and sometimes the need for a stand-by treatment for urgent treatment. Recommendations need to be tailored to the individual needs. Chemoprophylaxis should not be automatically prescribed to all travellers to countries where malaria exists.

Additional important topics are: 1) information about food and water hygiene; 2) basic medical travel kit; 3) behavioral measures related to sexually transmitted diseases, sun-exposure, accidents (traffic, swimming, alpinism, alcohol); 4) medical insurance; and 5) animal contact, schistosomiasis, motion sickness, problems related to air travel, jet lag, altitude.

These measures are intended to reduce the health risks associated with travel. The responsibility of the individual is an important aspect. Concise and clearly written handouts play an important role to complete the information given and to help the recall of what has been said during the consultation.

An overview will be given of the important factors that determine “cabin air quality”. The following items will be discussed: relative humidity, carbon dioxide, virus and bacteria transmission, ozone and smoking on board.

The possible health effects are considered. Countermeasures that can be taken, such as humidifiers and specific filters are also discussed.

The (non-) possibility of transmission of tuberculosis will specifically be addressed. The airline industry developed some guidelines that are followed when airlines are notified by health authorities that they may have transported a passenger with active tuberculosis. These guidelines will be presented.

In 1991 the International Commission on Radiological Protection (ICRP) advised that exposure to of flight crew to cosmic radiation should be classified as occupational exposure. The recommended maximum mean body effective dose limit is 20 mSv per year for classified workers, with the equivalent dose to the fetus not exceeding 1mSv during pregnancy. Principal whole body limit for the general public is 1 mSv per year. An EU Directive requires exposure rates to be recorded, with a systemic assessment of the dose of any worker likely to receive more than a control level of 6mSv per year. British Airways (BA) has monitored cosmic radiation exposure on the Concorde since 1976. In addition, measurements have recently been carried out in association with the UK National Radiological Protection Board (NRPB) on high latitude ultra longhaul Boeing 747-400 routes between London and Tokyo. The dose varies with the solar cycle, but the Concorde effective dose is in the range 12-15 μ Sv per hour at cruising altitude, and that for the B747-400 is around 5 μ Sv per hour. With current schedules, no flight crew member approaches the new occupational response limit although BA will monitor individual dose rates obtained from roster information and a computer model of the radiation field. Passengers will not be adversely affected by the limits.

Economic, social and medical circumstances have had a significant impact on the demographics of airline passengers. In turn, these changing demographics have affected airline operations. In the presentation, the various factors that have had an influence on the demographics of airline passengers will be reviewed and the response and responsibilities of airlines will also be scrutinized. Since the factors that have had an impact will not only persist, but will likely increase in the future, recognition of these influences is important in order that an appropriate response can be implemented by those who have responsibility for these passengers.

The spread of air travel, the ever increasing number of flights, falling prices and changes in leisure pursuits have all contributed to a substantial increase in the number of tourists who now take to the air. However, as a means of transportation, the aeroplane can sometimes present special problems to older or infirm passengers not encountered with groundbased vehicles. These passengers should seek medical advice regarding the suitability of an air journey for them.

In this context, the following points ought to be:

1. Extra demands are placed on the heart and circulatory system both by reduced overall air pressure (corresponding to the air pressure at 2,400 meters above sea level) and by reduced partial pressure of oxygen in the cabin;
2. Changes in air pressure, particularly while the aircraft is coming in to land, can lead to painful sensations in air-filled body cavities (middle ear, paranasal sinuses and gastrointestinal tract);
3. A low relative humidity may exacerbate problems in people suffering from respiratory disease;
4. The restricted opportunities for movement in the cabin can result in disturbances of blood circulation, particularly in the lower extremities (e.g. risk of thrombosis in patients with varicose veins);
5. The air passenger is however not at risk from cosmic rays or increased ozone level;
6. Some passengers may find the noise and vibration stressful. Sudden movement in three dimensions caused by turbulence may trigger air sickness;
7. About 60-70% of all travelers experience anxiety, triggered by a range of mental factors;
8. The IATA (International Air Transport Association) has issued recommendations on the advisability of air travel in connection with a range of diseases. These must be seen as empirical guidelines, and must be applied individually in the context of the particular disease or complaint in question.

Based on the patient's records, the general practitioner or hospital physician can give preliminary guidance. The airline's medical service will then offer an individual consultation. In addition, Lufthansa AG maintains a network of company physicians at all destinations. These carefully selected and specialty-trained doctors will not only determine whether the patient is fit to continue his or her air journey, but also where necessary will begin procedures for arranging repatriation flights in cases of medical emergency.

Studies in space are driven by the need to explore how man could survive spaceflight conditions and return to Earth in safety. The monitoring of space craft for the presence of health-threatening micro-organisms is essential for the crew's health and well-being and for the successful completion of the mission.

Hazards deriving from microbial pollution are increased by microgravity, small rooms, radiations, water, and recycled air. Stress-related conditions in space flight cause the alteration of the human immune system function. Thus, even innocuous constituents of normal-Earth environment and normal endogenous flora could be potential pathogens during long-duration space missions. The most frequent infectious diseases of space crews are: cutaneous infection, upper-respiratory tract infections, colds, stomatitis, conjunctivitis, diarrhea, otitis, urinary tract infections.

Experiments carried out in the space station Euromir 95, planned to be in orbit for a number of years, were performed with the polymerase chain reaction (PCR), a technology which may detect a single microbe and fungus by replicating a specific segment of microbe and fungus genome to a concentration sufficient for detection and characterization. Samples gathered aboard the Euromir 95 vehicle were analyzed on ground, even months later the micro-organisms were collected, as microbe and fungus genome remains intact for years. We are now studying the application of this method directly in space laboratories. This should be important for monitoring microbial contamination in long-distance missions, such as the Mars mission 2001, as it allows the crew to make rapid decisions for the prevention and treatment of infectious diseases in space travels.

Aerophobia: psychopathological features and preliminary data on treatment results.

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According to the latest data, about a 50% of the Italian population is afraid of flying by airplane. Among these people we can find some who still fly showing more or less discomfort, some who have only one flight in their history, before stopping, and some who have never flight at all. The magnitude of such epidemiological data gives rise to some considerations concerning diagnostic and therapeutic issues, first of all recognizing and legitimating a diagnostic specificity to the flying fear, secondly defining a therapeutic approach targetted to each subject.

In this paper the Authors present the preliminary data of an ongoing study on a population attending a two-day workshop on aerophobia issued by Alitalia. The sample is formed by one-hundred subjects, males and females, aged from 25 to 65, with different social, educational and occupational background, who spontaneously ask to attend the workshop. This divided in a psychological part, focused on behavioural techniques such as systematic desensitization and relaxation training, supported by a technical part (talks with captains and visit to the maintenance area) and a practical one (flight simulator and real flight). The results show how what we usually refer to as aerophobia is, as a matter of fact, a complex kind of disease, ranging from simple phobia, to separation anxiety and to agoraphobia with or without panic attacks. Such complexity should be kept in mind approaching the single subject, even in a group situation. The data also show a significant success of this kind of workshop, very likely pointing to group dynamics, mutual help, awareness, knowledge and learning to control physiological and psychological arousal as some keys of this success.

Abstract not received

Use of Malaria Prevention Measures by European and North American Travellers to East Africa.

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Objective: To assess use of prevention measures against malaria by travelers to East Africa.

Materials and Methods: A cross sectional survey of 15,487 airline passengers departing Nairobi and Mombasa airports with European destinations in August 1997.

Results: Questionnaires were received from 6,633 passengers (42%). Of these, 5,919 travelers were residents of Europe (75%) or North America (25%), stayed <1 year and visited areas with malaria. More than 90% of travelers were aware of malaria risk and had sought pretravel medical advice. Only 5% of travelers did not use any malaria prevention measures.

Mefloquine was the drug of choice for 89% of US and 67% of European travelers using chemoprophylaxis (Dutch 86%, Italian 83%, German 78%, French 68%, UK 47%). Chloroquine with proguanil was used by 44% of UK and 21% of French users of chemoprophylaxis. Compliance was poor among those under age 40, persons who traveled for reasons other than tourism, those who stayed longer than 4 weeks, those who reported adverse health events, and those who used doxycycline or chloroquine/proguanil. Neuropsychological adverse health events were reported by 1-14% of mefloquine users, depending on the country of residence.

Conclusion: Effective and well tolerated chemoprophylaxis against malaria is available but not always used by travelers to East Africa. Health information needs to be targeted to travelers who are likely to use suboptimal chemoprophylaxis or to be non-compliant with prophylaxis.

Blood films have been used for malaria diagnosis for more than 100 years and, in the best laboratories, can detect parasitaemia as low as 0.0001%. Alternative methods, such as acridine orange staining and fluorescence, antigen detection ELISA or polymerase chain reaction, all require laboratories.

