

CURRENT MALARIA SITUATION AND WHO CONTROL STRATEGIES

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Almost 300 million clinical cases of malaria occur worldwide each year and over one million people die. Ninety percent of these deaths occur in sub-Saharan Africa, where young children are the most affected. Malaria is directly responsible for 20% childhood deaths in Africa and indirectly contributes to illness and deaths from respiratory infections, diarrhoeal disease and malnutrition. The disease in addition to widespread premature death and suffering, imposes financial trouble on poor households, and holds back economic growth and improvements in living standards. Malaria is endemic in 109 countries with intensities of transmission that vary from very low to extremely high. The nature of malaria and its impact on health is quite different in different places. So control operations must be specific to each location and need to take into account the epidemiological, economic, institutional and cultural settings.

From its establishment in 1948, WHO has been involved in international coordination of antimalarial operations. Following the discovery of DDT and the establishment of the World Health Organization, malaria eradication was identified as a priority. The operations were initially oriented towards control of the disease, but in the early 1950s malaria eradication became the declared goal in numerous countries. In 1955, the Eighth World Health Assembly decided on a policy of malaria eradication for all endemic countries except mainland sub-Saharan Africa and Madagascar, where malaria control was to remain the objective until suitable, economically feasible methods became available for complete elimination of the disease. The Global Malaria Eradication Programme was thus never as global as the name would suggest, as, from the start, it did not include all malaria-endemic countries.

In the recent past, relatively little effort has been put into trying to control the malaria situation in sub-Saharan Africa. The reasons are several and pertaining to technical, economic, logistic and health systems structural features. Though malaria is still a big problem, huge progress has been made since the beginning of the century. Since the launch of the Roll Back Malaria Initiative by WHO in 1998, malaria control has intensified in endemic countries, supported by a greatly increased investment of financial resources and technical assistance from the international community. The global financial input to malaria control in the past 5 years increased tremendously, the main sources being the Global Fund to fight AIDS, Tuberculosis and Malaria and, to a lesser extent, the United States President's Malaria Initiative and the World Bank's booster programme. The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) is the world's largest external source of finance for malaria control programs, providing two-thirds of all international financing. To date, the GFATM has approved grants with a total value of US\$ 2.6 billion over five years to 117 programs in 85 countries to support aggressive interventions against malaria. US\$ 833 million has been disbursed so far. These funds still fall short of the estimated requirements for malaria control globally and of those required to achieve the revised targets set by African Heads of State in Abuja, Nigeria, in 2000, of 80% population coverage with the key malaria interventions by 2010.

Countries in the African region have adopted a coordinated malaria control strategy which includes: the early detection, control or prevention of epidemics; early diagnosis of malaria cases, with prompt and effective treatment with Artemisinin-based combination therapy (ACT). ACT is recommended for the treatment of *P. falciparum* malaria. Fast acting artemisinin-based compounds are combined with a drug from a different class. Companion drugs include lumefantrine, mefloquine, amodiaquine, sulfadoxine/pyrimethamine, piperazine and chlorproguanil/dapsone. Artemisinin derivatives include dihydroartemisinin, artesunate and artemether. Over the past two

years, capacity has been built in the areas of policy formulation, the planning and evaluation of malaria control programmes, and case management at all levels of the health system including the community. Preventive measures, such as indoor spraying, personal protection and the use of Insecticide-Treated Nets (ITNs) and Long Lasting Insecticidal Nets (LLINs), are being promoted. Priorities for malaria control in Africa are now the strengthening of technical support to programmes, training, and enhanced operational research. Home Management of Malaria (HMM), is a promising strategy developed by the World Health Organization, largely based on studies supported by the UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR). It builds on this common practice with the aim of improving self medication at the household level through a package of interventions, comprising three fundamental pillars: i) selection and training of community members as community medicine distributors (CMDs) to correctly dispense antimalarial medicines ii) an Information-Education-Communication campaign to sensitize caregivers (mostly mothers) on the importance of adhering to the correct treatment schedule; iii) making effective antimalarial medicines largely available in every village, close to home in undosed, user-friendly, blister packages. The future of global malaria control and elimination will depend, on the success of research and development in delivering a steady stream of replacements for tools that are being lost to resistance. New, more effective tools are necessary to make elimination of malaria possible, especially in areas of high transmission.

EBOLA AND MARBURG RECENT OUTBREAKS

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Marburg and Ebola viruses were respectively described in 1967 and 1976. Both are responsible for severe disease in Central Africa. The symptomatology of Marburg and Ebola virus infections are clinically similar and generally difficult to diagnose without the laboratory support. The case-mortality rates are variable 30-90% for Marburg virus infection, 80-90% for Ebola Zaire infection, and 51% for Ebola Sudan infections. Outbreaks have been reported more frequently in the recent years (3 in 2007) with the report of a new species Ebola Uganda in December 2007. Barrier nursing and the avoidance of parenteral exposure of hospital staff are important in the management of filovirus infections because of the frequency with which nosocomial transmission is seen. No antiviral drugs or vaccines are currently available for human use, but several candidate vaccines have shown potential in animal models. Non-human primates, the source of many human Ebola infections, are not considered to be a likely reservoir. The real reservoirs have not yet been found, although recent data have implicated fruit bats.

DERMATOLOGICAL ASPECTS

Dermatology and Human Mobile Population: an experience between Ethiopia and Italy

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Migration has been going on throughout the history of mankind, from the moment of man's first appearance on this earth to the present day, and has completely reshuffled both the human geography and the sanitary conditions of the planet. Migration has always been a complex social and political phenomenon, with considerable implications of a social and health nature.

The WHO defines immigrants, refugees, political exiles, migrant workers, travellers and tourists who for any reason move from one country to another, as Human Mobile Population. According to the WHO in 2007 they numbered 1 billion and 350 million, of which 200 million were emigrants looking for work. So at present what was once thought to be an illness typical of a specific geographical area, for example in the tropics, can now be found anywhere, especially in the northern hemisphere, the goal for most of the immigrants.

Nowadays Italy, mostly because of its geographical position and its initial lack of legislation regarding immigration, serves as a gate to Europe for thousands of immigrants and has done so since the mid 1980s. According to the official data on immigration in Italy, in January 2007 there were 3,690,052 foreigners with a regular permit-of-stay, whereas over 1 million were the undocumented immigrants.

Considering the importance of the immigration phenomenon, since 1st January 1985 a Department of Preventive Medicine for Migration has been opened in Rome, at San Gallicano Institute. The Service is particularly addressed to regular, illegal and clandestine immigrants, homeless, nomads and those having health problems but without a health insurance card. Moreover, the Department is open to agents of tourism, missionaries, travellers from and to tropical countries, providing specialised tests, visits and updated information on the prevention of the most common diseases in tropical regions. For years, the Department has represented the only public referral point not only for assistance and treatment but also for medical-epidemiologic, social, anthropologic research concerning immigrant, nomadic and homeless populations.

Between 1995 and 2007 we examined 94,746 regular and irregular immigrants, 45,587(46.6%) females and 49,678 (53.3%) males. We identified some cases of tropical diseases (mycetoma, sporotrichosis, lobomycosis, paracoccidioidomycosis, blastomycosis, cryptococcosis, filariasis, myiasis, loiasis) which were very probably contracted in tropical area and then imported to Italy. The tropical diseases in the immigrant population increased from 6% in 1995 to 27% in 2007.

In the developing countries, poverty, that is deprivation as far as longevity, lack of education, poor health service are concerned, affects about a quarter of that population. In January 2005, San Gallicano Institute has opened a dermatological hospital named Italian Dermatological Hospital (IDH) in a village near Mekele, the capital city of the Tigray region, in Ethiopia. Communicable diseases and nutritional problems are major health problems in this country. Malaria, Tuberculosis, acute upper respiratory infections (AURI), diarrhoeal diseases, skin infections and HIV/AIDS are among the top disease burdens.

A total of 26,461 outpatients were examined at the Hospital between January 2005 and September 2007. The main skin diseases registered were as follows: infectious dermatoses (41%), scabies (16,1%), primary pyoderma (6%) and viral infections (3,2%).; among non infectious dermatoses we recorded eczematous dermatitis (22,4%), pigmentary disorders (11%), acneic dermatitis (6,4%), lichen planus (2%), psoriasis (1,6%), prurigo (4,3%) and annexal diseases (2,1%).

Various skin disease surveys conducted in developing countries have concluded that skin diseases are very common, but little information is available about the magnitude and burden of skin diseases in the general population of northern Africa.

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TUBERCULOSIS

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Tuberculosis (TB) remains a significant disease worldwide causing about 1.6 million deaths and 9 million new infections per year; it is estimated that 95% of cases and 98% of deaths occur in developing countries. In Africa, TB is the most common cause of morbidity and mortality in individuals with HIV infection. The emergence of drug resistance has been a largely neglected aspect of Africa's TB, and multidrug-resistant (MDR) TB (caused by strains resistant at least to isoniazid and rifampin) was thought to be low. A 2006 outbreak of extensively drug-resistant (XDR) TB (caused by MDR strains resistant also to a fluoroquinolone and a injectable second-line drug) in South Africa highlighted this serious problem. New vaccines and drugs are therefore necessary to control TB and its drug-resistant forms, and several investigations are performed worldwide. The Istituto Superiore di Sanità (ISS) is advocating this line of thinking by performing both basic research studies and national and international drug resistant surveillance and proficiency testings, in the framework of the activities conducted as a Supranational Reference Laboratory of the World Health Organization. More recently, challenging studies are performed at ISS aimed at eliminating latent TB, which affects one third of the world's population, and constitutes a vast reservoir of *Mycobacterium tuberculosis* (Mtb) dormant organisms from which active disease and subsequent transmission propagates. New drug combinations able to kill dormant Mtb stages are presently studied, with the purpose to break the cycle of disease transmission and reverse the TB epidemic.

THE FEMALE GENITAL MUTILATIONS/CUTTING:

Classification, meanings, complications, therapy.

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FGM/C are ancient and dangerous traditional practices that involve partial or total removal of the external genitalia and/or injury to the female genital organs for nontherapeutic reasons. The WHO reports four types of FGM/C: Type I Excision of the prepuce with or without excision of part or the entire clitoris (circumcision/clitoridectomy); Type II Excision of the prepuce and clitoris together with partial or total excision of the labia minora (excision); Type III Excision of part or all of the external genitalia and stitching/narrowing of the vaginal opening (infibulation); Type IV Unclassified: (pricking, piercing, incision of the clitoris and/or labia; stretching of the clitoris and/or labia; cauterization; scraping of the vaginal orifice or cutting of the vagina; introduction of corrosive substances into the vagina to cause bleeding, etc).

With the massive arrive of immigrants and their family our society became multicultural, multiethnic, with uses, traditions, alimentary habits, customs and religions often very different from ours. Although this is a richness we should not ignore that there are some dangerous traditions which are harmful for women and babies' health and which violate their human rights.

Since the 9th of January 2006 in Italy there is the specific crime of FGM established by the Law number 7 published on Gazz. Uff. Number 14 of the 18th of January 2006 "Dispositions pertaining to the prevention and the prohibition of the practices of FGM" which order the necessary dispositions for preventing, contrasting and repressing FGM as violations of the fundamental rights of the person's integrity and of the female babies' health. This law also suggests to organise programs of information for immigrants, of making aware to develop the socio-cultural integration, of updating for teachers in the school, of supervising of previous cases locally present and of

training for medical staff. On the 25th of March 2008 the proclamation of the Health Minister which defines the guidelines for health staffs and other professional figures who work with the communities coming from countries where FGM are practised was published (Gazz. Uff. Number 71).

The general practitioner is often the first and the unique link between these patients and the health system. He must be able to aptly face the problems of the FGM/C. He should know the countries where they are common, he should have the tools to communicate with these patients and their men, he should know the existence of these practices and the personal value of the person who undergoes or is forced to undergo similar rites; he should know to differentiate the different types and the concerning complications. During his work he must pay attention to the composition of the immigrant families to identify potential female babies at risk of mutilation, giving information about the harmness and the illegality of the mutilation practice; he should be able to diagnose cases needing more complicated operations and send them to second level structures for the defibulation, the surgery of cists, dyspareunia, infertility and a possible sexual rehabilitation in case of sexual disfunction.