ParaSight F and ICT malaria Pf are immunochromatographic antigen capture assays for the detection of histidine-rich protein 2 (HRP2) of *Plasmodium falciparum*. OptiMAL is an immunochromatographic technique which detects parasite lactate dehydrogenase from *P. falciparum* and *P. vivax*.

HRP2-based assays have good sensitivity and specificity of *P. falciparum*, but do not detect the other 3 species of malaria parasites infecting humans. OptiMAL so far appears less sensitive than the HRP2-based assays for the detection of *P. falciparum* but is also able to detect *P. vivax*.

The advantages and disadvantages of using these new methods for malaria diagnosis will be discussed.

Anti-malaria Prophylaxis: Use and Adverse Events in Travellers to the Kruger National Park, South Africa.

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Background: The Kruger National Park (KNP), South Africa, is the largest African game reserve in one country and is visited by nearly one million travellers each year. This area of southern Africa is classified as being high-risk for malaria but little is known about antimalarial prophylaxis use or the occurrence of adverse events (AEs) in KNP visitors.

Methods: Chemoprophylaxis use and the relative frequency of AEs with different anti-malarial regimens was retrospectively explored, by postal questionnaire, in a cohort of 7397 KNP visitors. Any report of neuropsychiatric AE necessitating medical attention was investigated by telephone with the traveller and their treating physician.

Results: Chloroquine and proguanil in combination (CP) (35.8%) and mefloquine (18.4%) were the regimens most commonly used. Inappropriate regimens included chloroquine alone, which was used by 15.7% of travellers to this chloroquine-resistant area. AEs were reported by 23.8% of travellers and were more common in the CP group than the mefloquine group (28.9% vs. 25.0%, $p=0.010$). Gastrointestinal side-effects were significantly more common in the CP group, while neuropsychiatric side-effects were significantly more common in the mefloquine group. Only 30% of this cohort of travellers reported using anti-malarial drugs both regularly as prescribed and for four weeks after leaving the malaria area. The most common reason reported for changing prophylaxis was physician or pharmacist's advice (41.9%).

Conclusions: Health professionals' advice influence anti-malarial prophylaxis use. Individuals providing travel advice have a responsibility to assist travellers in weighing the risk of malaria at a specific destination against the risk of prophylaxis-associated AEs. Where drug measures are indicated, the importance of compliance and post-travel completion of prophylaxis must be emphasized.

STD cases in 1984 are compared with those in 1995.

An analysis has been made about the changes in shipcrew, the number of seamen and the changes in their way of life. An explanation will be given why these changes affect the numbers and types of diseases seen in Rotterdam Harbor.

In 1984, 30,958 ships with a gross weight of 255,513 BBT visited Rotterdam Harbor. In total more than 460,000 seamen were on board, average more than 15 seamen per ship. In 1995, 29,283 ships arrived on Rotterdam Harbor, gross weight more than 375,170 BRT on board with a total of 290,000 seamen, so less than 10 seamen per ship.

Despite the same number of ships, fewer seamen came to Rotterdam Harbor. As in 1984, the crew were from European, African and Asian countries. In 1995, the majority of the crews were Asia (The Philippines).

In 1985, 300 cases of UTI were seen of which 51 cases of gonorrhoea. 21 of the gonorrhoea cases were already penicillin-resistant. In 1995 the number of STD cases was half that seen in 1984.

The changes in shipcrew had a large influence on the types of diseases seen in Rotterdam Harbor. However, many other diseases, not so easily treated as STDs, will likely be seen in the future.

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The evolution of Health Care on board the modern cruise liner.
The figure of the Italian doctor.

ALBERTO ORIGONE, *President of the National Association Ship's Doctors, Italy*

Ladies, Officials, Gentlemen, distinguished Colleagues,
in my capacity as President of the National Association of Ship's Doctors I have accepted with great pleasure Dr. PASINI's invitation to discuss a subject which has been my business for so many years: the figure of the Ship's Doctor and Health Care on board cruise liners.

Since 1970, that is from when I became President of the Association, I have sought, within the framework of my responsibility, to achieve more rapid and efficient development of Health Care on board ship.

I have not for this forgotten merchant ships and their problems. I have in fact promoted and brought into being, with my friend Prof. TORTORI DONATI, formerly Medical Director of FINMARE, the first courses in Italy of medical training for officers of merchant ships without a Ship's Doctor. These courses, which last one month, took place in the hospital where I held the position of Chief of Surgery and later became obligatory with the law of 1982 which established that no merchant ship without a Ship's Doctor could sail from an Italian port unless carrying an officer who had successfully completed the course.

Not everybody is aware that the practice of medicine on board ships dates from ancient times, and not everybody knows of the great contribution to science made by the Ship's Doctor across the centuries.

The first mention of doctors on board ship comes to us from Mythology.

Seamen are a special category of travellers. Travel is an essential part of their professional life and the associated health risks are occupational risks. Three special factors need to be taken into account when providing health advice: 1) seamen usually stay in ports and coastal areas, 2) the living conditions on board with mixed, multi-cultural crews, and 3) the isolation from professional medical care for periods that often exceed the incubation period of several infectious diseases.

Travel medicine has often focused on tourism, air transportation, and business travel but it needs to include also the health aspects of seamen. For instance, important issues for seamen are the obligatory vaccination for yellow fever and the problems with some port authorities on cholera validation due to different national regulations. Such requirements need to be standardised.

Contact with seamen should not only include vaccination and certification but also advice on prophylaxis for malaria and on other preventive measures, e.g. for STD. This may require information designed specially for seamen in the form of leaflets, counselling, and permanently updated information through radiostations and computernetworks.

Travel advice is an important part of maritime medicine. Other components include medical selection and occupational medicine. Travel health advice is an important means to strengthen or restore the confidence from the customer in the medical practitioner.

Increasingly, cruises combine tourism and health care. The Croatian part of the Adriatic coast presents extensive tourist cruises in a Croatian tourism strategic development program. Big passenger ships have become floating hotels for cruises in the last 30 years because of cheaper and faster air travel. Besides mega-cruises by large ships accommodating over 2000 passenger-tourists, mini or weekend cruises in coastal waters are becoming increasingly popular. When a congress or a symposium takes place during such shorter cruises, they are referred to as "meeting cruises". This form of cruises is potentially very suitable for certain forms of health tourism. The conditions of staying abroad a passenger ship have improved considerably but it has not yet been shown that they have resulted in a reduced morbidity of passengers-tourists and the crew. Health problems on cruises are characterized by their own features, and consequently the term "cruise ship medicine" was introduced to maritime medicine. Students of hotel management, physicians, tourist and maritime professionals should be acquainted with these matters, and actions aimed to study, develop and possibly, commercialize this idea should be initiated. Croatia would be a good location for such actions.

Pre-employment screening for different disorders is essential for seamen. This screening includes system examination and evaluating adaptation to different occupational hazards, as well as consideration of permanent or temporary work exemption for people with severe conditions that may be adversely affected. Besides the medical examination, doctors need to assess stress and the need for preventive measures, including social and team support, infectious diseases and hygiene measures, dermatologic and allergic problems, and musculo-skeletal disorders. Each seaman has to take measures to improve adaptation to circadian rhythms, to length and quality of sleep, to night work, digestive problems, psychosomatic complaints. Professional training courses should address preventative measures and strategies to improve the tolerance of the occupational demands.

Several environmental and professional factors can induce damage of the nervous system. Psychometric tests are an information approach in exposure identification and its potential impact on brain intellectual function. The relation between scores of such tests and subjective neurotic symptoms, duration of exposure, and some biological indicators of exposure were investigated.

Method: Exposed workers and controls were interviewed. Laboratory tests were conducted of indicators of exposure, psychometric and behavioral evaluation. There were tests that indicated immediate and remote memory, abstract thinking, attention and tests of personality.

Results: Compared with controls, the exposed seamen showed significant lower performance in all the used tests for early detection of effect of exposure to nervous system from different agents of environmental factors. The necessity of using such tests was indicated by its correlation with the duration of exposure, subjective neurotic symptoms and biological parameters of exposure.

Nautical tourism is one of the fastest developing forms of tourism in Croatia. Every year before the war more than 300,000 tourists had been sailing in our coastal waters. Such a large number of the nautical tourists and their specific position in sailing, differs them from other tourists and demands a special approach to the organization of their medical aid at sea. We will present a survey of sea accidents of small boats and yachts, in the northern area of the Adriatic Sea, that was collected from the Coast Guard Office protocols in a five year period.

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Tuberculosis in a Low Prevalence Country - Experience from Norway.

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National Health Screening Service and Epidemic Section at Ulleval University Hospital 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 5.0 in 1996, among the lowest in Europe. TB in immigrants accounted for 46% of our cases in 1996. 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 under diagnosed. 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 TB is rare in Norwegian-born patients, but in immigrants 10-25% are resistant to isoniazid depending on the continent of origin.

Dengue virus, types 1-4, is the cause of dengue fever (DF). DF is classified by degree of severity: classical dengue fever, dengue hemorrhagic fever (DHG) and dengue shock syndrome (DSS). Dengue viruses belonging to the family Flaviviridae are transmitted principally in a cycle involving humans and mosquito vectors. DF is endemic and epidemic in tropical Africa, America, southeast Asia and Oceania.

Aedes aegypti and *A. albopictus* mosquitoes are known as natural vectors of dengue viruses. Since about 10 years, *A. albopictus* has been introduced also in Europe, in Italy and Albania. These introductions were due primarily to import of 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.

DF is a risk for tourists who have traveled to tropical countries. In Italy, several cases of dengue imported infection are serologically diagnosed each year. Serology is performed by the hemagglutination inhibition test. Seroconversion or a 4-fold titre rise was registered in most of the patients. Other cases were diagnosed as DF on the basis of a high antibody titre in serum samples and the epidemiological background. Dengue virus is the most commonly diagnosed imported arbovirus infection among Italian travelers returning from dengue endemic areas.

The syndrome of creeping eruption (sandworm disease or larva migrans cutanea) is becoming a common condition in Czech tourists returning in increased numbers from tropical countries. The majority were infected at the beaches and their surroundings. Most of these eruptions in our patients were due to the Nematode larvae infection of *Ancylostoma braziliense*, *A. ceylonense* or other species of *Ancylostoma*, less common of *Strongyloides* species. Dogs are usually identified as reservoirs of these nematodes.

The larvae develop serpiginous, erythematous itching erratic filariform tunnels between stratum germinativum and stratum granulosum penetrating a few millimeters or centimeters in the skin during one day. The larva can not usually be detected in the specimen of the skin collected of the visible serpiginous eruption, because the development of the skin reaction is slower than the penetration. The differential diagnosis should include the inflammatory skin reactions in schistosomiasis, strongyloidiasis, ancylostomiasis, nectoriasis, gnathostomiasis, trichobilharziosis and cutaneous myiasis.

Albendazol is considered as a drug of choice in creeping eruption. Preventive measures are discussed.

Hepatitis E virus (HEV) is recognized as the primary etiological agent responsible for enterically transmitted non-A, non-B hepatitis in Asia, Africa, Central America and the Middle East. Among adolescents and adults in these regions of the world, HEV is the most common form of acute hepatitis. In this report we summarize our experience of acute HEV among travelers and reported cases in the literature. There were 160 cases of acute HEV related to travel to endemic areas (118 individual travelers and 42 French soldiers).

The travelers were from 9 different countries. Most cases contracted HEV in the Indian subcontinent. Other destinations included Africa, Mexico and China. The average age of these travelers was 31.4 (range 17-65). Among these travelers, there were two deaths from fulminant HEV (one in a 59-year-old woman from Sweden, the other a 65-year-old man from Italy who had chronic Hepatitis C. There were two other severe cases of HEV, both in women in the third trimester of pregnancy.

The French soldiers were serving in Chad, Somalia and Djibouti. They were all male, with an average of 24.8 (range 20-39). All soldiers recovered from acute HEV.

Given the numbers of travelers to HEV endemic regions, it is surprising that reports of HEV among travelers are not greater. In contrast, Hepatitis A infection, which has an identical mode of transmission, is frequently reported in unvaccinated travelers. Explanations for this could include:

- 1) a low index of suspicion on the part of health care providers not familiar with HEV and therefore not considering the diagnosis in returning travelers;
- 2) a lack of reporting mechanisms for providers who diagnose HEV;
- 3) the possibility of the traveler having recovered from acute HEV infection by the time of return to home country;
- 4) a low incidence of HEV in travelers.

In 1994 there were some 50,000 cases and about 2000 deaths from diphtheria in the countries of the former USSR. With "Glasnost" the borders were open, so that the outbreak of diphtheria in these countries posed a threat to neighboring countries.

Serological studies in Germany show that there is a high immunization coverage against diphtheria in children. However, a significant portion of the adult population shows unsatisfactory protection. About 2/3 of the population between 30 and 40 years of age have no or very limited titres of antibodies against diphtheria. In order to prevent an endemic outbreak 90% of the children and 75% of the adults have to be immunized. The need for a booster vaccination for adults is obvious from these data. In Germany booster vaccinations are recommended every 10 years. However, usually more than 10 years elapse. It is therefore of special interest to know whether there is a need for one, two or even more boosters. This was the objective of a clinical trial.

Results: A single dose of a diphtheria vaccine (Chiron Behring) is sufficient in order to achieve protective diphtheria antitoxin levels irrespective of the time since primary immunization. A second dose 4 weeks later has only a minor effect. Whether or not the two boosters will cause prolonged protection levels is subject of a follow up investigation.

Twinrix: accelerated schedule for rapid protection

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Hepatitis A and B are prevalent infections around the world and are a significant cause of morbidity and mortality. A combined vaccine providing dual protection against hepatitis A and B (HAV and HBV) is available (Twinrix™, SmithKline Beecham Biologicals) and has been proven safe and effective. For some travelers there is a need to be protected against both diseases as soon as possible. This study evaluates an accelerated schedule to accomplish this.

We report on the preliminary results from a study where healthy adults were given Twinrix™ in an accelerated schedule. 479 subjects were enrolled and randomly allocated to one of the two groups. The first received Twinrix™ in a 0-7-21 day schedule with a booster planned at month 12. A control group were given the corresponding monovalent vaccines in opposite arms: Engerix-B™ and Havrix 1440™ (both SmithKline Beecham Biologicals) on day 0; Engerix-B™ on day 7 and 21 with a booster of both vaccines planned at month 12. For a subset of subjects serology data until month 3 are available. Seropositive (S+) titres for HAV are ≥ 33 mIU/ml and seroprotective (SP) titres for anti-HBs are ≥ 10 mIU/ml. Geometric Mean Titres (GMT) are given in mIU/ml. Preliminary data are given in the table.

Twinrix™ (day 0, 7, 21)						
	anti-HAV			anti-HBV		
	n	SC (%)	GMT	n	SP (%)	GMT
Month 1	90	100	832	109	82	123
Month 2	84	100	956	108	86	83
Month 3	60	100	662	59	97	247
Havrix 1440™ (day 0) + Engerix-B™ (day 0, 7, 21)						
Month 1	88	99	490	111	86	135
Month 2	85	99	295	112	88	85
Month 3	62	98	212	61	97	204

The data show that Twinrix™ vaccination can provide rapid protection against both hepatitis A and B. One week after the third dose >80% of subjects are protected against hepatitis B and all subjects have seroconverted to anti-hepatitis A with high levels of antibodies.

The diagnosis, species identification of malaria and its follow up after therapy can be inappropriate especially when a blood film containing scarce number of malaria parasites is examined by untrained microscopists. Thus, various sensitive PCR methods for malaria parasites have been reported; however, most of them require laborious procedures such as organic DNA extraction or gel electrophoresis. During the past several years, we have been applying a novel PCR assay with micro titer plate hybridization to the clinical practice of imported malaria, which amplifies the 18S rRNA gene and is species specific.

69 cases of falciparum and 51 cases of vivax malaria were tested and yielded a 98-100% sensitivity. Some of the cases might have been overlooked by microscopic examination because of the very few numbers of parasites after taking antimalarials. With regard to ovale malaria, 19 cases including relapsed ones were tested. 14 showed a positive PCR result. Sequence analysis of the other 5 PCR-negative *P. ovale* showed nucleotide variations compared to the conventional sequence, and by incorporating this new ovale probe, PCR diagnosis of ovale malaria has become complete.

We then asked how long the PCR assay remains positive after the curative treatment of falciparum malaria. PCR positivity becomes negative within 4 days after the microscopy becomes negative. We observed a case of falciparum malaria whose PCR positivity lasted over that term followed by recrudescence. We expect that the recrudescence of falciparum malaria could thus be predicted with the serial PCR measurements.

It is concluded that the PCR assay could be an excellent supplementary tool to microscopy for improvement of the clinical management of malaria.

Two Norwegian families (nine persons, age 7-82 years) went on a holiday to Zimbabwe from 17-27 February 1996. Five of the participants had lived two years in Zimbabwe from 1991-1993. Chloroquine prophylaxis was started one week before departure and proguanil at the day of departure. Both drugs were continued after returning to Norway, until hospital admission. In addition, insect repellents and mosquito nets were used carefully. There had been abundant rain in Zimbabwe before their holiday. The itinerary included Hwange National Park, Victoria Falls and the Zambesi River. They spent one night in tents at the Zambesi river, the other nights were spent in hotels with mosquito nets. After the night in tents the participants counted five to one hundred mosquito bites each.