FEATURES OF 2006 CHOLERA OUTBREAK IN PEMBA ISLAND, TANZANIA

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Since the first outbreak in 1978, Pemba experienced recurrent outbreaks in the period 1983-98, annually since 2000, except for 2005. In 2006 the island Cholera Committee - composed by the Medical Core Unit of Chake hospital and the staff of Zanzibar Water Authority (ZAWA) and Ministry of Education - worked with technicians of the Public Health Laboratory Ivo de Carneri (PHL-IdC) and the Department of Public Health-Microbiology-Virology (Milan) in order to monitor the outbreak. Date of hospital admission, sex, age and living area for each patient admitted in Primary Health Care Units (P) and District Hospitals (H) have been recorded; a population survey has been carried out to obtain demographic data. Patients rectal swabs and water source samples have been collected in and around the cholera treatment centres, respectively. At PHL-IdC samples have been analysed for detection of *V. cholerae*, according to standard protocols: the suspected colonies have been confirmed by serotyping with a polyvalent O1 antiserum. 2006 outbreak started in the south-eastern coast (Mkoani District) on 13 March; lately, the outbreak moved further north, affecting Wete, M'weni and Chake Districts. This figure has confirmed that there are four high risk areas along east coast, involved in previous outbreaks and characterized by poor latrine coverage, overcrowding as well as a limited access to safe water. As 2006 outbreak ended on 31 October, a total of 464 cases including 10 deaths (case-fatality rate 2%) were reported from cholera treatment centres in Pemba (see figure). Index case was a mobile fisherman, travelling between islands and Tanzania mainland: fishermen have always played a critical role in spreading the cholera disease. High peaks have been reported in heavy rainy season (March-June), accounting for 71% of all the cases and showing a weekly case-fatality rate up to 25%. Overall incidence of Pemba island was 1‰ and much lower than affected areas, where it ranged from 8‰ (Kojani island in Wete) to 61‰ (Shamiani island in Mkoani). There were not differences between males and females; incidence was higher among subjects older than 5 years, except for Kojani (25‰ 0-5 years old children vs. 6‰ other age groups). Likely outbreak cases are underestimated, in fact outpatients diagnosed with cholera are not accounted. Surveillance activities remain an important challenge in Pemba. PHL-IdC confirmed 65% samples positive to *V. cholerae* O1 on a total of 109 analysed specimens. In 6 out of 9 affected areas, 45 on 56 (80%) water samples were found positive to *Vibrio cholerae*. The majority of water is provided mainly by unprotected shallow wells and

springs, followed by piped water systems: the condition related to source contamination are ropes and buckets for the first sources, poor maintenance and leakages for the second ones. In south-eastern cost water sampling was done before and after source chlorination: results showed that direct source chlorination was not a proper treatment, so that ZAWA operators convinced the population to prepare a stock disinfectant solution for water buckets used at household level. As evaluated by the WHO Cholera Global Task Force, response provided to 2006 outbreak has been efficient and well organized compared to outbreaks before 2002. Nonetheless, it is still a challenge to ensure proper surveillance, health education activities, and environmental management (safe water and adequate excreta disposal). A 3 phase proposal has been planned for a new approach for cholera control in Pemba: it includes improved surveillance for cholera and other epidemic diarrhoeal diseases, validation of the rapid immunochromatographic diagnostic test for cholera (CrystalV), and a mass vaccination campaign using oral cholera vaccines as an additional means for control.

THE INTERNATIONAL HEALTH REGULATIONS 2005

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From the middle of the 20th century many diseases such as yellow fever, tuberculosis and polio, came under control. Malaria transmission was interrupted in a number of countries and infant mortality from infectious diseases fell with better therapy. Unfortunately the battle was seen to have been won and subsequently, through misuse, the utility of anti-microbials has declined, surveillance systems were not sustained and societal and demographic changes e.g., population growth, urbanisation, industrialization of food production, sexual behaviour, continue to render us at risk to infectious diseases. The continued threat of emerging infectious diseases and the causes have been well described (see *Microbial Threats to Health: Emergence, Detection, and Response*, US Institute of Medicine 2003).

An overview of the problem of emerging infectious, and other health risks, is provided in the World Health Report, 2007 "A Safer Future: Global Public Health security in the 21st Century" (http://www.who.int/whr/2007/whr07_en.pdf). This report focuses on global public health security which can be defined as the activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries.

The IHR (2005) represent one important tool for use in these activities, providing a legal framework for action and collaboration among and between the nations of the world and the international organizations engaged in this area. The regulations have now entered into force for 194 States Parties, including all of WHO's Member States. Not only have countries agreed to follow these rules during sudden emergencies such as disease outbreaks that threaten to spread, but also to develop the capacities to detect and respond to public health events at an early stage and thus by effective intervention prevent their progression to becoming international problems.

The traveller and travel medicine practitioner may be most familiar with the IHR as the legal basis for country requirements relating to certificates of yellow fever vaccination and the disinsecting of aircraft flying on particular routes. However the regulations contain a number of additional provisions that are of relevance to travellers. Many of these relate to different aspects of the application of health measures at points of arrival and departure. Health measures that may be

applied routinely are described as well as the circumstances permitting authorities to apply further measures. There are articles restricting the levying of charges for the application of such measures and for protecting the use of any personal data obtained. There are also provisions for the obtaining of informed consent and the humane treatment of travellers during the application of health measures.

During global emergencies, such as a pandemic of human influenza, temporary recommendations will be issued by WHO under the IHR and, when appropriate, these will include recommendations regarding the international movement of persons goods and conveyances.

CLIMATE CHANGE AND INFECTIOUS DISEASES

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On a geologic scale the planet's climate has already undergone numerous transitions. A growing body of scientific evidence supports the view that the world's current climate is also changing; shifting to become warmer, with more precipitation and weather extremes. Potential effects are likely to include variable weather, stronger and longer heat waves, more frequent heavy precipitation events, more frequent and severe droughts, extreme weather events such as flooding and tropical cyclones, rises in sea level, and increased air pollution. Existing seasonal disease cycles and weather impacts on numerous zoonotic, vector-borne, water-borne, and soil-borne pathogens foretell significant infectious disease impacts of global warming. While experts cannot predict exactly how these changes will impact society and public health, we must collectively prepare for the possibility of health effects related to climate change in the same way we prepare for the possibilities of bioterrorism and pandemic influenza. As part of these preparedness efforts, experts are making use of the knowledge and experience gained from previous natural disasters and disease outbreaks and will need to improve global monitoring and communication systems.

UPDATE ON THE WHO 'GREEN BOOK': INTERNATIONAL TRAVEL AND HEALTH 2008

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People made more than 850 million international journeys in 2007. This amount of global travel exposes many people to changes in altitude, humidity, disease agents and temperature – all of which can lead to ill-health. Many health risks can be minimized by precautions taken before, during and after travel. This book provides WHO guidance on vaccinations, malaria chemoprophylaxis and treatment, protection against insects and other disease vectors, and safety in different environmental settings.

It describes the relevant infectious diseases, including causative agents, modes of transmission, clinical features, geographical distribution, and prophylactic and preventive measures.

New outbreaks of yellow fever occurred in several countries in South America which resulted in revised WHO recommendations and yellow fever vaccine requirements. An update will be given on the expanded section on worldwide maps of infectious diseases, the international certificate for vaccination or prophylaxis, the country list and various other topics.

EXPEDITION MEDICINE

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Introduction and Scope of Expedition Medicine

The easy question ‘what is expedition medicine?’

There is no clear distinction between those who travel either as expedition team members or others who travel to ‘wilderness’ areas and, from the definitions noted above, there will be considerable overlap between adventure travel and leisure travel. There are many reasons why travellers go to remote regions, for:

- Enjoyment
- Exploration and discovery
- Achieving a geographical goal
- Testing endurance and the element of danger
- Scientific research
- Education
- Personal development
- Cultural exchange

The role of the expedition medical officer

Exploration and adventure travel are increasingly attractive to people of widely differing ages, experience, physical health and interests. This creates new challenges to practitioners of expedition medicine but the aims remain to anticipate preventable medical problems, to maintain health throughout the expedition, to optimise achievement and enjoyment, but on no account to stifle enthusiasm or ambition¹.

The modern practice of expedition medicine is to encourage adventure but to attempt to minimise the risk of trauma and diseases by proper planning involving risk assessment, preventive measures such as vaccinations, prophylactic drugs and medical equipment, knowledge of first aid, emergency and primary healthcare skills, communication skills, and an attitude of caring for both the anticipated team and the anticipated cultures of the expedition. Planning will need to cover all contingencies; from mild illnesses and disease to group health insurances, through to unforeseen events such as evacuating a seriously ill, injured or dead person. Important also in the pre-trip planning is local knowledge of the area to be travelled. To this end, the Medical Officer (MO) needs to investigate local knowledge in the country, and this must essentially include an assessment of local hospitals and health care facilities, and the potential of needing to repatriate an expedition casualty.

Finally, the MO is often called upon to maintain ‘standards in morals’ upon an expedition, and in this regard will need to develop and emphasise a responsible attitude by the expedition towards the environment that is travelled in and the indigenous populations that are visited. This can mean, at times, accepting responsibility for the wellbeing of a local populace.

Conveniently the role of the expedition doctor can be divided into three main phases

- Pre-expedition
- During the expedition
- Post-expedition

Preparing ofr expeditionary life

The most successful and popular expedition MOs contribute to the many aspects of an expedition and are able to deal with all of the medical problems that come their way. Essential in this care for fellow-expeditioners is a routine to follow up any medical problems within the group.

The MO needs to be able to deal with the medical problems that are most likely to occur. There needs to be a confidence in the management of care from minor ailments through to, in a worst case scenario, multiple casualties with major trauma. If appropriate to the expedition destination, the MO needs to be familiar with conditions such as: the management of altitude-related illness, temperature-dependant injuries, barotrauma and other environmental problems such as tropical diseases.

There are many suitable courses such as pre-hospital trauma life support courses, mountain first aid courses, the Diploma in Mountain Medicine or specialised courses that are designed to prepare doctors for life on an expedition.

Expedition risk assessment

The MO has two primary roles: a) to maintain the physical and psychological health of the team members. For all that, however, the expedition doctor will need to work closely with the expedition leader to formulate a formal risk assessment and to brief all team members on likely health hazards.

Risk assessment can be divided into two main areas:

1. Medical risk assessment
2. General Risk Assessment

Topics to be considered on an expedition:

Serious expedition risks

Briefing the team and what topics to cover

Medical support in-country

Methods of communication

Selection of the expedition team

It is important for an MO to review references, and wherever possible, to be involved in interviewing potential expedition colleagues with a view to assessing them medically for the team composition. All expedition team members will need to complete a carefully-worded questionnaire about pre-existing health conditions.

Pre-existing medical conditions

Some team members may have significant pre-existing health problems,. Prior knowledge and planning essential.

Minimising the risks: need to follow-up any significant declarations on the questionnaire with the expeditioner, to obtain more details or medical reports, chest xrays, blood tests, ECGs etc as appropriate. The MO will then need to undertake a complete risk assessment including appraisal of the travel environment, duration of travel, medical backup, communications in the field and evacuation logistics about the subject expeditioner and then make a decision as to whether this person will be travelling at unacceptable risk?

Legal liability and insurance

With a society that is becoming more litigious, expedition MOs will need to inform their medical defence organisation of any impending journey and if they intend to act as MO for the expedition. Involve any insurance company early on in the pre-travel planning for whilst insurance will not completely take away the danger of being sued, it will give some peace of mind in planning for an intended journey.

Malarious areas, Sailing parties, Tropical areas, Diving expeditions, Mountain expeditions, Desert environments.

Expedition management

Day to day medical care

There is the potential for accidents or medical incidents to occur on any expedition, and those participating in such ventures need to be aware of the risks in being part of the group.

Common diseases to be encountered on the trip.

Non-traumatic disease is the most common on any trip, with the commonest conditions reported as being: gastrointestinal problems, respiratory disease and skin problems. Minor accidents and trauma are uncommon.

Expedition psychology

Psychological factors impact on many aspects of the expedition and it is important for the expedition MO to have an awareness of causes of discordance in the team.

Group communication

Communication is the key thing so that all parties are informed and any concerns are raised early.

Post-expedition surveillance and advice

Any medical conditions encountered within the expedition group, need to be followed up at the completion of the journey. There could well be risks of dis-ease that will present through the natural incubation process of any disease, specific for the region of travel. The MO will need to be vigilant in following up on any reassessment of medical conditions encountered on route, with the patient's health professional. At this time all reports of any significant medical problems during the expedition will need to be forwarded.

ILLNESS AND INJURY TO TRAVELLERS ON A PREMIUM EXPEDITION TO ICELAND

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Background

Commercial expeditions provide an opportunity for travellers to undertake various specialised travel to more adventurous and extreme destinations in the relative security of an expeditionary group with medical cover provided by an expedition physician. Little is known about the illnesses and injuries occurring on premium expeditions. This present study was designed to investigate the prevalence of health problems suffered by travellers on a premium expedition to Iceland and the Arctic Circle.

Methods

In 2004, the expedition physician diagnosed and recorded all illnesses and injuries amongst 45 travellers on a premium expedition to Iceland. Information recorded included age, sex, number of days into the expedition, the nature of the presenting illness, the assessment of the condition and the treatment employed. The period of the expedition was for 18 days and travel was by chartered aircraft, cruise ship and bus.

Results: Thirty-one (69%) travellers sought medical advice at least once for a total of 54 consultations (mean=1.7). Fifty-six health presentations were reported and recorded amongst the travellers. Females presented on 70% occasions with the average age of expeditioners presenting being 62 years. The types of primary illness diagnosed were largely those related to the following systems: respiratory 34%, gastrointestinal 30%, dermatological 14%, and musculoskeletal 9%, and

other problems 13%. Of the gastrointestinal problems, seasickness was the most common single complaint on 27% of occasions, occurring between day 4 and 9, the cruise phase of the journey. In total, the cruise phase accounted for 43 medical presentations with the pre-cruise phase accounting for 11% of them and the post-cruise phase accounting for the remaining 46%. Presentations were highest on day 5. About one third of presentations (34%) were handled conservatively with 23% requiring antiemetics and 6% requiring antibiotics. There were no deaths or other major incidents requiring emergency evacuation or hospitalisation; although 6 accidents were reported. Interestingly, accidents were significantly more likely to occur earlier in the expedition ($t=2.828$, $df=54$, $p=0.007$).

Conclusions

On this premium expedition, the health problems encountered were largely similar to those reported for other expeditions. The most common problems included respiratory, gastrointestinal, dermatological conditions and musculoskeletal conditions in descending order. As well as being part of the service provided to travellers, the inclusion of an expedition physician on this premium expedition increased the independence of the travellers on this journey yet decreased the reliance on local health services, a source which is often scarce or absent on more remote location expeditions.

PRE-EXISTING AND COMMON CONDITIONS ON EXPEDITIONS

Jon Dallimore, UK

Adventurous travel is increasing and is widely available. Some potential expedition team members have significant pre-existing health problems or disabilities, however, the majority of these people can enjoy safe, successful trips with careful planning.