Six of the participants got falciparum malaria within one month of returning to Norway. None of them were seriously ill and all had parasite counts of less than one ring form per 300 erythrocytes. All were swiftly cured after oral mefloquine treatment. The risk of contracting malaria may be high although thorough prophylactic precautions are performed.

Biological Activity of *Cassia occidentalis* against Malaria.

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Introduction: Malaria is a significant cause of morbidity and mortality worldwide. It is important to find new effective antimalarial drugs, since multi-drug resistance has been frequently reported. Many research institutes are investigating plants used in traditional medicine to search for active compounds against *P. falciparum* malaria. The use of *Cassia occidentalis* bark as a popular remedy against malaria fever in some countries of Africa (Angola) moved us to test its activity on continuous culture of *P. falciparum*.

Methodology: an infused bark of *Cassia occidentalis* (2.5g *Cassia occidentalis* in 29 ml distilled water), prepared as a traditional medicine, has been evaluated, at different degrees of dilution, in a 6 day period for its activity against *P. falciparum* chloroquine-resistant strain (ITO 4) in erythrocyte suspensions.

Results: The number of parasites decreased significantly in a dose-dependent manner, as shown in the table.

Conclusion: These results seem to confirm the antimalarial efficacy of infused bark of *Cassia occidentalis*. The next step will be the identification of the *Cassia occidentalis* compound acting as antimalarial agent.

Background: In hyperendemic areas *P. falciparum* (Pf) causes more than one million deaths per year. Malaria cases are also observed in non-endemic areas among returning travelers from tropics and a 2% case fatality rate is reported in Europe. Increasing travel, non adherence with prophylaxis, delayed diagnosis and treatment and Pf resistance are main causes of imported malaria.

Clinical Cases: Between January 1991 and December 1997 51 malaria cases were admitted in our hospital: M/F 39/12, mean age 30.6 years, mostly African immigrants resident in Italy 30/51, European tourists 16/51, European residents of Africa 5/51. A seasonal case distribution was observed: 25/51 in Aug/Sept mostly among African immigrants returning from homeland and 16/51 in Dec/Jan mostly European tourists from exotic destinations. Only 3/51 patients (all European) reportedly had used correct prophylaxis; 2/51 stand-by treatment (Chloroquine course for Pf). Plasmodium species were represented as follows: Pf 44/51, *P. vivax* 5/51, *P. malariae* 1/51 and mixed infection (Pf and *P. malariae*) 1/51. Mean hospital referral delay was 5.3 days, but on admission the treatment was promptly started with quinine (35/51), chloroquine (6/51), mefloquine (6/51), chloroquine plus primaquine (3/51), quinine plus primaquine (1/51). Main complications: multiorgan syndrome requiring intensive care (4 patients including one fatal case and a body with reversible lower limb paralysis).

Conclusions: 1) an increasing rate of imported Pf malaria was observed especially among African immigrants possibly in consideration of waning immunity and non adherence with prophylaxis; 2) a bimodal seasonal year case distribution was observed in summer (mostly African patients), in winter (mostly European); 3) case fatality rate was 1.9% (1/51), consistent with mean European rate; 4) malaria diagnosis and treatment rely on a high clinical suspicion index. In our patients both fatal and complicated cases were misdiagnosed at home as influenza and therefore treatment was delayed.

MALARONE (atovaquone and proguanil hydrochloride) for Treatment of Malaria.

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The continuing spread of drug-resistant malaria emphasizes the need for new antimalarial drugs. Atovaquone is a broad-spectrum antiprotozoal drug with a novel mechanism of action, via inhibition of parasite mitochondrial electron transport, and a favorable safety profile. Early studies with atovaquone alone for treatment of malaria demonstrated good initial control of parasitemia but an unacceptable rate of recrudescence. Parasites isolated during recrudescence after treatment with atovaquone alone were resistant to atovaquone in vitro and had point mutations in the cytochrome b gene. The combination of atovaquone and proguanil is synergistic in vitro, and clinical studies with this combination have demonstrated excellent efficacy for treatment of malaria. MalaroneR, a fixed dose combination of 250 mg atovaquone and 100 mg proguanil hydrochloride, is approved in many European countries for treatment of acute, uncomplicated malaria caused by *Plasmodium falciparum*. At the recommended dose (in adults, four tablets once daily for 3 days), the overall cure rate was >98% in more than 500 patients with *falciparum* malaria. In four randomized, controlled clinical trials, treatment with atovaquone and proguanil hydrochloride was significantly more effective than mefloquine (Thailand), amodiaquine (Gabon), chloroquine (Peru and the Philippines) or chloroquine plus pyrimethamine/sulfadoxine (Philippines). In clinical trials where the comparator drug was highly effective, treatment with atovaquone and proguanil hydrochloride was equally effective. Parasites isolated during recrudescence after treatment with the combination of atovaquone and proguanil are generally not resistant to atovaquone in vitro. The most commonly reported adverse events in clinical trials (abdominal pain, anorexia, nausea, vomiting, diarrhea and coughing) generally occurred with similar frequency in patients treated with the comparator drug. MalaroneR is a promising new alternative for treatment of drug-sensitive and drug-resistant malaria.

MALARONE (atovaquone and proguanil hydrochloride) for Prophylaxis of Malaria.

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Plasmodium falciparum infection remains one of the greatest causes of morbidity and mortality in the tropical and sub-tropical parts of the world. Unfortunately the parasite has become resistant to many of the drugs used for both the treatment and prophylaxis of malaria and therefore poses a major risk not only to the people living in these endemic areas, but also to those traveling there. Consequently, there remains an urgent need for new, safe and effective, antimalarial chemoprophylactic drugs. MalaroneR (250 mg atovaquone/100 mg proguanil hydrochloride), has been approved in many countries for the treatment of acute, uncomplicated *P. falciparum* infection. More recently a series of Phase II and Phase III clinical trials have been conducted in over 1000 volunteers in highly endemic countries in east, west and southern Africa to determine the efficacy and safety of MalaroneR for the short-term prophylaxis (10 to 12 weeks) of malaria in adults and children. Three of the studies were randomized, double-blind, placebo controlled trials while the fourth was an open-label study in non-immune military personnel. A failure of prophylaxis was defined as any subject who developed parasitemia on blood smear or who was withdrawn from the trial because of a treatment-related adverse event. With the exception of the initial Phase II dose-ranging study subjects received 250 mg atovaquone/100 mg proguanil hydrochloride (or equivalent based on body weight for children) once daily after food. The overall efficacy rate for MalaroneR in the three placebo-controlled trials was 98% and the overall success rate for all four studies was 99%. The most commonly reported adverse events were headache, myalgia, abdominal pain, upper respiratory tract infection, pain, nausea and vomiting. These occurred with similar frequencies in subjects treated with placebo. No treatment-emergent effects were evident for any of the hematology or biochemistry parameters measured. The data suggest that MalaroneR is a safe and effective new alternative for the prophylaxis of *P. falciparum* malaria.

Every year more than 100,000 migrant farm workers accompanied by their families arrive from the South-Eastern Anatolia region in Turkey in Adana Province, Çukurova region, located at the Mediterranean coast of Turkey. They live outdoors in tents and they inappropriately and irregularly use medications for their diseases. We conducted a study between March and October 1997 to determine the frequency of malaria among these migrant farm workers immigrating to the Çukurova region, to treat cases of malaria (with primaquine and chloroquine), to provide new coming workers with chloroquine for malaria prophylaxis, and to educate workers about the disease. Thin and thick blood smears were collected from patients arriving at the primary health centers with complaints suggesting malaria or those visited at their local tents by mobile health teams. Of 7494 blood smears obtained during a period of 8 months and examined at the Adana Province Malaria Institute, 210 were positive for malaria (2.8%, male to female ratio 3.2% to 2.5%). The positivity rate was highest in July with a percentage of 4.9% (57 cases of malaria). Among 210 cases of malaria, 108 (51.4%) were male. The frequency distribution at 0-4, 5-14, 15-64 and 65 years old and older age groups was 10 (4.8%) cases, 51 (24.3%) cases, 118 (70.3%) cases and 1 (0.4%) case, respectively. Because malaria is an important health problem in our region, all migrant farm workers should be included in chemoprophylaxis programs with chloroquine, environmental factors should be improved, and malaria mosquitoes and larvae should be controlled.

For travellers malaria is the most important of the tropical diseases. Individuals traveling to countries with malaria need advice on measures to prevent infection. Use of inappropriate prophylaxis is a major problem among travellers.

Aim: to analyze the epidemiological and clinical characteristics of imported malaria cases among travelers from Lombardy and to describe their use of malaria prevention measures.

Design and Methods: All cases of travel-associated malaria during 1989-1996 in the population (n=664.902) of the 3 Public Health Districts were included in a retrospective study based on individual records and personal contact (by phone).

Results: 85 cases of imported malaria were reported; 81.2% were males; 67.1% were non-immune Italians (mean age 37), while 28.2% were Africans (mean age 32). Only 4.7% involved children (<14 years); 68.2% (58) of the cases were due to *P. falciparum*. Two cases were died (case fatality rate = 2.4%). 39% of the patients traveled for holiday, 23% were immigrants returning from a visit to their family overseas. 66% of the patients did not use any chemoprophylaxis and 19% had insufficient doses or took the medication irregularly. Only 8% of the cases took adequate chemoprophylaxis. 82% did not consult a physician or an International Travelers Counseling Office before travel.

Conclusion: Most cases of malaria among travelers were due to non- or insufficient chemoprophylaxis prescription, ignorance of the malarial risk and non-compliance. Many neglected to take basic precautions against mosquito bites and did not take prophylaxis. Adverse drug effects were not a major problem. These results illustrate the variety of travelers and underline the importance of an individual counseling strategy. Detailed and updated information on correct chemoprophylaxis regimens should be provided especially to immigrants who visit their relatives.

Hyperreactive Malarial Splenomegaly Syndrome in Europeans: Description of 5 Cases.

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The hyperreactive malarial splenomegaly syndrome (HMS) is believed to represent an aberrant immunologic response to repeated malarial infections in long-term residents of malarious areas. The diagnostic criteria include: gross splenomegaly, high antibody levels to malaria, elevated serum (polyclonal) IgM at least 2 standard deviations above the local mean, hepatic sinusoidal lymphocytosis (HSL) and clinical and immunological response to prolonged antimalarial treatment.

Since May 1988 we have diagnosed 5 cases of HMS among Spanish residents in Equatorial Guinea (West Africa) for 16.8 years (range 9-30 years). The average period of time between the arrival to Spain and the first contact with our department was 14 days (range: 1-35). Sex F/M 3/2. Age 55-70 years (average 60.6). Asthenia 4, anorexia 3, loss weight 3, abdominal pain 2, asymptomatic 1, with positive HSL. Splenomegaly in all cases (12-18 cm. Average 13.4). Hepatomegaly 4, anemia 4, thrombocytopenia 3, high ESR in 5 (75-145, average 101). High serum IgM and malarial antibody levels in 5. Parasites were not found in blood in any of the patients. Bone marrow: increase of lymphocytes in the 5. Liver biopsy was performed in 3 patients, HSL in 3.

One patient was treated with quinine sulfate (total dose 13.6 gr) and 4 with halofantrine (1.5 gr), following prolonged treatment (6-12 months, average 8.8) with chloroquine base 300 mg/week. All patients showed a good response to antimalarials.

HMS should be kept in mind in Europeans with long-term residence in endemic areas and having suffered multiple malaria episodes. Only a few cases have been reported in Europeans.

Malaria is one of the important health problems in Turkey and the number of cases has reached more than 100,000 in the last 20 years. This study evaluates the situation of malaria in Turkey between 1985-1995.

Malaria begins to increase in March, peaks in July, August and September and decreases rapidly after October. For instance, the number of cases was 927 in December 1995 while it was 15,288 in July 1995. This situation is related to the climate of Turkey. According to the seasonal distribution, the number of cases was 3455 in the winter while it increased to 41,233 in the summer. In addition, a malaria map of Turkey has been developed and the country has been separated into 4 regions according to the degree of risk and health service priorities.

Malaria in Turkey has been associated with *P. vivax*, not so serious and fatal as *P. falciparum*. Moreover, the health services in Turkey are developed enough to offer adequate care for tourists.

Today, approximately 2 billion people in the world live in areas where malaria is endemic. Every year 160-170 million new cases emerge among this population. In addition, 2 million people die every year because of malaria and 1 million of these deaths occur among children under 5 years of age. Tropical and subtropical regions where malaria is endemic, have also the highest population growth rates. Thus, the number of people under the risk of malaria will reach to 3 million in a short time. The parasite is spreading in line with the increasing population movements. Moreover, high-risk regions for malaria have been enlarging due to the climatic changes. Mosquito and parasite control studies have come into a difficulty because of the increasing resistance towards insecticides and malaria drugs.

In the light of these facts, certain measures should be taken not to spread the mosquito and the parasite during tourist activities. Primarily, every country should control malaria within its population. Individuals living in endemic countries should be inspected for parasites before traveling abroad. Individuals who have traveled to an endemic country and returned should be tested by thick drop 2 times, 15 days apart. Every kind of vehicle should be adequately treated against mosquitos both in entering and leaving the country.

Today, chemoprophylaxis has lost its importance in the control of malaria. High-risk regions in terms of tourist health comprise countries where falciparum malaria is prevalent and health services are underdeveloped.

HUS following exposure to quinine is a newly defined clinical entity with few cases reported. The mechanism suggested is the quinine dependent production of autoantibodies reactive with endothelial cells. In reported cases quinine was usually given to prevent nocturnal leg cramps or was contained in beverages.

We report a case of HUS in a 49-year-old white woman who was given quinine because of malaria. In this setting, moreover, HUS made more difficult the interpretation of thrombocytopenia and hemolysis. After a trip in India the patient (pt) was admitted to the Infectious Diseases Division of our hospital because of fever, myalgia and vomiting. Blood tests showed mild anemia, thrombocytopenia (33,000 platelets/ul) and a slight increase in serum FCP, bilirubin and LDH. Urinalysis showed only mild proteinuria while renal function was normal. Examination of a thin blood smear allowed the diagnosis of malaria from Plasmodium falciparum and quinine sulfate was given (650 mg q8h for 9 days). Platelets normalized, pt recovered and on the 9th day was discharged. At a new evaluation 4 days later, the pt complained of malaise and headache. Blood cell count showed severe anemia and thrombocytopenia (Hb 6.9g/dl, Hematocrit 21%, platelets 48,000/ul) and a marked increase of LDH (2906 U/l). Persistent malarial infection was excluded on a blood smear examination. The direct Coombs test was negative. A diagnosis of HUS was made upon the presence of schistocytes on peripheral blood smear. The clinical picture deteriorated under treatment with fresh frozen plasma infusion at doses 25 ml/Kg/day for 3 days. Plasma exchange with fresh frozen plasma (1.5-2 plasma volumes, 7 cycles) produced a marked improvement of the main parameters and pt was discharged after 13 days with mild anemia, normal platelet count, almost normal renal function and minimal hematuria. At the follow-up all clinical and laboratory parameters normalized.

Our case suggests that quinine induced HUS may complicate quinine treatment for malaria. The entity should be kept distinguished from hemolysis and thrombocytopenia due to malaria per se. The former should be recognized promptly because quinine must be stopped and future exposure to it prevented. Finally, differently from HUS from other causes, in quinine induced HUS as well as in others possibly related to an ingested drug, plasma infusion is ineffective and pts need to be promptly treated by plasma exchange.

Diagnosis of Plasmodium falciparum Infection with the ICT-Malaria Test in Low Level Parasitemia Undetectable by Microscopic Examination.

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In January 1997 a 33 year old German presented with fever (39°C), chills and headache of 1 days duration, 5 days after returning from a six weeks holiday in South Africa and Zambia. He regularly took chloroquine and proguanil as antimalarial chemoprophylactic drugs.

The initial thick blood smear was negative. Other than a thrombocytopenia of 112.000/ μ l, moderately elevated liver enzymes, creatinine and beta-globulin, there was no abnormality. Due to the clinically suspected malarial infection the MalaQuick[®] test was performed twice. Both tests showed a positive result, however, five consecutive thick smears examined by expert microscopists within the following 12 hours did not reveal parasites. Due to the deterioration of the patient's clinical condition he was admitted to the hospital. The diagnosis of falciparum malaria could microscopically be confirmed in thick and thin smears (parasitemia <0.01%). A treatment with 3 x 500 mg quinine oral for 10 days was immediately started and the patient recovered without any complications. One day after the onset of treatment no parasites were seen in further thick smears.

In this patient using the MalaQuick[®] (the Australian immuno-chromatographic ICT-P.f. malaria antigen capture assay based on the detection of P. falciparum histidine rich protein-2 in peripheral blood), the detection of a falciparum infection was possible before parasites were seen in repeated microscopic investigations.

The growth in international travel has resulted in an increase of patients seeking health advice from the Public Health Services and primary care workers. Our International Travelers Counseling Office (ITCO) in the Preventive Medicine and Hygiene Service, established in 1990, to advise about behavioral aspects, preventive measures in eating habits (food safety), and several communicable diseases. Chemoprophylaxis against malaria is also important as well as immunizations.

Aim: to obtain a profile of the travelers and of services provided at the ITCO of the public health district #4 - Saronno, Lombardy.

Design and Methods: a retrospective study based on travelers' files and personal contact (by phone) in the period 1994-1997. Personal data, travel characteristics, and health advice was obtained from the records.