There are several issues: disabilities or chronic illnesses may prevent individuals from participating fully in the physical and emotional challenges; it is possible that the rigours of expedition life may worsen the underlying condition; if the underlying condition does deteriorate and adequate medical facilities may not be readily available.

It is therefore essential to weigh up the possible risks to an expeditioner's health against the potential benefits of travel for any individual who has significant pre-existing health problems. Ideally all applicants should be included but, for some, the risk of serious illness, even death, may be unacceptable.

This session will focus on suitable screening and minimising the risks for those with health problems who anticipate travelling to remote or hostile environments.

ENVIRONMENTAL RELATED ISSUES: DESERT AND JUNGLE

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Despite seeming so totally different, desert and jungle areas often have much in common when considering environmental risks to expeditions. Both environments are typically subject to high temperatures and high levels of incoming solar radiation; both represent 'extreme' environments for expedition operations. The principal differentiating features between desert and jungle environments are the environmental water concentrations and the consequent biological density and diversity, and the protective but often obscuring role of jungle canopy, if present. Both environments may however deny easy access to water for expeditions, as the water present in jungle environments may be either difficult to access, or not readily potable. Both environments may also be home to

venomous organisms, including arachnids and reptiles. Both environments pose risk to travellers of 'exotic' infections not typically seen in temperate latitudes, and for which specific preparation, precaution, and post travel awareness or intervention may be required; one such infection is leishmaniasis which may be contracted in both rain forests and desert environments; malaria, attributable to different species, may also be present in both environments; coccidioidomycosis has the distinction of being a soil related desert infection. Amongst other considerations, preparation for both environments requires consideration of physical, climatic, envenomation, and infectious disease risks to expedition members' health.

PREPARING HEALTH PERSONNEL FOR EXPEDITIONS

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Background

Major expeditions to remote locations are usually accompanied by experienced health professionals. The objective of this session is to provide some background to those providing advice to health professionals interested in providing support to an expedition.

Methods

A review of PubMed and relevant policies and guidelines from websites of appropriate professional groups was undertaken.

Results

There are many forms of expeditions and many reasons why health professions should be involved. Sometimes, expeditions provide unique opportunities for health professionals to visit remote areas of the world, sometimes in quite challenging environmental extremes. Training and experience is therefore essential and health professionals should have a good understanding of the requirements and legal aspects of the expedition they are intending to support. The role of health professionals commences well before the expedition in terms of the risk assessment as well as health evaluation and advice to those joining the expedition.

Conclusion

The work undertaken by health professionals on expeditions can be both rewarding and challenging. The key to a successful expedition for the expedition health professional is to ensure they have undertaken an appropriate risk assessment, planning and training prior to the expedition.

ALTITUDE AND POLAR MEDICINE

Jon Dallimore

Those who venture to the highest and coldest parts of the earth face many potential hazards. At times, strong winds and sub-zero temperatures produce freezing conditions and the risks of local cold injuries and hypothermia. At other times, in the same environment, cloudless skies and great diurnal temperature variations can lead to dehydration and exhaustion. For those who venture into the high mountains these problems are combined with increasing hypoxia during ascent. This, in turn, can lead to potentially fatal complications.

Polar and high altitude regions represent some of the most inaccessible and inhospitable environments. Reducing the risks for climbers and high altitude trekkers will be discussed in this session.

TRAVEL-RELATED PSYCHIATRIC EVENTS AND SYNDROMES

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During last decades the amount of people travelling abroad has increased considerably, mostly because of the new advances in passengers transportation that allows to traverse long distances in a few hours. Related to the globalization phenomenon the aims of the trips are as diverse as visiting relatives, business, shopping, pilgrimage to places of spiritual or artistic focus, seeking for novelty,...

Travelling abroad involves stress, based upon: Circadian disruption, changes in habits (included food ones), defective communication due to lack of knowledge about the language, removal from supportive networks and unfamiliar surroundings.

The presentation of psychiatric emergencies can happen: Previously (even at the train station or at the airport), “in itinere” or during the transportation and, finally, at the destination.

Some specific syndromes have been nominated after the place or the certain area where they were diagnosed (Jerusalem Syndrome, Paris Syndrome, Santiago Route Syndrome) or after literary references (Stendhal Syndrome).

CHIKUNGUNYA VIRUS, MOSQUITOES AND COMPANIONS: REAL NEXT DANGERS IN EUROPE?

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Over the last 50 years, roughly 50 new agents of infection have emerged. Some of them (e.g.HIV) have caused pandemics which are currently afflicting millions of people with a dramatic death toll and suffering on poor populations worldwide, accompanied by social and economic disruption. While the availability of antiretroviral drugs have changed the perspective of AIDS control in developed countries, other microbial threats are impacting on public health of these and all other countries. Microbial evolution through mutation, genetic re-assortments and horizontal transfer, ease of transmission through fast movements of persons and goods, climatic changes, people behaviour and contacts with wild animals generate an explosive, globalized mix which provides a wealth of opportunities for epidemic outbreaks. In this threatening context, a number of viral diseases transmitted by arthropod vectors are widening their regional impact. The recent Italian epidemic of Chikungunya fever, the first in a non-tropical region (1), has shown the real risk of Chikungunya spread in those numerous developed countries with high environmental fitness for *Aedes albopictus*, one of the mosquito vectors of this disease.

Overall, human defence against microbial threats is based on two simple but sometimes neglected concepts : preparedness and response. Of importance for keeping at bay these emerging viral threats is the attitude, and capability, by the public health research community of using all new tools that advanced technology and globalization itself is providing in terms of rapid spread of information , rapid molecular diagnostic and international share of general preventive measures. Nonetheless, no stable success will be achieved if research on new vaccines and therapeutics against these somewhat neglected diseases such as the vector-borne ones continues to be hardly granted and politically unsupported.

(1) Rezza G, et al. Infection with chikungunya virus in Italy: an outbreak in a temperate region. *Lancet*. 2007; 370:1840-6.

RIFT VALLEY FEVER IN EAST AFRICA

Pierre Rollin, *Special Pathogens branch, CDC*

RVF is an acute, febrile zoonotic disease caused by Rift Valley fever virus, which belongs to the family Bunyaviridae and genus Phlebovirus. The virus is primarily a vector-borne zoonotic pathogen. Humans acquire RVF through bites from infected mosquitoes or, more frequently, through exposure to the blood, body fluids, or tissues of animals that have been bitten by infected mosquitoes. Direct exposure to infected animals can occur during slaughter or through veterinary and obstetric procedures. Outbreaks are usually associated with heavy rainfalls. In the last 10 years, several outbreaks occurred in east Africa 1997-98, Saudi Arabia and Yemen 2000-01, Kenya, Somalia and Tanzania in 2006-7, Sudan 2007 and more recently in Madagascar. Generally, the risk for RVF infection among travelers is low, unless they visit areas where an outbreak is occurring and are bitten by infected mosquitoes or come in contact with body fluids, uncooked tissue, or aerosols from infected livestock. No preventive RVF medications or licensed vaccines for humans exist. Travelers to affected areas should reduce their risk for infection by protecting themselves from mosquito bites and by avoiding direct contact with livestock.

DENGUE IN TRAVELLERS

Annelies Wilder-Smith, *MD PhD MIH DTM&H FRCP FACTM, Director, Travellers' Screening & Vaccination Centre*
Associate Professor, National University Singapore

Dengue is endemic in most tropical and subtropical countries, many of which are popular tourist destinations. The escalating epidemic of dengue over the past decades is in tandem with an increasing incidence of dengue in travellers. In some case series, dengue fever now presents the second most frequent cause of hospitalization in travelers returning from the tropics. Prospective studies on dengue seroconversion rates in travelers revealed an incidence of dengue between 2.9% and 6.7%. These data demonstrate that dengue fever poses a substantial threat to travelers to the tropics. The incidence in travelers may be as high as that of malaria (without chemoprophylaxis), and is higher than that of other travel related diseases such as hepatitis A or typhoid fever. Risk factors for acquiring dengue depend on duration of travel, season and destination. Clinical manifestation in travellers may differ from that seen in the endemic population.

As international travellers have the potential both to acquire and to spread dengue virus infection, it is paramount that health care providers have an understanding of the epidemiology, clinical spectrum, diagnosis, management and prevention of dengue virus infections in travellers. This talk will provide an update on recent changes in the epidemiology of dengue, new findings in relation to travel and dengue as well as new insights in the development of a dengue vaccine.

A GLOBAL PERSPECTIVE ON SEASONAL, ZONOTIC AND PANDEMIC INFLUENZA

Elizabeth Mumford, *DVM, MS, WHO Global Influenza Programme*

The current panzootic of avian influenza due to H5N1 virus has had a great economic and social impact, in part due to its effects on animal and human health. From November 2003 through 8 April 2008, 60 countries have reported H5N1 infection in poultry or wild birds, 379 human cases have been confirmed in 14 countries, and 239 of these patients have died. The continued threat of emergence of a pandemic influenza strain has influenced public health priorities and government policies worldwide.

For travellers, different risks and considerations exist for infections due to seasonal compared to avian (or other animal) influenza viruses. Seasonal influenza infections are common in travellers, especially in larger groups composed of geographically diverse participants. In contrast, avian influenza H5N1 infection has not yet been documented in international travellers returning from affected areas. Currently, WHO offers influenza-related guidance for travelers on use of seasonal vaccines, as well as guidance on traveling to/from avian influenza H5N1-affected countries, on the clinical and pharmacological management of human cases of avian influenza infection and suspected cases, on protection of people contacting potentially infected animals and potential risks from food, and on many other related topics.

In the event of an influenza pandemic, additional risks and considerations will become important. The current public health strategies and recommendations for pandemic preparedness, including travel-related issues, are currently under revision. The International Health Regulations provides rules for WHO member countries on a variety of issues, including many related to travel, travelers, management of borders, and protocols to be implemented during a public health event of international concern (PHEIC), such as a pandemic. WHO provides updated information on the global situation regarding influenza in humans through its website.

THE CHALLENGE OF MANAGING THE PANDEMIC POTENTIAL IN THE ANIMAL RESERVOIR

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Avian influenza is an OIE listed disease that has become a disease of great importance both for animal and human health. The increased relevance of AI in the fields of animal and human health, has highlighted the lack of scientific information on several aspects of the disease, which has hampered the adequate management of some of the recent crises. Millions of animals have died, and there is growing concern over the loss of human lives and over the management of the pandemic potential.

Until 1999, Highly Pathogenic Avian Influenza (HPAI) was considered a rare disease, with only 18 primary outbreaks reported since 1959. At the turn of the millennium, HPAI initiated a series of outbreaks with different characteristics to what had been previously seen. The Italian H7N1 1999-2000, and Dutch H7N7 2003 caused outbreaks of unprecedented magnitude were only a prelude to the ongoing H5N1 crisis. The latter appears to represent the possibly the greatest threat to animal health, with very serious implications for public health that the veterinary community has ever been called to face.

Avian influenza has become widespread in vast areas including Asia, the Middle East, Europe and Africa. This opportunity given to the virus has greatly increased its potentials, affecting the health of wild and domestic animals and of humans. Currently, human health is affected both in terms of

the reduction of food security and of the infection of humans as a prelude to the emergence of a new pandemic virus.

Highly Pathogenic avian influenza is believed to originate from an H5 or H7 precursor of low pathogenicity harboured in wild birds, primarily Anseriformes. The introduction of this progenitor into domestic poultry has caused, on several occasions the mutation of the low pathogenicity virus to a highly pathogenic mutant containing multiple basic aminoacids at the cleavage site of the haemagglutinin molecule. This mutation enables the virus to become systemic, replicate in vital organs and bring about the death of the bird.

Historically, highly pathogenic avian influenza caused a self-limiting disease as most birds affected died as a result of systemic infection. The virus infected poultry, did not infect wild birds and was apathogenic for waterfowl. The latter was only very rarely infected.

The virus is actively circulating in birds reared for agricultural purposes in Asia, the Middle East and Africa and in the Eurasian wild bird population. It is now able to cause a 50% fatality rate in humans and has acquired the capability of killing domestic and wild waterfowl. It has also affected other atypical hosts such as felines and dogs.

The crucial issue in resolving this situation is to limit the circulation of the virus in the animal reservoir, as this represents a never-ending source of virus. Although specific tools are available, the infrastructure and economic conditions of most of the affected areas are insufficient to react to the emergency. At the rural level, basic hygienic measures are rarely respected in animal husbandry and no concept of disease control measures is known. The social behaviour of the rural human population includes habits which facilitate the spread of infection, within the same village and, through trade, to other villages. International interventions are therefore to be focused primarily on education programmes and on veterinary support to farmers.

The medical, veterinary and agricultural scientific communities are challenged with a virus that is moving in a tri-dimensional fashion, modifying itself as it adapts to different species and reassorting with other influenza viruses of avian and potentially mammalian origin, as it infects new species. A significant collaborative and financial effort in a transparent scientific environment are required to generate data and ideas contributing to the eradication effort.

Until the extensive circulation of the virus is limited in the avian reservoir, avian influenza will continue to remain an issue for food security and a global threat for animal and human health.

PANDEMIC INFLUENZA PREPAREDNESS IN THE EUROPEAN UNION

Franz Karcher, EU

Background

Seasonal influenza leads to thousands of deaths in the EU each year. There have been three pandemics in the 20th century – 1918, 1957 and 1968. Each has caused significant mortality. Human deaths related to avian influenza were first noted during an outbreak of H5N1 avian influenza in Hong-Kong in 1997. The SARS outbreak in 2003 served as an example of a newly emerging disease causing hundreds of deaths worldwide. The continued presence of H5N1, and the limited number of human cases, is a clear reminder. Certainly, another pandemic will occur, but we do not know when.

Pandemic Planning at EU and international level

Pandemic preparedness has become a political priority on the European political map since 2005, but is also a world-wide priority, with a significant role of international organisations – the UN,

WHO, OIE, FAO, and the World Bank. There has been a series of international conferences, many at Ministerial level, with the most recent one in New Delhi in December 2007. Significant funding has been raised internationally to help address H5N1 avian influenza and preparedness among affected countries for a pandemic. The EU Legal Framework is based on Article 152 of EC Treaty stipulating the role of the Commission to assist Member States in coordinating measures among themselves. The Community network on communicable diseases was established in 1998 and consists of two pillars, the Early Warning and Response System and the Surveillance network.

Development of EU Guidance

Brainstorming started in November 2001 when the Commission held a first conference in Brussels leading to the first Community Preparedness Plan adopted in March 2004. The Commission Communication of November 2005 on pandemic influenza preparedness and response planning in the European Union updated the 2004 guidance to take account of WHO's reviewed pandemic plan and the establishment of the European Centre for Disease Prevention and Control (ECDC). The EU plan describes, for each pandemic phase, the objectives, role and main tasks for Member States, the Commission, and Community agencies, based on planning and coordination, monitoring and assessment, prevention and containment, health system response and communication. The plan outlines key elements and sets of actions. Preparing and responding to influenza pandemics presents a formidable challenge. The ECDC can provide structured approach to the surveillance and control of influenza. Inter-sectoral action is a key issue in tackling pandemic influenza at Community and national levels. The plan is part of broader range of Commission activities, such as ongoing training of Member States on preparedness and response, scenario exercises to test national and European planning, improving collaboration between public health and animal health sectors and the development of internal business continuity planning, including against influenza, across the whole Commission.

Following up the EU plan

A number of challenges remain, such as improving interoperability of preparedness plans and coordination of countermeasures, improving crisis management, helping Member States on management of stockpiles of antivirals and purchase agreements for pandemic vaccines, boosting vaccine production capacity, working towards a coherent vaccination policy, and the Commission's research agenda.

Business Continuity Planning

A pandemic is indiscriminate – and can create major disruption to any organisation, social group, company or family. Business Continuity Planning taking account of the pandemic threat is needed within and across national, regional and local governments, in and across business, civil society and communities. A pandemic is but one example of a crisis that could threaten normal functioning.

How far have we got?

All Member States have pandemic plans taking into account their national structures and situation. Some countries are further advanced than others. There are already some good examples of local, regional and national initiatives and approaches. Key areas where more work is needed are integrated planning across governments and sectors, making plans operational at the local level, interoperability at national level, stepping up prevention efforts against seasonal influenza and extending influenza research.

Conclusions

A clear framework is in place for pandemic preparedness within the EU, and Member States have developed plans. Preparedness planning, however, is an ongoing process – there are still some major gaps to be filled, and there is need for significant effort over at least the next 2-3 years. Work

on inter-operability and further testing and refining of plans should be a priority. Pandemic preparedness planning needs to be integrated within business continuity preparations. For non-health sector entities, business continuity may be the starting point within which the threat from a pandemic can be addressed.

PROTECTING HEALTH IN EUROPE: ECDC, ITS MANDATE AND THE WORK ON INFLUENZA

Massimo Ciotti, *Deputy-Head, Preparedness and Response Unit*

The European Centre for Disease Prevention and Control (ECDC) was established in 2005. It is an EU agency with aim to strengthen Europe's defences against infectious diseases. It is seated in Stockholm, Sweden.

According to the Article 3 of the [HYPERLINK "http://ecdc.europa.eu/About_us/Key_Documents/ecdc_regulations.pdf"](http://ecdc.europa.eu/About_us/Key_Documents/ecdc_regulations.pdf) \t "_blank" founding Regulation, ECDC's mission is to identify, assess and communicate current and emerging threats to human health posed by infectious diseases.

In order to achieve this mission, ECDC works in partnership with national health protection bodies across Europe to strengthen and develop continent-wide disease surveillance and early warning systems. By working with experts throughout Europe, ECDC pools Europe's health knowledge, so as to develop authoritative scientific opinions about the risks posed by current and emerging infectious diseases.

ECDC works on Influenza through a disease-specific programme. The programme covers the three groups of influenza affecting humans namely:

- Human Seasonal Influenza
- Pandemic Influenza
- Avian Influenza

It does so by drawing on all parts of ECDC that is experts in public health, epidemiology, animal health, surveillance, vaccines, epidemic intelligence and communication, as well as contributions from external experts and specialized organizations. The Programme aims to contribute to:

- a decrease in the morbidity and mortality that is due to seasonal influenza through increased use of immunisation and better use of public health measures at national level;
- improved preparedness for a pandemic at regional (European), European Union, Member State and local level;
- a robust scientific base for influenza control in Europe including a balanced and relevant research programme.

A range of activities directed towards achieving these targets are ongoing or have been planned as part of a multiannual working plan. These activities are carried out in collaboration with Member States, the European Commission and other relevant international bodies and European networks.

How well prepared is Europe to face a pandemic?

ECDC became operational in May 2005. Since the summer of that year, assessing EU countries' preparedness against a pandemic has been our first major project. At the request of Commissioner

Kyprianou ECDC produced a first report on the status of preparedness in the EU and EEA/EFTA countries based on where we were in Autumn 2006.

In October 2007 ECDC completed the series of EU Pandemic Preparedness Self-Assessment visits to all EU and EEA countries. This began in August 2005 and means that all thirty EU/EEA countries were visited in a period of just over 2 years. This does not mean however that pandemic preparedness work is over, since all those assessments revealed that at least two more years are needed until preparedness can move from intense development work to maintenance.

Considerable progress has been achieved in building preparedness. Major investments of efforts and monies have been made in the health sectors in all Member States: they have produced national plans and are working with the Commission and ECDC to steadily improving their state of preparedness.

Most of the work to strengthen preparedness – for example, in ensuring plans are integrated across government – needs to be done at national level.

Much of the work done on pandemic preparedness over past 2 years can serve as a model for improving generic preparedness. Wherever possible countries should integrate the preparedness plans and practices established for influenza into generic preparedness. This is particularly important in 2008 as all countries are implementing the new International Health Regulations.

HEALTH CARE PREPAREDNESS

Deborah Levy, CDC

The healthcare system will be challenged in a severe influenza pandemic. Individual facility-based planning is insufficient and the sectors of the health system need to plan and prepare together. The engagement of supporting sectors such emergency call centers and local emergency management will also be required. The issues in healthcare preparedness that need consideration in the United States but have broad applicability will be reviewed. Challenging problems such as resource allocation, adjusting standards of care, and the determination of essential services will be discussed. Recommendations for addressing cross-sector planning will be provided.

MITIGATION MEASURES FOR PANDEMIC INFLUENZA IN ITALY: AN INDIVIDUAL BASED MODEL CONSIDERING DIFFERENT SCENARIOS

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Background

Individual-based models can provide the most reliable estimates of the spread of infectious diseases. In the present study, we evaluated the diffusion of pandemic influenza in Italy and the impact of various control measures, coupling a global SEIR model for importation of cases with an individual based model (IBM) describing the Italian epidemic.

Methodology/principal findings

We co-located the Italian population (57 million inhabitants) to households, schools and workplaces and we assigned travel destinations to match the 2001 census data.

We considered different R0 values (1.4; 1.7; 2), evaluating the impact of control measures (vaccination, antiviral prophylaxis -AVP-, international air travel restrictions and increased social distancing). The administration of two vaccine doses was considered, assuming that first dose would be administered 1-6 months after the first world case, and different values for vaccine effectiveness (VE). With no interventions, importation would occur 37-77 days after the first world case. Air travel restrictions would delay the importation of the pandemic by 7-37 days. With an R0 of 1.4 or 1.7, the use of combined measures would reduce clinical attack rates (AR) from 21-31% to 0.3-4%. Assuming an R0 of 2, the AR would decrease from 38% to 8%, yet only if vaccination were started within 2 months of the first world case, in combination with a 90% reduction in international air traffic, closure of schools/workplaces for 4 weeks and AVP of household and school/work close contacts of clinical cases. Varying VE would not substantially affect the results.

Conclusions

This IBM, which is based on country-specific demographic data, could be suitable for the real-time evaluation of measures to be undertaken in the event of the emergence of a new pandemic influenza virus. All preventive measures considered should be implemented to mitigate the pandemic.

CHOLERA AND TYPHOID FEVER VACCINES

Walter Pasini, *WHO Collaborating Centre For Tourist Health & Travel Medicine*

Cholera and Typhoid Fever are common diseases in the developing countries. Cholera is caused by *Vibrio cholerae* bacteria, serogroups O1 and O139. Infection occurs through ingestion of food or water contaminated directly or indirectly by faeces or vomitus of infected persons.

Cholera affects only humans; there is no insect vector or animal reservoir host.

An acute enteric disease varying in severity. Most infections are asymptomatic (i.e. do not cause any illness). In mild cases, diarrhoea occurs without other symptoms. In severe cases, there is sudden onset of profuse watery diarrhoea with nausea and vomiting and rapid development of dehydration. In severe untreated cases, death may occur within a few hours due to dehydration leading to circulatory collapse.

Typhoid Fever is caused by *Salmonella typhi*, the typhoid bacillus, which infects only humans. Similar paratyphoid and enteric fevers are caused by other species of *Salmonella*, which infect domestic animals as well as humans. Infection is transmitted by consumption of contaminated food or water.

All travellers to endemic areas are at potential risk of typhoid fever, although the risk is generally low in tourist and business centres where standards of accommodation, sanitation and food hygiene are high. The risk is particularly high in the Indian subcontinent.

Travellers should protect themselves against typhoid fever and cholera with the available vaccines. Oral Ty21a and Injectable Vi CPS are safe and effective against typhoid fever.

However, their efficacy in children under 2 years of age has not been demonstrated.

The inactivated or killed cholera vaccine confers high-grade (85–90%) protection for 6 months after the second dose. After 3 years, protection remains as high as 62% in vaccine recipients over 5 years of age.

General Practitioners and Travel Clinics should implement the vaccination against Cholera and Typhoid Fever and recommend all the traveler to adopt precautions for avoiding unsafe food and drink and all the possible water and foodborne diseases.

CHOLERA VACCINE FOR TRAVELLING WORKERS IN RISK AREAS

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Background

Cholera vaccine is only recommended for workers that stay in the highest risk areas or in areas with a current epidemic under unsanitary conditions and without access to Western style medical care. The highest incidence of the cholera cases in the world occurs in Africa. Areas with current epidemic are now in Latin America and Middle East. In this perspective, the cholera vaccine has been inserted (keeping in mind the numerous pre-travel variables) in the schemes of immunization protocols for specific areas of destination, predisposed with a multi-disciplinary approach and used for workers who travel and sojourn abroad.

Methods

It has been analyzed the data of the travel clinic, concerning the administration of cholera vaccine in the years 2005-2006-2007, about the workers in foreign countries. The oral cholera vaccine, in co-administration with other vaccines, has been inserted in the program of immunization for people who work in foreign countries, related to the degree of infectious risk and destination areas (Sub-Saharan Africa, China, Indian subcontinent, Asian Southeast, Southern and Central America, Caribbean area). The KWC B- subunit oral cholera vaccine is taken in 2 doses, separated by 7 days. The vaccine contains the formalin and heat-inactivated whole bacterial cells from the V. cholerae 01 Inaba, Ogawa and El Tor strains and recombinant B subunit of the toxin. The first dose is co-administered to the other recommended vaccines for the travel and the second dose is administered together with the second dose of hepatitis A and B vaccine after 7 days (accelerate schedule)

Results

2,575 cholera vaccines were administered in 2005 (1,550 to workers in mission to the foreign countries); 4,196 in 2006 (1,500 to workers); 4,609 in 2007 (1,450 to workers). The immunized workers belonged to 5 great categories: administrative (es. employees, diplomatic), technique (es. engineers, technical specialized), information (es. journalists, broadcasting and press workers), specialized workers (es. carpenters, electricians), solidarity (es. religious, voluntary, operators of non government organizations).

Conclusions

Oral cholera vaccine results safe and well-tolerated, of easy administration together with the other recommended vaccines for the working stay, and has also been used for the partial protection against enterotoxigenic E.coli (ETEC) infection. It represents an effective tool of primary prevention for the workers that operate in foreign countries.

COMPLIANCE TO HEPATITIS A, HEPATITIS B AND HEPATITIS A+B VACCINATION SCHEDULES BY INTERNATIONAL TRAVELLERS IN TUSCANY

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Background and Objective

The efficacy of vaccination against Hepatitis A and B viruses, both from an individual and a public health perspective, essentially depends on the adherence of the individuals with the approved vaccination schedules. Non-compliance with vaccination schedules undermine the potential benefit of immunisations especially for Hepatitis B. Studies carried out with the hepatitis A vaccine have shown that a single dose is sufficient to obtain a seroconversion rate of 97%, this rate increases to 99-100% after the second dose. The commercially available Hepatitis B and Hepatitis A+B requires three doses (0-1-6) to obtain a protection of close to 100%. This study aims to assess the full adherence rates to the standard Hepatitis A (0-6), Hepatitis B (0-1-6) and Hepatitis A+B (0-1-6) vaccination schedules of international travellers initiating a vaccination schedule in two Tuscan travel clinics.

Method

A descriptive study. Data relative to Hepatitis A, Hepatitis B and Hepatitis A+B vaccination of 5572 international travellers who initiated their vaccination schedule during the years 2005 and 2006 were obtained from the databases of the travel clinics of two Local Health Authorities (Florence and Lucca) in Tuscany.