Results: during the 4 year period 1994-1997, 950 travellers to destinations outside Europe, were seen at the ITCO (52% males). 46% were between 21 and 30 years old, and 22% between 41 and 60; the main destinations were to sub-Saharan Africa (37%, mainly Kenya, Senegal and Tanzania) and Asia (40%, chiefly Thailand, India, Indonesia). The main reason for travel was pleasure (78%); in 40% of the cases the duration of stay was from 15 to 21 days; about 66% had a history of previous travel outside of Europe; inclusive tours were preferred by 50%; and travel agencies rarely inform their customers about travel-related health risks.

Conclusions: people who travel abroad prepare for cultural experiences, but not often for potential health problems. Healthcare awareness should be encouraged to have a successful trip and to avoid significant health problems during or after travel. Pre-travel medical preparation can help travellers to be more confident in dealing with health problems. The quality of health advice given by the ITCO largely determines the extent to which travelers will adapt their behavior especially in view of the difficulty of developing relatively simple recommendations for malaria prophylaxis. Compliance may be poor because of their complexity (the wide variety of malaria risk, the rapid development of resistance to chemo-prophylactic agents, and the potential toxicity of some regimens).

Venice's Port Health Office, since 1995, provides to international travelers complete information on the risks which may occur traveling abroad. The information is provided by country of destination through the Internet. While traditional information is often not available in real time, this new media can reach the single traveler at home. All the sources of information are well controlled and reliable. Primarily they are WHO, CDC and the Italian Health Ministry. In addition, more detailed information is given, on request, by e-mail.

The author stresses: a) the fact that information given through the web can only augment personal advice given by the family doctor or other health services; b) in order to avoid abuses, a regulation of Internet health information is needed.

Proposal for the Organization of a Medical Center for Travelers within the Department of Preventive Medicine.

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The offices of international preventive treatment first came into being as clinics for yellow fever vaccinations and for the issue of certificates as set out by the International Health Regulations.

The steady increase of mobility of the population for tourism and work necessitated the reorganization of such a clinic.

The aim of the present task is that of drawing up possible organizational steps for a Medical Center for Travelers and described in the following points: 1) Information and advice for international travelers, before and after traveling; information for General Practitioners on the aspects of epidemiology, both clinical and preventative on imported pathologies, and 2) Collaboration with doctors in charge of entities which operate abroad.

Health Status, Health Behavior and Health Resources of Foreign Compared to German Students at the University of Bielefeld.

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Objective: we compared the health of foreign students with that of German students using biomedical and questionnaire data. The study population consisted of 100 foreign students and 160 German students (controls).

Methods: The questionnaire contained standardized international instruments and the validated questionnaire of the University of Bielefeld students health survey which was further refined for the specific health problems of foreign students. In addition biomedical investigations were performed. **Results:** Out of the 100 foreign students 50% came from East Asia, 20% from Subsaharan Africa, 10% from Eastern Europe, all of whom had immigrated at the beginning of their university studies and 20% were Turkish students, who grew up in Germany. We will present the differences in the foreign and German student population and the subgroups of foreign students with respect to socioeconomic status, health risk, chronic diseases, prevalence of STDs, perceived stress, nutrition, health resources (e.g. social support) and the biomedical markers. Certain groups of foreign students suffer more psycho social stress compared to German students. Their nutrition is healthier, alcohol consumption is low and smoking prevalence is lower than in German students, but increasing with duration of stay in Germany. Especially Asians have a good social work.

Conclusion: Preventive measures for foreign students should focus on a stress management that is oriented on their special needs. Furthermore, foreign students should be empowered to keep protective health behaviors (nutrition, low alcohol consumption, low prevalence of smoking, social networks) despite the influences of western civilization.

Objective: to describe our population of international travelers; to know the conditions of trips, workplaces, and accommodations; to evaluate risk of disease in order to advise more precisely; and to know individual real-life experience and repercussion on family life.

Methodology: questionnaires before each annual compulsory examination or directly at work. They concern employees traveling abroad for work, to all destinations, excluding expatriates (83 items, 182 replies).

Results: 111/182 useful replies. Occupations: 23 trade business, 52 research executives, 11 journalists, 3 tour guide, and 22 oil production employees, from 25 enterprises. Population: predominantly male; traveling since 13 years(average); with an average of 10 trips/year and median cumulative duration of 44.5 days/year/person. Rest period: for only 24% both on the way there and on the way back; 66.7% several destinations during the same journey, worktime excess, around 3h50/day. Health risks according to destinations: 50% without, 50% areas with low level of hygiene, of which 25% malaria areas. Only 65.7% of employees know if they have an insurance policy covering medical assistance and repatriation.

Tiredness and sleep disorders are frequent in spite of a real interest for the mission. Repercussion on the family life: 43%. Compliance with preventive advice are checked on 10 items (35 replies) and generally well effective. To fill the questionnaire before each medical consultation reinforces the messages and the efficiency of advice.

Induced effects: promote prevention, information and health awareness related to travel and work abroad with employees and employers, clients of our inter-enterprises occupational medicine department.

Between March and May 1997, about 17,605 Albanian refugees from different geographic areas and from heterogeneous social and cultural classes, arrived in Apulia region.

The immunity against poliomyelitis in a representative sample of this Albanian population was evaluated; this study was prompted by the following considerations because 1. a seroprevalence study, among Albanian refugees during the influx of 1991, found by a low antipoliovirus coverage (principally against poliovirus type 1 and type 3); 2. in April and May 1996, the World Health Organization (WHO) organized a "Polio Day" in Albania, giving OPV (oral poliomyelitis vaccine) to all children less than 5 years old; 3. in June 1996, an outbreak of poliomyelitis occurred in Albania with more than 100 ascertained cases (15-35 years of age). This emergency was handled through the vaccination of all subjects age 0-50 years with OPV.

In the present study the seroimmunity to poliovirus type 1,2, and 3, has been assessed on a sample of 681 Albanian refugees arrived in Apulia in 1997. An antibody titre <1:4 was revealed in 1.9% of subjects for poliovirus type 1, in 0.1% for poliovirus type 2 and in 2.9% for poliovirus type 3. Simultaneous absence of antibodies to poliovirus type 1,2 and 3 was found only in 0.1% of subjects. These results show a high seroimmunity coverage against poliovirus in Albanian subjects, comparable with that of the Italian population.

A serious crisis caused a massive boat migration to the Apulian coast of more than 17,000 Albanian refugees in March 1997. Albania is one of the poorest European countries and the health status of its population is still largely unknown. We present the results of a seroprevalence study of viral hepatitis viruses transmitted through oral-fecal route (HAV and HEV) conducted on 681 Albanian immigrants in different camps of Apulia region.

The prevalence of anti-HAV (IgG and IgM) was 91.2%. In the youngest age group (<5 years old) prevalence of anti-HAV was 13.8%; between 6 and 10 years the prevalence was 74.5%; in the 11-15 years age group the prevalence was 94.0%; and in the age groups 16-20 and >20 years the prevalence was respectively 98.7% and 99.3%.

Our prevalence data indicate a high circulation of HAV in the first decade of life suggesting that hepatitis A infection is largely acquired during childhood. This prevalence pattern is typical of hyperendemic areas with precarious social and economic conditions and at a very low level of sanitation.

In a sample of 300 adult subjects (mean age: 24 years, range 18-50) the prevalence of anti-HEV antibodies was assessed. Nine sera were repeatedly reactive by immunoenzyme assay (3%). We confirm that HEV circulates in Albanian population, and these preliminary data indicate a prevalence rate similar to that observed in other European countries.

During 1997, thousands of Albanian immigrants arrived in Apulia region and were housed in different refugees camps throughout the region. The aim of the present study was to assess the prevalence of HBV, HCV and HIV antibodies in a representative sample of this population. A total of 681 serum samples from refugees coming from different areas of Albania (mountain-rural and metropolitan areas) were collected and frozen at -20mC until testing. 450 of 681 sera were preliminary tested for the presence of serological markers of HVB (anti-HBc and Hbs Ag). The mean age of subjects was 22 years (s.d.=11.8; range: 2-72 years), 275 (61%) were males. The overall prevalence of anti-HBc antibodies was 60% (39.5% in females and 60.5% in males). In addition, a high prevalence of anti-Hbc antibodies was found in children less than 10 years old (24%). The prevalence of HbsAg among anti-HBc seropositives was 20%. Further evaluation of other HBV markers is in progress. The presence of serum antibodies to HCV (anti-HCV) was evaluated in 358 serum samples. Preliminary data indicate a low prevalence of HCV infection (0.7%) in Albanian refugees. 300 subjects were then tested for the presence of anti HIV antibodies. None were positive. These prevalence data, although preliminary, confirm that HBV infection is highly endemic in Albania. The high incidence rates of HBV among children less than 10 years old also suggest the importance of vertical transmission and the urgent need for extensive vaccination campaigns against HBV of all newborns and of all subjects at risk. The low prevalence of HCV and the lack of HIV infection in the sample examined, although evaluated on a small size sample, seem to reflect the isolation which has characterized Albania for many years. Continuous mass migrations and the returning in Albania of many refugees could lead to a changing of prevalence rates of these infections.