Results

The adherence to all three doses of the Hepatitis A+B (N=1724) vaccination schedule was 86,77% for the second dose and 75,81% for the third. International travellers presented in 80,68% of the cases for the second dose and 68,70% for the third dose for Hepatitis B (N=409). The adherence to the second dose of the Hepatitis A (N=3439) vaccine was 41,61%.

Conclusions

Poor adherence to vaccination schedules in Tuscany is a matter of concern, especially with regards to the adherence to the Hepatitis B and Hepatitis A+B vaccine as three doses are needed to obtain a sufficient seroconversion. This situation demands close examination and the identification of specific interventions that may enhance the adherence of international travellers to the vaccination schedules. The scientific literature suggests that alternative vaccination schedules, reminders through new technologies (SMS and E-mail) and better communication in the travel clinic might improve the adherence to vaccination schedules. The travel clinics in Tuscany need to adopt some if not all of these strategies to improve the adherence of international travellers to the vaccination schedules.

USE OF CLUSTER AND LOT QUALITY ASSURANCE SAMPLING TO EVALUATE THE NATIONAL YELLOW FEVER IMMUNIZATION CAMPAIGN IN BOLIVIA IN 2007

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Yellow Fever (YF) is a vaccine preventable viral haemorrhagic fever transmitted by mosquitoes in Africa and South America. Outbreaks of YF have occurred recently in Venezuela, Colombia, Brazil, Peru and Bolivia. Depending on mosquito presence, in Bolivia YF is endemic in the tropical lowlands and not in the highlands. Following a national YF vaccination campaign in April-June 2007 targeting the 2-44 year old Bolivian population, we conducted surveys to estimate vaccine coverage in endemic and non-endemic areas and to determine whether some districts had unsatisfactory levels of coverage (<70%).

We used two-stage cluster sampling to estimate coverage (confidence level 95%, precision 5%, expected coverage 90%), conducting two surveys in the endemic and non-endemic areas, each consisting of 25x12 clusters. We collected information on vaccination status, reasons for non-vaccination and knowledge of the campaign. We used Lot Quality Assurance Sampling (LQAS) to identify lots (districts) with low coverage. We selected lots based on administrative coverage (<70%), large population size and on YF endemicity. Sample was 35 individuals per lot (alpha error 6% if true coverage 70%; beta error 6% if true coverage 90%; decision value 6). To increase feasibility we divided lots in 5x7 clusters. To investigate the impact of this clustered design we calculated alpha and beta in simulations where each clusters true coverage was sampled from a normal distribution with a mean of 70% / 90% and standard deviation (SD) ranging from 0 to 10%.

Estimated YF vaccination coverage was 84.3% (95%CI:78.9-89.7) in endemic areas, 86.8% (82.5–91.0) in non-endemic, and 86.0% (82.8–89.1) nationally. The most common reasons for non-vaccination were in endemic areas lack of time (41.3%) and in the non-endemic being out of town (23.7%) and lack of time (23.7%). LQAS was conducted in 11 lots, out of which four had low coverage. In five lots results were inconsistent with administrative coverage. The simulations showed that hypothesising a SD of 10% in the 5x7 clusters increased alpha to 10% and beta to 12% and a SD of 5% increased alpha to 7% and beta to 7%.

Estimated coverage was high both in endemic and non-endemic areas, although below the target (90%). Discrepancies between administrative coverage and LQAS results may be due to incorrect population data. The simulations suggested that even allowing for clustering in LQAS the overall statistical errors would remain low. Catch-up campaigns are recommended in districts with unsatisfactory coverage.

SHIP SHAPE: EPIDEMIOLOGY OF GASTROENTERITIS AND SANITATION

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Background

In 1975, the Vessel Sanitation Program (VSP), Centers for Disease Control and Prevention (CDC), began conduct of environmental sanitation inspections and surveillance for enteric diseases aboard passenger cruise ships. This was in response to widespread findings of food-handling and water sanitation practice deficiencies that posed a significant potential for transmission of foodborne and waterborne diseases. From 1989-2001, foodborne outbreaks declined and gastroenteritis incidence rates improved, associated with improved environmental sanitation performance by cruise ships. However, since 2002, with the emergence of noroviruses associated with person-to-person and environmental transmission of disease, gastroenteritis incidence on cruise ships rose.

Methods

Evaluation of 15 years of ship sanitation inspection data from the National Center for Environmental Health, CDC, performance in specific sanitation categories, and analysis of gastroenteritis incidence and outbreaks during 2001-2006.

Results

The percentage of inspections with violations decreased among five of nine inspection categories: Washing Facilities, Contact Surfaces, Facility Maintenance, Food Handling, and Communicable Disease Practices. During 2001-2006, the background and outbreak-associated incidence rates of passengers with acute gastroenteritis per 100,000 passenger-days were 26 and 657, respectively. Acute gastroenteritis outbreaks per 1000 cruises increased from 0.7 in 2001 to 9.1 in 2006; outbreaks increased from 2 in 2001 to a median of 22/year in 2002-2004, to 38 in 2006. Median ship inspection scores remained relatively constant during the study period (median 95/100), and were not significantly associated with gastroenteritis incidence rates (RR, 1.00; 95% CI, 0.98-1.02) or outbreak frequency (Spearman's coefficient, 0.01, $p=0.84$).

Conclusions

During the period 1990-2005, scores from cruise ship inspections steadily improved. Violations representing deficiencies in food-handling practices continue to decrease, while violations associated with water sanitation remain proportionally low. Passenger cases of gastroenteritis on an average 7-day cruise increased from two cases during 1990-2000 to four cases by 2006. Increased outbreaks, despite good inspection performance, is mostly attributable to noroviruses and highlights the inability of environmental programs to fully predict and prevent risk factors common to person-to-person and fomite spread of disease.

LEGIONNAIRES' DISEASE IN TRAVELLERS: OCCURRENCE, RISK FACTORS AND PREVENTION

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Bacteria of the genus *Legionella* normally inhabit fresh water, but the major reservoirs are the human-made aquatic environments, particularly warm water systems. *Legionella* spp survive as intracellular parasite of free-living protozoa and in buildings are associated with biofilms. These peculiar growth abilities are responsible for the frequent contamination of artificial water systems,

as well as difficulties in eradicating the germ, and the scarce efficacy of biocides. For these reasons, Legionnaires' disease is increasing year after year and in Europe about 20% of cases are reported as associated with travels. A special surveillance scheme has been established in Europe to track all cases, and guidelines for control and prevention of the disease have been adopted in many countries. Italy, Spain and France are the countries more frequently visited by travel-associated cases. In 2005, the highest number of reported cases in tourists was associated with travel in Italy mainly involving hotels/residences. Due to this high prevalence, we estimated Legionella spp. contamination in a representative number of Italian hotels. Hot water systems of Italian hotels were strongly colonised by Legionella: 75% of the examined buildings and 60% of the water samples were contaminated mainly at levels $\geq 10,000$ CFU liter⁻¹, and *L. pneumophila* was the most frequently isolated species. *L. pneumophila* serogroup 1, the main category of organism detected in outbreaks among hotel guests, was isolated from 45.8% of the contaminated sites. Hotel age was the main factor associated with contamination, whereas other risk factors differed depending on the contaminating species and serogroup. In conclusion, Italian hotels, particularly those located in old buildings, represent a major risk source for Legionnaires' disease, due to the high frequency of Legionella contamination, high germ concentration and major *L. pneumophila* sg 1 colonisation. After a remarkable cluster in a coastal area of Italy, the Public Health Service forced accommodation facilities to adopt preventive measures, and from 2004 to 2007 verified the effects on germ contamination and case onset. Implementation of guidelines substantially reduced the cases but with time the positive effect was downsized. The main contaminating factors associated with case onset were to have *L. pneumophila* serogroup 1, levels $>10,000$ CFU liter⁻¹, and $>60\%$ positive points. Maintenance, cleaning procedures and weak disinfection have limited effects on decreasing contamination. Our findings suggest that to be effective preventive measures should be constantly repeated, and a real reduction of risk would be obtained knowing the level and type of colonization prior to implementing guidelines, allowing the most appropriate intervention to be selected for each situation, also in terms of expenditure. Web site: HYPERLINK "http://www.legionellaonline.it" www.legionellaonline.it

OVERVIEW OF PEPFAR: PREVENTION OF MEDICAL TRANSMISSION: BLOOD SAFETY AND INJECTION SAFETY

C. Reed, CDC

Background

In 2003, PEPFAR (President's Emergency Plan for AIDS Relief) began as a five-year, multifaceted approach to combating the HIV/AIDS around the world:

- \$10 billion for the 15 focus or most heavily impacted countries, which account for 50% of HIV infections in the world;
- \$4 billion for 105 additional countries and for additional activities including HIV/AIDS research; and
- \$1 billion over five years for the Global Fund to Fight AIDS, Tuberculosis, and Malaria.
- PEPFAR goals in the 15 "focus" countries are to support, in an accountable and sustainable way:
 - Prevention of 7 million new HIV infections
 - Treatment of 2 million HIV-infected people
 - Care for 10 million people infected and affected by HIV/AIDS, including orphans and vulnerable children

Through the Emergency Plan, the U.S. Government is working with international, national and local leaders worldwide to support integrated prevention, treatment and care programs. Working with UNAIDS, the World Bank, the U.K. Department for International Development, major donors and national partners key principles for supporting coordinated country-driven action were developed and are known as the "Three Ones": - one national plan, one national coordinating authority, and one national monitoring and evaluation system in each of the host countries in which organizations work. Rather than mandating that all contributors do the same things in the same ways, the Three Ones facilitate complementary and efficient action in support of host nations. Inherent in the principles is the shared recognition of the urgent need for action that supports inclusive national ownership, clear accountability and the development of capacity and sustainability.

In Africa, 5-10% of early infections of HIV were due to medical transmission. According to WHO as of 2006 139 countries did not have 100% voluntary donation, 6 million tests were not done on donated blood and unsafe injection practices accounted for 21 million infections with hepatitis B, 2 million hepatitis C and 260,000 HIV annually. In 1994 the Kenya Ministry of Health and CDC demonstrated that 2% of transfusions transmitted HIV.

Methods

Fifty-five percent of the total PEPFAR budget is devoted to ART. Care for people living with HIV/AIDS complements and enhances ART. It begins with the HIV positive diagnosis and extends through the end of life. HIV prevention efforts make up 22% of the funding and include prevention of mother to child transmission (PMTCT); abstinence/be faithful activities; condoms and related prevention activities and prevention of medical transmission via promotion of injection and blood safety activities. Blood safety involves rapid strengthening of national blood services in the focus countries to provide an adequate amount of safe blood collected from low risk, volunteer, non-remunerated donors. Blood is not only tested for the presence of HIV but also other transfusion transmissible infections such as Hepatitis B, Hepatitis C and syphilis. Injection safety programs reduce the number of unsafe and unnecessary injections by assisting with development of national systems for the procurement of sufficient, disposable, single use injection equipment; safe disposal of used injection equipment and training of pre-service and in-service staff on safe injection practices.

Results

A total of \$18 billion will have been devoted to PEPFAR by the end of year 5. One-third of the US support to the Global Fund has been through PEPFAR. As of September 30 2007 1,358,500 people were provided anti-retroviral treatment, women were provided with PMTCT services during 10 million pregnancies, and 6.6 million received care, including more than 2.7 million orphans and vulnerable children. There were also 18.7 million counseling and testing sessions in which men, women, and children could learn their HIV status. New strategies that have been demonstrated to be effective have also been incorporated such as programs to provide safe circumcision to adult males.

Direct support for blood safety was provided to 14 of the focus countries. Eleven countries developed national strategies for the first time and the collection of blood through National Blood Transfusions Services (NBTS) between 2003 and 2007 has increased - tripling in Kenya and approximately doubling in Botswana, Ethiopia, Mozambique and Haiti. Eleven countries can now meet 50 percent of their annual demand for safe blood - up from just four in 2003. During the same time the HIV prevalence has gone down in nearly all countries through better selection of blood donors and screening before donation. South Africa, has not had a transfusion associated case of HIV in the two years since individual nucleic acid testing was introduced, compared to the 1-2 cases a year previously. In order to build capacity for a sustainable response into the future,

PEPFAR also supported training or retraining 78,000 in medical injection safety in 31 countries worldwide, as well as providing commodities for safe medical injections.

Conclusion

These prevention and treatment efforts combine to improve the health and care of local populations in the short term and support infrastructure for long term sustainability. However, increases in medical care provided to HIV positive individuals and in the need for laboratory monitoring of persons on ARV increase the volume of medical waste that must be disposed of safely and the importance of injection safety measures to protect the health care workforce.

Travelers, whether tourists, expatriates, missionary/volunteers, workers or those returning home to visit friends and relatives also share in the benefits from these improved standards of injection safety and development of a safe blood supply.

USING ROUTINELY COLLECTED METEOROLOGICAL DATA TO DETERMINE LEISHMANIASIS AND MALARIA RISK IN SOUTHERN AFGHANISTAN

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Background

Leishmaniasis and malaria are both seasonal and focal disease risks, in the Southern Plateau physiographical region of Afghanistan. There is limited understanding of the local meteorological factors which determine the level of risk for each disease.

Methods

We correlated weekly sandfly and mosquito catches made at a single location in southern Afghanistan between March–November 2007, with routinely collected meteorological data from the same location and for the same time period. Mosquitoes were speciated and all anopheline mosquitoes were tested for the presence of Plasmodium sporozoites.

Results

In this physiographical region, multiplication of both insect families is triggered once the mean daily minimum temperature exceeds 21°C. Sandfly numbers start to increase in late May then decrease and increase again, cyclically, until mid-September. There are 6 successive generational cycles of sandflies. Mosquito numbers also start to increase in late May and continue to decrease and increase cyclically until early November, in 9 generational cycles. Heavy rainfall reduces sandfly numbers, but not mosquito numbers. For leishmaniasis the peak transmission months in southern Afghanistan are June–July. For malaria the peak transmission months are June–August, with a secondary peak in October. However all anopheline mosquitoes for this location tested negative for sporozoites.

Conclusions

There is no leishmaniasis transmission in the Southern Plateau physiographical region of Afghanistan between October–April, and no malaria transmission between December–April. Malaria transmission does not occur at any time of the year, at Kandahar Airfield.

ITALIAN RED CROSS AND ITALIAN MOH TASKFORCE FOR CROSS-BORDER SURVEILLANCE AND OF COMMUNICABLE DISEASES

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Introduction

The great number of people and amount of goods and livestock that travel around the globe each day has made pandemics a realistic threat of our times. Today an unprecedented need for Cross Border Public Health comprising of international prophylaxis, high level surveillance and cross border containment of Public Health Events of International Concern (PHEIC) is felt at local, national and international level.

Strategic guidelines for addressing international surveillance and control of PHEIC are expressed in the new International Health Regulations (IHR2005) and each Nation, through its designated focal points, is required to comply.

An agreement between the Italian Ministry of Health (MoH) - Department of Health Prevention CCM- and the Italian Red Cross (ItRC) – Lazio Region – was signed on January 2007 in order to jointly train ItRC staff and volunteers to form a task force to deploy in case of emergency to strengthen the surveillance and containment systems in the country.

Methods

The training plan targeted the two components of the ItRC (Military corps and the voluntary nurses) who are nationally equiparated to auxiliary Armed Forces. Two parallel courses were carried out, one for health and one for logistic staff, customized both in the type and duration of lessons and in the different practical simulations carried out in the field. Moreover health staff, including MDs, nurses and paramedics, underwent an admission test to evaluate psychological balance, physical aptitude and motivation of the candidate and to assess his/her basic knowledge on IHR2005, PHEIC and cross-border disease surveillance and control. Candidates underwent an mid-course evaluation and final practical and theory exams. After passing this training candidates were certified as staff qualified to operate in cross border health threat situations at frontier, port and airport level.

Results

Three courses were carried out, two in Rome from the 11th to the 13th and from the 20th to the 22nd of May 2007 and one in Milan from the 14th to the 16th of September 2007.

In Rome overall 99 candidates were admitted to the training: 9 MDs, 11 nurses, 26 ItRC trained voluntary nurses and 20 trained emergency medical technicians (for a total of 46 paramedics) and 33 logisticians.

In Milan 82 candidates were admitted: 9 MDs, 17 nurses, 12 ItRC trained voluntary nurses and 35 trained emergency medical technicians (for a total of 47 paramedics) and 9 logisticians.

80% of all participants passed the final examinations and were enrolled in the Regional ItRC-MoH Taskforce for cross-border public health.

While in Rome adherence was requested after having passed the abovementioned exams, in Milan participants signed the agreement to enter the Taskforce before undergoing the training.

Conclusions

The creation of a trained regional ItRC-MoH Taskforce for cross-border public health, able to install and operate a mobile health unit at frontiers, ports and airports, responds to the requirements expressed in IHR2005. It allows focal empowerment of national surveillance activities, implementation of local management and isolation of cases during an outbreak and results in a higher chance of epidemic containment. Transferral of infective patients to hospitals located in densely populated cities would, in this way, be limited to those cases that cannot be managed in the mobile health unit.

PERFORMANCE OF SELF-DIAGNOSIS AND STANDBY TREATMENT OF MALARIA IN INTERNATIONAL OILFIELD SERVICE EMPLOYEES IN THE FIELD

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In this cross-sectional, web-based study we evaluated the adherence and performance of a preventive malaria program, including the practice of self-diagnosis with a rapid diagnostic test and standby emergency treatment (Curative Malaria Kit), in non-immune expatriates who worked in highly malaria endemic areas. A web-based questionnaire was sent in July 2007 to oilfield service company employees who might have travelled to, lived or worked in a malarious area. 2350 employees completed the questionnaire.

The mean age of the respondents was 36 years, 88% was male and the malaria countries visited were amongst those with the highest incidence of *Plasmodium falciparum* (in descending order of frequency: Angola, Cameroon, Nigeria, India, Gabon, Sudan, Equatorial Guinea, Democratic Republic of Congo and Chad). One-third (N=648) of these expatriates consulted a doctor for malaria symptoms and almost half (29 of 68) of all hospitalizations was due to malaria.

The mandatory Malaria Training for non-immunes was completed by 92% of those who visited or worked in a high risk malaria country. Overall, 70% of the respondents at risk also received the Curative Malaria Kit. Introduction of the malaria awareness training and the kit significantly increased malaria knowledge [relative risk (RR) of 1.5, 95%CI 1.2-2.1], attitudes and practices, including compliance to chemoprophylaxis [RR=2.2, 95%CI 1.6-3.2]. Hospitalization for malaria was suggested to be reduced by the program [RR=0.4, 95%CI 0.1-1.1], albeit not significantly. Concerning the rapid diagnostic test, respondents who did not receive instructions were two times [RR=2.3, 95%CI 1.6-3.3] more likely to have difficulties, and those who received instructions adhered poorly to the timing of repeating the test. Moreover, 6% (31 of 513) of those with a negative test result were diagnosed with malaria by a local doctor. 57% (252 of 441) of the respondents who took the curative medication that was included in the kit did not have a positive test or clinical malaria diagnosis made by a doctor.

This survey demonstrates that a comprehensive program targeting malaria prevention in expatriates can be effectively implemented and that it significantly increases malaria awareness. To investigate the contribution of the rapid diagnostic test to prevention of malaria in expatriates, more research is needed with inclusion of a reliable control for malaria infection.

THE RISKS OF TRAVELLING AND

PLANNING SAFETY and SECURITY of TRAVEL

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There is an increasing need for travel health professionals to include safety and security issues on a checklist of itinerary items to be discussed at initial pre-travel consultation. So where does one start?

There are many factors to ensuring secure travel and pre-travel counselling is essential and assessment of potential risk requires a global approach, looking at:

- 1) Health surveillance whilst travelling
- 2) Personal Accidents and Injury
- 3) Violence
- 4) Societal Transport Accidents (Air and Motor)
- 5) Devastational Societal Disaster
- 6) Swimming
- 7) Drugs
- 8) Terrorism
- 9) Bioterrorism
- 10) Pre-travel Planning

These two presentations seek to devise a protocol, for pre-travel security assessment, for travel health professionals to implement when talking with intending travellers.

First thing to do, to secure traveller comfort, is to identify and defuse any possible stress of travel. This needs to be developed at the first, and often only, consultation. All those travelling overseas for short or long periods of time need to have some understanding of how to personally protect themselves, physically and psychological, whilst they travel.

A pragmatic guide to advising travellers on their own travel safety involves a checklist assessment to minimise problems that may present suddenly upon any macro traveller.

Personal preparation before travel

The travellers can be advised on the following issues. Care with all advice given is required, because consultations need to reflect information and not alarm at the prospect of travel.

A) Physically, travellers need to

- Make 2 copies of passport identification pages:
- Plan emergency finances and credit card back-up
- Shop around for a BEST in insurance policy, but all travellers should be stressed upon to purchase insurance for their travel.
- Plan their journey fully by getting prior information on where they are to travel.
- Source an appropriate medical kit, that contains personal medications
- Give their full itinerary and contact details to folk they leave behind.

B) Psychologically, travellers need to

- Be psychological screened for long term deployments in remote regions
- Resolve outstanding social problems
- Prepared for the 'newness' of their intended situation

- Prepare for the bereavement process of departure, and leaving loved ones behind

D) Preventatively, travellers should go to a travel health source and update themselves on:

- Travel and topical diseases in the intended region of travel
- Coping with loneliness and extreme stressors
- Coping with the temptations of sex, drugs and alcohol
- Taking a few of their own familiars with them; music, books and the like

The assessment of NON-PERSONAL ISSUES of travel, allow for a better traveller equipped to make a journey stress-free and more comfortable by planning a 'deal with' routine of issues beyond their control: e.g. physical terrorism, involvement with crime, Biosecurity issues and societal disasters.

In day to day living there are going to be huge differences in what the travel and their families experience compared with what they loved in back home. Often travellers forget how hard this can be and so I think that the following issues need to be targeted for discussion, at least they need to be raised in travel to non-westernised regions:

- 1) dealing with moral issues like the reaction to beggars
- 2) experiencing cultures with different religion
- 3) coping with a different attitude to women in some societies.

It will be apparent that most travel health consultation cannot possibly deal with many of these issues due to time constraints. Nevertheless it is hugely important that an attempt be made to do so, or that a traveller be referred to those that will take the time. More and more global travel is filled with destabilisers (like safety and security issues) that can destroy a travel experience. Should this be so then the thrill of travel is gone. Often having done so, it is hard to restore lost enthusiasm.

TRAVEL INSURANCE AND EMERGENCY ASSISTANCE: PRE-EXISTING AND COMMON CONDITIONS THAT NEED ASSESSMENT FOR SAFETY OF TRAVEL

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Background

About half travellers abroad experience some kind of health problem or concern and travel insurance is thought to be an important safety net for travellers. The objective of this session is to provide some background for those providing advice to travellers on the issues of travel insurance, emergency assistance and pre-existing and common conditions for travel insurance.

Methods

A review of PubMed and relevant policies and guidelines from websites of appropriate professional groups was undertaken.

Results

Travel insurance includes coverage for a range of travel and travel health related problems. Common conditions are the most frequently reported conditions in claims by travellers. One of the most important features of travel insurance is the emergency assistance service. This includes coverage for aeromedical retrieval, where required, which can be very expensive for the traveller

and their family. It is important that pre-existing conditions are assessed and stabilised before travel, particularly if no coverage for these conditions is available under the travel insurance policy. Not all travellers take out travel insurance nor do all travel health providers consistently discuss travel insurance with travellers.

Conclusions

Travel insurance represents an important safety net for travellers abroad. It is important that travellers are informed about the need for travel insurance. Although most claims are for common travel and health related problems, emergency assistance is an important feature of travel insurance.

SAFE AND SECURE TRAVEL INTO THE FUTURE

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Background

Concerns regarding personal safety of travellers has been heightened by terrorist events over the past 10 years. The objective of this session is to provide some background for those providing travel health advice on current and future directions on safe and secure travel.

Methods

A review of PubMed and relevant policies and guidelines from websites of appropriate professional groups was undertaken.

Results

Although many travellers are reportedly concerned about their personal safety when travelling abroad, it is an often neglected area in travel medicine. Personal safety should be one of the most important areas for travel health providers to cover, particularly as accidents and injuries are such an important cause of morbidity and mortality for travellers. Travellers are increasingly obtaining information on travel health, including personal safety, from the Internet.

Conclusions

Safety and security remain important issues for travel health providers to consider in the pre-travel consultation. The Internet is also playing an increasingly important role in informing travellers.

AIR EVACUATION UNDER BIOSAFETY CONTAINMENT OF PATIENTS WITH HIGHLY CONTAGIOUS INFECTIOUS DISEASES

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KEY WORDS High Infectious Disease, Aircraft Transit Isolators

Every year we have epidemics due to new-emerging or re-emerging highly contagious infectious diseases, such as SARS, Marburg fever, pandemic avian flu, etc.. Aeromedical Isolation Team is a rapid response team that can deploy to any area of the world, foreign or domestic, to transport and provide medical care under high containment to a limited number of patients exposed to, or infected with highly contagious, potentially lethal pathogens. For this duty, AIT includes two teams, each comprised of ten people (three physicians and seven nurses) and two Aircraft Transit Isolator (ATI) systems. This isolator completely separates the patient in a negative pressure envelope that protecting the accompanying medical team and the surrounding environment. Half suits and gloved sleeves incorporated in the envelope walls enable the attendants to examine and care for the patient. A battery powered air supply unit draws air through two inlet microbiological (HEPA) filters into the envelope and exhausts it through a similar filter at the foot end.

From January 2006 to December 2007 Italian Air Force AIT carried out three contagious patient using an isolator system. One of them with suspected Haemorrhagic fever and two with MDR tuberculosis. The organization of Italian Air Force AIT is basically founded on the model of U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) AIT. At the present, Italian and US teams are using the same procedures, training and equipments, and this similar capability is a good starting point for a future collaboration in operational scenarios.

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SMALL WATER SYSTEMS: PLANT MANAGEMENT AND WATER QUALITY

Claudia Lasagna, Luciano Coccagna, Giuliano Ziglio

WHO guidelines specify that “Access to safe drinking-water is important as a health and development issue at a national, regional and local level. In some regions, it has been shown that investments in water supply and sanitation can yield a net economic benefit, since the reductions in adverse health effects and health care costs outweigh the cost of undertaking the interventions. This is true for major water supply infrastructure investments through to water treatment in the home”. In the middle of this broad scenario we can find the so called “small water systems”, that is those systems where drinking water is produced for small communities. Such systems are often used in small villages as well as in holiday resorts all over the world, operating on raw water of different quality. The presentation will briefly describe what are the major problems to face, what the solutions and what the results, with particular reference to a technical handbook on the very subject that is going to appear on bookshelves in the next days.

POSTER

COUNSELLING FROM BIRTH TO VACCINATION

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Introduction

In the new 2005-2007 Calendar, as defined by the National Vaccination Plan, new vaccines such as "Varicella vaccine", "Meningitis Type C vaccine" and "Pneumonia vaccine" are introduced.

Problems linked with public health need to be underlined in the regional and national strategies, suggesting the new calendar in order to reach a target population. Health workers will be involved in the project, thanks to the educational activities of the national plan. It is aiming towards the elimination of measles and congenital rubella with the purpose, within 2007, to reduce rubella cases under 1:100.000 born alive and to identify and vaccinate exposed women after delivery.