A large study examines the relief operation and the health assistance to Albanian refugees arriving in our region. Data was collected by questionnaires and registration of infectious disease cases was checked at the Local Health Authority.

A total of 844 Albanians in five refugee centers were included. The initial health surveillance system indications were very dishomogeneous in the different centers: at 4 centers, the refugees underwent a medical examination and screening for tuberculosis (Tine-test); the fifth center also carried out serological screening tests; prophylactic treatment for pediculosis; and poliomyelitis vaccination. This was needed because of the poliomyelitis epidemic in Albania in 1996. The history of poliomyelitis vaccination confirms the high coverage obtained by the WHO vaccination campaigns after the epidemic in Albania. Only 14 (3.5%) of 404 subjects had not been vaccinated. The high percentage of subjects testing positive to the Tine-test (33.9%) could be due to the vaccination requirements with BCG in Albania. No case of active tuberculosis was found by X-ray examination. The serological screening confirmed the endemicity of HBV in Albania; 20 (14.8%) of 135 subjects were positive for HbsAG, no persons were positive for HCV and/or HIV. Rumors about a potential epidemic risk due to the presence of Albanian immigrants appear unfounded.

Considering the risk of spread of diseases that are still rare in Albania, such as AIDS, there is a need for education of the refugees.

Preventive measures should be based on the epidemiological situation and existing vaccine programs in Albania. To allow better evaluation of refugee health problems, it will be useful to issue a health card for individuals. Such a card could record date and results of tests carried out upon arrival in a host country, and potential diseases which could arise during their stay at the relief camps.

The many young immigrants in our country raises many socio-sanitary problems.

The health unit ASL RMA in order to know health conditions of these children have been set up as an Observatory of foreign childhood (0-18 years of age). A total of 2,272 foreign children are attending schools in the health unit ASL RMA. In 1996, 400 children were examined. The major health problems were: infectious and parasitic diseases 12%, G.I. diseases 20%, respiratory diseases 35%, teeth diseases 25%, ocular diseases 8%; musculoskeletal diseases 7%; metabolic and nutritional disease 10%; positive tine test 20%. 1050 vaccinations have been administered (753 young immigrant, 297 gypsies).

Further surveys are under way.

Introduction: In Italy the number of citizens coming from countries not belonging to EEC is increasing. As far as the nomadic populations, the movements from one town to another and from one country to another, often illegally, represents a peculiar aspect of the culture itself of these populations. The present health policy considers prevention of infectious diseases a priority. Therefore preventive medicine programs, especially vaccinations, have been extended to all the foreigners living in our country; both resident and non-resident. The finance act of 23/12/96 n. 663 has confirmed the offer and gratuitousness of not compulsory children's vaccinations: measles, rubella, mumps, whooping cough and hemophilus B.

The aim of this survey is to analyze the compliance to the present vaccination programs of a group of nomads settled in Falconara Maritima (An) a town which, in ASL 7, has been a destination and a passage point for these groups for a long time. The aim is also to check the effectiveness of the approaches to these populations together with the compulsory vaccination programs; information campaigns; awakening the nomadic children's families; operative protocols for the personnel employed on vaccinations; offer of a multidisciplinary assistance (maternity and children advisory bureau); and active monitoring system of the defaulters.

Materials and methods: vaccination cards of nomadic children born in the years 1987-1997, issued in the commune of Falconara, have been examined and whose presence has been made known either through looking over their personal data or on enrolling in day nurseries, nursery schools, primary schools, or by information given by the social workers or other representatives for the nomadic community.

The check of the forms has been made on the basis of access times to compulsory vaccinations, observance of the compulsory vaccination calendars, compliance with the advised vaccinations.

Results

The nomadic children taken into account during the reference period have been 38 altogether. It has not been possible supply a comprehensive evaluation for 3 of them because of the continual moves of their families. Out of the remaining 35 children, 21 (60%) have regularly started the vaccinations at the fixed age and 23 (65%) have respected the vaccination calendar. The children who have had optional vaccinations are 16 only (45%): 3 vaccination with MMR, 4 anti-measles, 2 anti-rubella and 10 anti-whooping cough. The compliance has not been uniform for all the research years since the adhesion to the vaccination program has been for each of the examined variables, definitely greater in the last quinquennium; recently it has reached as response superimposable to that of the resident population.

Conclusions

From this experiences it comes out that it is difficult to have a full adhesion to the vaccination policy from the nomadic communities, especially if it is compared to the compliance of the resident population. Recently it has been observed a greater sensitivity and care towards the preventive vaccination and an increase in the demande for services from this category of users, too.

The authors document the first case of pulmonary form of histoplasmosis, which was imported from Mexico to Slovakia in a nonimmunodeficient patient.

The disease started 10 days after inhalation when the patient has visited the cave in which bats lived. The diagnosis was based on positive epidemiological history, positive histoplasmin's skin tests and the findings of chest x-rays.

The patient has been treated with oral Ketoconazole 400mg daily for three months, until chest x-ray were completely normal.

The seroepidemiological surveillance for syphilis has acquired, in the last decade a renewed importance due to the spread of latent syphilis and for the increasing prevalence of the syphilis-HIV co-infection. Immigrants from extra-European countries, attending the ambulatory of the Institute of Hygiene and Preventive Medicine of the University of Genoa, were tested for anti-Treponema pallidum (Tp) by means of an immunoenzymatic method. Each sample was tested with anti-Tp EIA screen test; reproducibly reactive sera were confirmed by TPHA and anti-Tp EIA IgM test. A standard questionnaire, including information regarding age, sex, place of birth, was completed for each patient. And HIV, anti-HCV and HbsAg positivity were also tested, following informed consent. During the period May-November 1997, 1388 subjects were screened. Most of these subjects were females (56%) and came from Latin America and the Caribbean area (52.3%); their mean age was 32 years (median 30 years, range 8-73 years). Fifty-four (3.9%) of the examined patients resulted reactive both to EIA screen and TPHA tests. The TPHA titre was greater than 1:320 in 15 subjects; three of them were also IgM positive. They were all advised to take antibiotics and to have a check up at the end of the treatment. Most of the confirmed cases were observed in males (52%), mainly coming from Africa (46%).

These results confirm previous studies in southern Italy and show the opportunity to continue surveillance on syphilis among extra-European immigrants in order to promptly diagnose not only primary and secondary infection but also latent syphilis.

Malaria is a problem in Italy because of imported cases.

The aim of this study is to carry on a descriptive epidemiological analysis of malaria cases notified and available by the Italian malaria surveillance system in the last years in Rome, characterized by particular social, economical and environmental conditions: the incidence of malaria cases among permanent residents and foreign citizens and the anophelism in the urban and sub-urban areas.

For example, in 1994, 129 cases of malaria were notified in Rome of which 93 cases were in permanent residents. In Italy, in the same period (1994), 784 cases of malaria have been notified.

The analysis of the reported cases and the comparison with the regional and national trends of malaria offers a first knowledge of the phenomenon, and the basis for epidemiological analysis and public health policies.

Amoebic Infections in a Casuistry of Travelers, immigrated and adopted Children: Isolation and Characterization of In Vitro Isolates with Isoenzyme Analysis

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Objective: To report the incidence of *Entamoeba histolytica*/*Entamoeba dispar* (Eb/Ed) infection in a series of international travelers, immigrants, and adopted children from 1994 to 1997.

Patients and Methods: We screened 1251 subjects: 851 international travelers, 68.02%, 250 immigrants, 19.08% and 150 adopted children, 11.99%. The parasitological examination was carried with: 1) coprological test on 3-5 fecal samples fixed in 10% formalin and concentrated according to Ritchie's technique; b) in vitro culture in Robinson's medium; 3) seroimmunology (IHA, ELISA, or IFP); d) isoenzymatic characterization by starch gel-electrophoresis (EF) with 4 enzymes according to Sergeants' method.

Result: 198/1251 subjects (15.83%) were found positive at the parasitological examination (83 international travelers, 9.7%; 54 immigrants, 21.6%; 61 adopted children, 40.6%). In 97 cases (48.98%) the in vitro culture in Robinson's medium for isolation of Eh/Ed was carried out and in 75 cases (77.31%) the strains were stabilized and subjected to EF. We identified 12 strains (16%) belonging to Eb species, with different pathogenic zymodemes, 36 stocks (48%) of non-pathogenic ED, 7 strains (9.33%) of *E. hartmanni*, 11 (14.55%) of *E. coli*, 8 (10.66%) of *D. fragilis*, and 1 (1.33%) of *I. butschlii*.