Vaccination counselling will help the population to understand the vaccine calendar showing the importance of a responsible choice for healthy generations. The decision to get vaccinated and the consent to the current preventive strategies may be instances of psychological involving. Health workers must be attentive to the circulating notions about the risks/benefits of vaccines. An after-birth counselling with HBsAg-positive and Rubeotest-negative mothers of different nationalities would be extremely important for improving compliance.

Methods

Under the leadership of a new multidisciplinary coordination group, the department of public health together with the hospital department of Obstetrics and Gynecology issued some multilanguage brochures, teaching counselling techniques to health visitors to be used during their vaccination activities. For a year, meetings will be organized with the puerperas in order to help them to choose vaccinations, improving knowledge about benefits and risks. The first paediatrician check is usually held one month after birth. This period of time may be critical for the compliance, particularly for those mothers belonging to the risk-groups. A preliminary analysis was conducted on the birth-DRG (DRG 370-375), on rubeotest laboratory data and vaccination records of births in 2007 and of fertile women who required rubella vaccinations, in order to get a general view of the initial situation. Results. During 2007, in the "Mazzoni" Hospital (the only birth-point in the 13th area of Marche region) 706 women were hospitalized (108 of them foreigners) and the average age is 32. 13 mothers (3 of them foreigners) were not immunized against rubella. The foreigners puerperas are prevalently from China, Albania, Romania, Poland and Morocco: their average age is 29. During 2007, 924 newborn babies were registered; as for the 3% of them, their parents didn't answer to the first call for vaccinations for ideological or religion reasons, sometime out of carelessness and critical family conditions, or residence changing, or serious pathologies in the babies. No pregnant rubeotest negative woman was vaccinated. At the end of the project, the number of newborn babies vaccinated according to the national calendar and the number of mothers vaccinated, rubeotest negative at the first birth will be valued. In 2009 paediatricians, general practitioners and pharmacists will be involved into courses about vaccination counselling, together with volunteering groups, because they are important for a clear information to risk groups.

Discussion

The counselling methods aim to understand and help women during the creation of a new family arrangement and not in the planning of subsequent pregnancies. It is to be stressed the importance

of an accurate information about the new vaccines as, for example, the antimeningitis and the antipneumonia vaccine, in order to fight risks and have an important reduction of cases.

MEDICAL FITNESS STANDARD GUIDELINES OF THE ITALIAN SOCIETY OF OCCUPATIONAL HEALTH AND INDUSTRIAL HYGIENE USED FOR WORKERS TRAVELLING IN FOREIGN COUNTRIES.

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Background

The Italian Society of Occupational Health and Industrial Hygiene (SIMLII), beginning from 2003, has published, as scientific society, own guide lines (GL) to face complex problems and in fast evolution, additionally to the traditional tools of updating. The objective has been to provide to the occupational physicians, technical-scientific information and recommendations to correctly develop the physician activity with appropriate methodologies, with competence and professionalism. Working in foreign countries is object of a specific GL, because it is considered an important field of occupational health for large groups of workers, increasing not only in the volume of workers travelling but also in the speed and penetration of transportation.

The DLgs 626/94 forces the employer to implement the working activities risks assessment, to activate the medical surveillance with occupational physicians, able to establish the fitness for travelling workers.

Methods

The GL proposes indications of working fitness that keeps in mind 1) the risk considerations (type of trip, duration of stay, geographical area, climate, urban or rural working zone, housing conditions, hygienic-sanitary conditions of life, political and social climate) 2) the individual worker's health that plays a strong role in the individual's capacity to work in safety in new specific locations. The methodology of fitness criteria are based on the state of health and on the capacity of the individual to adapt, psychologically and physically, to the changes produced by the job and by the sociocultural situation of a different geographical area. The health surveillance is codified from the GL according to a defined scheme (pre-travel medical consultation, immunization, prophylaxis pharmacology, post travel debriefing etc.). The methodology of preassignment health evaluation, proposed by the GL, defines three possibilities: fit, fit with special conditions or limitations, unfit (prohibition to the trip and / or to the stay, or relative to particular geographical areas). The criteria of exclusion or unfit includes pathologies able to also interfere with adjustment to culture and work with proper medical therapy and surveillance: abuse of alcohol and other substances, cardiovascular and pulmonary pathologies; troubles of the renal function; unstable pathologies of the metabolism and / or endocrine; neurological progressive diseases, liver and hematological disorders; hemorrhagic gastrointestinal diseases (inflammatory bowel disease, peptic ulcer). The criteria of temporarily unfit are: acute intermittent illness which will resolve (appendicitis, pneumonia). The fit with special conditions or limitations concerns the subjects with mild chronic or recurrent health conditions which require regular medical care and surveillance: obesity, diabetes mellitus type II, mild asthma and moderate hypertension.; restriction may be applied because of specific problems such as hymenopteran allergy.

Conclusion

The GL goal is to provide preventive strategies for an organized medical preparation for travel-related work: 1) preserve the health and safety of the travel-worker; 2) optimize the travelling worker's capacity to carry out their assignment; 3) protect the health and safety of the colleagues.

REPRODUCTIVE TRACT INFECTIONS IN FEMALE SLUM POPULATION MUKURU, NAIROBI, KENYA

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Objectives

Non-treated reproductive tract infections (RTI) at an early stage may result in serious complications and sequelae, including infertility, fetal wastage, ectopic pregnancy, anogenital cancer and premature death, as well as neonatal and infant infections. Connection with HIV/AIDS has focused to greater attention to control sexually transmitted RTI.

Inhabitants of suburb slums in developing countries are highly vulnerable group due to migration, unsafe commercial sex workers, being orphaned, pedophilia, early sexual debut and early marriages, single parenthood, addiction to alcohol, low educational level and lack of job.

Methods

We have studied female patients living in Mukuru slums, Nairobi, Kenya who presented with RTI symptoms from October 2005 to May 2006 in Mary Immaculate Clinic, Industrial Area.

Diagnose was based on history, clinical examination, urinalysis, microscopy of native and Gram stained vaginal discharge, RPR and HIV serology. Significant correlations were looked for in 4 selected risk groups (HIV positive, pregnancy, failure of treatment and history of RTI) by univariate analyses.

Results

3.2% (384 from 12 328) of all patients was considered to have RTI. 75% (269 from 358) were women. Voluntary counseling and testing centre operating as part of our clinic documented 12.4% HIV positive in the area. Unusual vaginal discharge was associated with HIV positivity ($p < 0.05$). Urethral syndrome was associated with positive RTI history and treatment failure ($p < 0.05$). Main pathologic findings were *Candida* spp. (44%), *Trichomonas vaginalis* (11%), *Neisseria gonorrhoe* (79%) and clue cells (49%) alone or in combination. *Neisseria gonorrhoe* was significantly associated with pregnancy and HIV positivity ($p < 0.05$). Recurrent infection was caused mainly by *Candida* spp. ($p < 0.05$).

Ciprofloxacin, norfloxacin, aminopenicillines, erythromycin, doxycycline, metronidazole, fluconazole, clotrimazole and TMP/SMX were available for treatment in the clinic.

HIV positive women were significantly associated with palpable tumor of internal genital, *Candida* spp. infection in vaginal secret and urine, positive RTI history and failure of treatment. Pregnant women were treated by erythromycin for gonorrhoe, quinolones and doxycycline were not used.

Infection in pregnancy was significantly associated with bacterial vaginosis and gonorrhoe. Gram staining of vaginal secret and urinalysis was done in patients with recurrent infection and with failure of treatment ($p < 0.05$). Primary infected was often managed with syndromological approach.

Failure of treatment within 1 week was caused by bacterial vaginosis due to poor compliance with treatment of partner.

Conclusion

Women in slums of Nairobi are vulnerable group for reproductive tract infections. Treatment failure and reoccurrence was significantly high in patients with HIV. Patients with history of previous treatment for STI/RTI were HIV positive and had bacterial vaginosis (p=0.05). We propose package system for STI/RTI similar to TB treatment.

HEALTH SURVEILLANCE OF THE MASS MEDIA WORKERS TRAVELLING IN FOREIGN COUNTRIES

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Background

The DLgs 626/94 has introduced in Italy the obligation of a risk assessment for every kind of working sectors, also for those sectors which for many years have had specific laws about occupational health and safety, especially about travelling workers. The work in the foreign countries is in exponential increase due to the expansion of the international commerce and the consequent multinational organization of the firms. So employees are being increasingly called upon to undertake travel for business reasons. The World Tourism Organization has estimated that in the year 2000 approximately 700 million people travelled internationally. In Italy about 16 million people travelled for job reasons in 2002. For occupational medicine physicians, caring for this international workforce presents special challenges: prevention, recognition, diagnosis of communicable diseases, but also minimizing the impact of non-infectious travelled-related conditions.

Methods

The medical service of a broadcasting company has provided a comprehensive travel protection program and has applied it in the year 2007 for 453 mass media operators (348 male and 105 female) that have developed their activity in missions to the foreign countries in geographical risk areas. Subjects of the program are individuals making short-middle time trips and staying in each country or only transited. The risk assessment has analyzed many factors relates to international travel and specific work activities: events relate to natural calamity, social crisis, wars. Have been analyzed geographical areas with specific environmental hazard and indicators of endemicity of various infectious disease. It was also considered housing and hygienic conditions, foods and the different political and social conditions of the destination areas. The worker's individual health has an important role in the possibilities to overcome without damages the stay in particular geographical regions. The company medical service implemented the health surveillance program in cooperation with the university institute of occupational medicine and travel clinic. Medical plan contains: 1) medical examination and laboratory-instrumental tests to value the fitness for working in foreign countries; 2) immunizations required by the destination country and recommended; 3) antimalaric prophylaxis; 4) procedure of emergency care; 5) post-travel debriefing.

Results

In the year 2007, the program of health surveillance has allowed the mass media operators to work in safety, during 286 missions, for a total of 2576 days of permanence to the foreign countries.

271 workers have stayed in Asia, during 169 missions, for a total of 1.738 days
128 workers have stayed in Africa, during 83 missions, for a total of 536 days
2 workers have stayed in South and Central America, during 7 missions, for a total of 84 days.

PATTERN OF DISEASES IN NON ITALIAN CITIZENS - EXPERIENCE OF AN INFECTIOUS DISEASES' SPECIALISED HOSPITAL

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In the hospital D. Cotugno situated in Naples, referring centre for the care of infectious diseases in the southern Italy, the examination of reports about the admissions of non Italian citizens during the year 2006, according to the diagnosis related groups (DRGs) related to ICD-9CM 2000 classification show the following pattern of data evaluating the percentage of prevalence of pathologies, the sex, the age group, the origin by macroareas, the stay in hospital and the complexity weight:

- 1) 43% of patients has been affected by complicated or not HIV, 13% affected by liver infectious diseases, 6% affected by neurological infectious diseases, 6% by gastroenteric infectious diseases, 5% by respiratory infectious diseases, 27% by further communicable diseases.
- 2) Male patients are 55% and female patients 45%
- 3) The admitted patients aged 15-44 years are 82%, admissions aged 45-54 are 8%, people aged 55-64 years are 4%, 65-74% are 4% and the remaining 2% are over 75 years and 1-14 years aged.
- 4) The distribution by geographic macrozones of non Italian citizens admitted as patients during the year 2006 is 60% Africans, 27% Europeans, 6% Asian people, 6% South American people, 1% from North-Center America
- 5) The mean length of stay in hospital is 15,50 days
- 6) The mean complexity weight is 1,60 according to the ICD9-CM 2000.

HOSPITALS ON CRUISE SHIPS: ORIGINS, PROGRESS AND PROSPECTS. THE PAST, THE PRESENT AND THE FUTURE

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The equipment, design and location of hospitals on ships have undergone an important degree of progress, but it must be recognized that a fully satisfying solution has not been reached yet.

This paper describes the evolution of ship's hospitals from the last century immigrant sea trips to the today's cruise vacation that are growing at a phenomenal pace.

The aim is to study the solutions to provide the modern big ships cruise of an efficient medical service with regard to the spectrum of illness treated on board and to the new challenge of seamedicine (emerging infectious, pandemic diseases, occupational health, improving medical assistance to seafarers).

Port of Genoa Health Authority's experience about the inspection and counselling activity, on ship's hospitals of one of the major international cruise line, is presented.

Managing/planning the ship's hospital is not the same thing as managing/planning a small clinic on land.

While people living ashore may have all medical services available within a short time, on board the situation is different and sometimes the vessels are at sea for days before they can reach a port. Cruise ships represents at the same time working place and living quarter for the seafarers and there is a growing demand from passengers for medical services providing on board. The occurrence of a health problem may lead to the necessity of disembarking the passenger and hospitalize him.

Furthermore, many people with health problems may consider the absence a fitting healthcare as a serious drawback.

Maintaining a good standard of health conditions on board is therefore a challenging task.

In the past the most important characteristic of a ship's hospital was the number of beds in relation to the number of passengers on board.

Today the most important requirements are: adequate certificate training of personnel, availability of diagnostic services (ECG, ECO, X RAYS) via telecommunication systems, intensive care areas, equipment for dialysis, adequate supply of drugs, essential medical equipment including that one for cardio-pulmonary resuscitation.

A real time connection between the cabins and the hospital associated with a negative-pressure air conditioning system that makes it possible to hospitalize the passengers in their cabins.

The requirements must be changing in relation to the ship's course (time necessary to reach a port, presence of fitting health service on land, availability of helicopter ambulance transfer).

Medicine sea experts, architects and ship owners are strongly committed to providing a safe healthy environment for passengers on board, and their proactive role in promoting appropriate shipboard medical facilities is continuing.