Conclusions: a) Ed is more frequently identified as Eb; b) The subjects at major risk for acquiring an infection due to Eh in our series are the international travelers and the adopted children; c) concerning the tropical areas visited or native, most travelers come from African continent, whereas the children are from South America; d) the biochemical typization by gel EF confirms its value in the differentiation between pathogenic Eh and non pathogenic Ed.

We need to indicate to expatriate workers in South East Asia that Japanese encephalitis (JE), a disease transmitted by a mosquito bite, may be fatal or cause serious neuro-psychic after effects. For many years it was not possible in France to vaccinate against JE that has no A.M.M.(Marketing authorization) in France.

The author, an occupational medicine practitioner, has obtained a temporary permission, issued by Agence Francaise du Medicament (French agency for evaluation of medical products), to vaccinate 7 employees going to China for professional reasons. He used JEVAX vaccines imported, in France, by PASTEUR MERIEUX MSD. No adverse effects have been stated.

The author relates the experience and the procedure used to vaccinate professional travelers in France. The classical indication for vaccination is rural residence in infected countries in South East Asia of more than 1 month.

August 7th: A coach carrying four Engineering Students plunges into a ravine. Two are killed instantly and the two 22 year old survivors, both of whom have serious burns are initially admitted to a small local hospital and transferred 24 hours later to the Burns Centre at Chengdu hospital, 200 km away.

August 8th: The French Embassy's doctor arrives in Chengdu.

August 9th, late afternoon, Inter Mutuelles Assistance is alerted and at 5h00 am on the 10th, after 10 hours of diplomatic negotiations, a Falcon 50 takes off from a French airport carrying two anesthetists and two nurses.

August 11th, 15 hours flying time later, the medical team arrives in Chengdu and prepares the two patients who are suffering from extensive 2nd and 3rd degree burns.

August 11th, 7 am local time; the plane takes off from Chengdu and at 18h30, 51 hours after Inter Mutuelles Assistance was initially contacted, the two patients arrive in the Intensive Care Unit of the Burns Ward of Percy Military Hospital where they will remain for 45 days before being transferred to a Re-education facility.

Introduction

The textile workers are continuously influenced by the following damaging factors constantly standing, temperature, humidity, vibration, noise and constant concentration of their attention. During the work day the machine services walk from 13-15 km per day.

Materials and methods

This study is done in the textile women in Tirana, Berat, Korce and Shkoder. In these places were questioned 773 workers about the problems which they had. In this study was determined the hygienic level as well as the cotton level, the temperature, humidity and noise level. Spirographic examinations for the evaluation of the influence of cotton dust in a functional state of the respirator apparatus were conducted also 165 audiogram examinations, 775 gynecological visits and 80 endocrinological visits.

Results

From the measurements of the dust levels which differ from 4-70 mg/m³, temperature from 25-31 degree, the relative humidity 65-85% and the noise 85-102 Db.

From the questionnaire of the 773 women was gathered the following data; menstrual irregularity is seen in 16,5% in the first group, 33% in the second group and 60% in the third group.

Gynecological examinations in 775 women have that 719(95%) of the women have gynecological diseases and 36 (5%) were healthy.

Conclusion

1. As a result of the influence of the damaging factors many professional diseases are seen as the diseases of respiratory apparatus the decrease of muscular strength, gynecological and endocrinological diseases.
2. For the prevention of these a quick change is needed in technology improvement of hygiene and sanitary conditions and the applications of preventative measure.

Preclinical data have suggested that the new 8-aminoquinoline, Etaquine (WR238605), has potential as a replacement for primaquine in *Plasmodium vivax* malaria. The first clinical study of Etaquine as a radical cure for *P. vivax* was conducted in Bangkok, Thailand in 1997. The long half-life of the compound has clear benefit in this indication, enabling much shorter duration of treatment compared to primaquine to be used. The first results have shown that 100 per cent efficacy can be achieved using Etaquine 300 mg daily for seven days, while 500 mg daily for three days, repeated after one week, and even a single 500 mg dose, provided efficacy in excess of 85 per cent.

The recent interest in primaquine as a potential prophylactic points the way to the same use for Etaquine. The first study of *P. falciparum* prophylaxis in semi-immune subjects was conducted in the highly endemic Lake Victoria area of Kenya after the rains in 1997. The study compared placebo (to provide a measure of attack rate), a loading dose (500 mg for three days) and loading doses of 250 mg or 500 mg followed by weekly doses. Follow-up was for 13-15 weeks.

During the study, the placebo attack rate was 85 per cent, with protective efficacy of 83 per cent for the loading dose alone, 95 per cent for the 250 mg dose group and 97 per cent for the 500 mg group. This study shows good efficacy for the weekly dosing regimens, but most interesting are the data for the loading dose alone. There was no malaria in this group for the first 60 days of the study, during which there was a 60 per cent attack rate in the placebo group. Overall treatment was well tolerated; two subjects with G6PD deficiency were included in the study and suffered haemolytic events. While serious, neither was life threatening or progressive after the initial event.

These early studies may point the way to the eventual use of Etaquine for travellers. The data suggest that, in prophylactic mode, a loading dose could be given at time of departure and provide cover for up to 30 days without the need for further doses on return. Since it is likely that Etaquine also has efficacy as a treatment, in *P. vivax* infections it may only require a few daily doses to provide cure of acute illness and radical cure as well. Other potential uses based on the available data will be discussed.

In recent years, malaria has become more intense and widespread globally, as has parasite resistance to currently available antimalarial drugs. Chloroquine resistant *Plasmodium falciparum* malaria is found in all malarious areas, except in Haiti, Central America and the Middle East. Chloroquine resistant *P. vivax* is now well documented in Indonesia, Guyana, Colombia and India. The combination of chloroquine and proguanil has markedly reduced efficacy in Africa where it had enjoyed widespread use for many years. Mefloquine, the current antimalarial of choice in high-risk areas, is no longer effective along the borders of Thailand.

Added to the issue of drug resistance is the problem of adverse events associated with present antimalarials. Of those using mefloquine, one in 200-250 will develop neuropsychological reactions (anxiety, insomnia, irritability and depression), while one in 10,000-13,000 will develop seizures or psychosis. Doxycycline has the potential to produce skin photosensitivity, oesophagitis, gastrointestinal upset and vaginitis in five to 20 per cent of users. Proguanil has been shown to produce mouth ulcers in up to 40 per cent of users.

And on the horizon? Primaquine, azithromycin and a combination of atovaquone and proguanil appear to be safe and effective in small, well-controlled studies, mostly in semi-immunes.

However, it is clear that we need the largest armamentarium possible to cope with an infection that has until now outwitted sophisticated control measures and newly developed pharmaceutical preparations. Etaquine (WR238605) may be the answer.

As a result of the intensive antimalarial drug discovery and development effort at the Walter Reed Army Institute of Research (WRAIR), Etaquine (WR238605) has been successfully developed to replace primaquine, a drug with a narrow therapeutic index. Preclinical and clinical studies suggest that the drug will have promising activity against both *Plasmodium falciparum* and *P. vivax* malaria. Etaquine is a synthetic analogue of primaquine, having an additional methoxy group at the 2 position, a methyl group at the 4 position and a trifluoromethylphenoxy substitution at the 5 position of the quinoline ring. Preclinical efficacy testing was conducted in rodent models in the UK and simian models in India, Thailand and Panama. These studies consistently demonstrated that the drug had improved efficacy, reduced toxicity and excellent oral bioavailability. In rodent malaria models, single subcutaneous doses were effective for prophylaxis. Multiple oral dose testing using the rhesus monkey *vivax*-like relapsing malaria model also served to predict both prophylactic and radical curative properties. Etaquine was 10.5 times as effective as primaquine against preerythrocytic stages of *P. cynomolgi* and was 7.4 times as active as primaquine for radical cure of established sporozoite-induced infections.

Although developed primarily as an anti-relapse agent, Etaquine has also been found to possess significant blood schizontocidal activity. Etaquine cured established trophozoite-induced infections of *P. falciparum* and *P. vivax* malaras in the Aotus monkey model. This activity was validated by determining intrinsic blood schizontocidal activity *in vitro* various patient isolates and parasite clones from diverse geographic regions. On an equimolar basis, Etaquine was five to 15 times more active than primaquine and multi-drug resistant strains from Indochina appeared to be equally susceptible.

Etaquine is less toxic than primaquine in acute and chronic animal models and does not exhibit mutagenic or developmental/reproductive toxicity in preclinical testing. The half-life in animal models was substantially longer than primaquine (170 hours versus two hours in the dog). These favourable pharmacologic properties, combined with its superior efficacy and lack of toxicity, suggest that this drug may play an important role in the prevention and treatment of malaria in travellers.

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