Yet the problem of how to guarantee good quality medical assistance on board is still an important challenge for modern medicine and in the future the mega-ship's hospital become a very complex structure not only a simple sick-bay.

PREVALENCE, RISK FACTORS AND PUBLIC PERCEPTION OF ZONOSIS IN THE IMMIGRANT COMMUNITY IN PIEMONTE (NORTH-WEST ITALY)

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Over the last few years, according to the 2007 report on immigration (IRES Piemonte), there has been a remarkable and continuous increase of immigrants in Piemonte, as in the rest of Italy. By January 2006, there were some 231.611 foreign citizens living in Piemonte, 53,2% of them from European countries, 32,8% from Africa, 7,5% from America (Central and South America), and the remaining 6,5% from Asia. International public health experts have pointed out that immigrant population may face health disadvantages, possibly due to various reasons (e.g. socio-economic, cultural, and genetic differences) which may negatively influence their health status.

Information on the health status, epidemiologic characteristics and perception of zoonosis risk in immigrants in Piemonte are quite fragmentary and incomplete, especially with reference to the interface human-animal-environment in relation to zoonosis.

In order to contribute improving the present knowledge on the above subjects, a multidisciplinary team composed by veterinarians, epidemiologists, psychologists and physicians from the University of Turin (DPAEE-FVM) and from Piemonte Health Services (ASL 8, ASL 20) has started an epidemiological study aimed to: i. search for any significant differences in zoonosis incidence within immigrant population in Piemonte as compared to the "resident" population; ii. identify

possible risk factors for zoonosis in the study population (immigrant and non-immigrant patients in Piemonte); iii. evaluate the perception of health risks and level of knowledge on zoonoses in immigrants working in livestock production, food and agro-alimentary sectors (mainly from Latin America).

Two different methodologic approaches will be used for the research:

- i. a quantitative case-control study based on clinical histories and dismissal hospital cards to search for evidence of possible association between immigration and occurrence of zoonosis. As not all immigrants would use health facilities and services as the “resident” population, randomly selected group of immigrants will be contacted by key informants and cultural mediators to acquire complementary data;
- ii. a qualitative study through the use of questionnaire/semi-structured interviews to evaluate the perception on health risk factors and the degree of knowledge on zoonosis and on health risk behaviors.

Data and information obtained by the project could be used to implement more effective measures in zoonosis surveillance, control and prevention both at human and animal level. The identification of possible barriers in the access-use of health services within the target population may help to reduce health disadvantages in immigrants, and have a positive impact on the whole community. Finally the research project can be an useful tool to consolidate medical-veterinary collaboration at Regional level, and contribute to improve social development and a better integration between immigrants and the “resident” population.

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THE EXPERIENCE OF A INTERNATIONAL VETERINARY PUBLIC HEALTH NETWORK (SAPUVETNET) AS A EDUCATIONAL TOOL FOR DEVELOP SKILLS IN TRAVEL MEDICINE ISSUES

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SAPUVETNET II is a project co-financed by the EU ALFA programme aiming to support a Veterinary Public Health network constituted by Latinamerican and European Faculties of Veterinary Medicine. This project envisages the use of innovative teaching methods, mainly based on the problem solving approach, development of case studies and common teaching modules on upcoming Veterinary Public Health issues. Such as issues include: food safety in international trade of animals and animal products, environmental health, wildlife zoonoses, animal welfare, and emerging diseases of importance in migration health.

One of the most purposeful material is the methodology based on real case-studies, and particularly the case-studies on epidemics process, which are intend to develop skills on fields where the

students learn how to act as a member of a health team. In first place, the case-study called “fever syndrome in travelers, Iquitos, Perú” was developed to make veterinary students consider the possibility to relate zoonotic diseases in case of illness after travels. It refers specially to a fever syndrome that took place in a group of 4 adults who traveled to Peru in vacations and returned with unspecific symptoms (fever, headache, myalgias, shivering). The methodology let the students be aware of a correct anamnesis, the possible ways of transmission of prevalent infectious diseases present in this region and the properly diagnosis and prevention measures of leptospirosis which was the final diagnosis. The other case-study was referred to a sanitary emergency in humans due to an infection of *Chlamydia psittaci* in birds in an european city. This infectious break-out results in 52 cases and 4 deaths mainly in one neighborhood where there was a botanic garden and a turkey farm. The epidemiological explanation for this emergency was the close interaction between humans and birds not only for domestic use (ornithology activities) but also for commercial uses (turkey farm). The source of infection was a tropical bird (Guacamayo) acquired by the owner of the turkey farm in one of his tourism travel. This didactic exercise exemplifies how the students should be prepared and should know how to handle several sources of infection and routes of transmission in both human and animal populations.

All the didactic material created by this network point out the potential role of veterinarians in public health matters such as migration and health and import-exportation activities. It also should be a good example of multidisciplinary educational strategies as potential tool for develop skills in people who deal with Travel Medicine issues (see the case-studies at: [HYPERLINK](http://www.sapuvetnet.org/Esp_PROC.htm)

“http://www.sapuvetnet.org/Esp_PROC.htm”

http://www.sapuvetnet.org/Esp_PROC.htm).

ALARMING ASPECTS IN STUDYING THE HIGH-RISK HPV GENITAL INFECTION

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Objective

Significant differences in human papillomavirus (HPV) epidemiology in UE and Romania as well in the last decades have been reported.

Design & Method

In the research “Diagnostic Markers and Management of Human Papillomavirus Cervical Infections” established by The Program of Excellency in Research of Romanian Ministry of Education and Research, authors present partial results regarding the prevalence of HR-HPV (high-risk HPV infection). 91 women had cervical specimens collected for cytological evaluation along with a clinic and colposcopic exam. Specimens for HPV testing were taken from cervix and the presence of HPV DNA was detected with the Hybrid Capture II after transporting in “UTM-RT” recipients.

Results

Typing of HPV DNA was performed in women from southern Romania, in which 79 presented cervical lesions (cervicitis, condylomas, CIN(cervical intraepitelial neoplasia) or cancers), and 12 normal cervix. A one-HPV testing detected 67,03% positive rate of HPV infection, in which nine high-risk HPV genotypes was found in 70,49% of these cases; also, in the positive group, 32,56% presented associations of 2-3-4 high-risk HPV; 52,77% of high-risk HPV cases were found with cervical CIN or carcinoma; the number of HPV16 and 18 represented only 46,6% of the total high-risk HPV detected genotypes. 36,66% of HPV negative cases showed condylomas, CIN or cancer.

Conclusions

The one-testing for HPV infection must be completed with retesting and classical cervical investigations. We have noted the ascending incidence of single or associated high-risk HPV infections, in which the majority presented cervical CIN or carcinoma. Considering that HPV16 and 18 represented less than half of the infections cases with high-oncogenic risk HPV, it is imperative to adapt and upgrade the prophylactic vaccine spectrum.

SOME PROBLEMS OF SEA CRUISES AND ROLE OF MARITIME MEDICINE IN THEIR DECISION- UKRAINIAN EXPERIENCE

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To intensify and increase powers of maritime complex is one of the prioritized directions in the development and formation of Ukraine as independent state. Its part dealing with sea trips is not of the least importance. Although during the first years of independence the state has practically lost its control over maritime complex condition and especially its transport part. Shipping companies, previously highly profitable, turned into formal structures without industrial remedies. Safety of navigation has become worse as well as the training of highly skilled qualified seafarers. Under such conditions seafarers of merchant marine fleet (more than 150,000 people) began to integrate into international marine labour markets. Seafarers get fixed up in a job on the ships with suitable flags either independently or via crewing companies. Competitiveness of Ukrainian labour force is determined by the high level of their professional skills and low level of social requirements that resulted in salary lower than those for the seafarers of developed countries at high labour intensity and tension, without social guarantees and safety. Under such conditions physical, and especially psycho emotional loads increase and it leads to psychogenic disturbances, nervous-and psychic diseases, deviant behavior, alcoholism, suicides. These medical problems has to solve Ukrainian research Institute for Medicine of Transport, the only institution of such a type in this country. Medical provision of seafarers besides medical fitness and periodical examinations, should include working out and adoption methods of prophylaxis of drug abuse, alcoholism, tobacco-smoking, malaria and implementation of vaccination (yellow fever, diphtheria, etc.). Testing of seafarers' for HIV/AIDS presence is not obligatory in Ukraine now.

Conclusion

All the uncontrolled processes mentioned above require acceptance of urgent measures at medical prophylaxis, examinations and medical professional selection of numerous quality taking part in fulfillment of sea voyages.

EPISOUTH NETWORK FOR COMMUNICABLE DISEASE CONTROL IN SOUTHERN EUROPE AND MEDITERRANEAN COUNTRIES

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France; 5 National Center of Infectious and Parasitic Diseases (NCIPD), Sofia, Bulgaria; 6 Hellenic Center for Diseases Control and Prevention (HCDCP), Athens, Greece

Background and Aim. The Mediterranean countries share a common ecosystem, epidemiological characteristics and public health problems. In 2005, for the “Year of the Mediterranean”, several European Public Health Institutes proposed a framework of collaboration on epidemiological issues for strengthening communicable diseases surveillance and control, communication and training in the Mediterranean Basin. This initiative led to the establishment by the end of 2006 of the EpiSouth Project, co-funded by EU (DG SANCO) and supported by Italian MOH (EpiMed Project).

Methods

Episouth is composed by 8 WorkPackages (WP), lead by Public Health Institutes. The project is led and coordinated by the main partner (ISS, Italy) in charge of the operational framework (WP1) and data dissemination (WP2). Three vertical WPs, “Cross-border epidemic intelligence-WP6” (InVS, France), “Vaccine Preventable Diseases and migrants-WP7” (NCIPD, Bulgaria) and “Cross-border emerging zoonoses-WP8” (HCDCP, Greece), compose the technical basis. Two horizontal WPs, “Networking-WP4” (Padua, Italy) and “Training-WP5” (ISCIII, Spain), provide tools that help fulfilling the objectives of the vertical WPs. The project is evaluated through a dedicated WP (WP3). All participant Countries jointly collaborate to the project through WP Steering Teams.

Results

Starting as an EU project, Episouth struggled to develop its Mediterranean vocation. From an initial involvement of 5 countries (Italy, Spain, France, Greece and Bulgaria) it includes now partners from 21 countries of South Europe, Balkans, North Africa and Middle-East, and from international organizations (EU, ECDC and WHO). Each country designed national Focal Points for the EpiSouth Network. First outcomes, including a website with a restricted area for the Network, two bulletins, a training module for 50 key epidemiologists, the evaluation of epidemic intelligence national programmes, a survey on vaccine-preventable disease and migrant populations, and a disease listing priorities for emerging zoonoses, are in part or totally already available.

Conclusions

EpiSouth is a unique project covering all sides of the Mediterranean. An effective collaboration will give a clearer picture of the peculiar context in this region and will identify significant gaps in public health. Moreover, network and communication will allow a timely and coordinated response to health threats and to contain the spread of infectious diseases.

HEALTHREATS PROJECT: IMPLEMENTING CRISIS MANAGEMENT IN PUBLIC HEALTH
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The pandemic influenza represents a major public health risk, as stated by the World Health Organization in its 2007 report “A safer future: the global public health security in the 21st century”. In order to effectively face health crisis, and in particular the pandemic scenario, the Public Health Executive Agency of the European Union has supported the project HEALTHREATS, which has as leader the Local Health Authority of Brescia (ASL Brescia, Italy), together with numerous partners from several European countries (Italy, Portugal, Romania, Spain, Slovenia, and UK).

Aim of the project is to identify and define the best managing practises for a pandemic flu, in a efficient integration between the national and the local level. A decision support system will be developed re-engineering the managing procedures to facilitate the decision making process of the crisis managers. An adequate training of the involved personnel will be planned and performed.

Methods

The project is three years long, it started in 2007 and will end in 2010. It is structured in 8 Work Packages, respectively committed to overall coordination, dissemination of results, state of the art review, requirement specification of the system, organizational re-engineering, DSS design and implementation, and personnel training. The DSS functioning will be experimented in Italy, Romania, Slovenia and Spain.

Attended results

At the end of three years, the Healththreats project aims to reach a deep understanding of crisis management in public health regarding the specific scenario of a pandemic flu, analysing the actual reality in Europe, comparing national preparedness with the WHO guidelines, and focusing critical points in managing strategies and organizational patterns of the countries involved. Starting up with the state of the art analysis, the project will be able to improve crisis management capacity, promoting best processes and procedures, providing a specific informatics tool to manage information, and increasing the knowledge of the professionals involved in crisis management.

*The list of Healththreats partners is available at [HYPERLINK](http://www.healththreats.eu/index.html)
“<http://www.healththreats.eu/index.html>” <http://www.healththreats.eu/index.html>

VACCINATION FOR TRAVELING WORKERS IN FOREIGN COUNTRIES RELATED TO DIFFERENT DESTINATION AREAS

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Background

The preventive immunization strategy in the workplace has been innovated with the introduction of the issue of the biological assessment risk related to the workplace and the presence of carriers (man, animals). The DLgs 626/94 - title VIII - links the infectious risk both to the sanitary activities and to other activities and professions.

Methods

The multidisciplinary approach, among medical company services, university institutes, travel clinic, has allowed to predispose immunization protocol schemes for different destination areas. The approach has also kept in mind the numerous pre-travel variables, used for workers that travel and sojourn in foreign countries. The immunization scheme foresees that all the vaccines can be administered in the same session, in the different site, without interference of immune response.

Results

3 vaccination schemes have been individualized in relationship to the areas of destination and combined vaccines have commonly been used.

The first scheme (specific for Sub Saharan Africa), uses: combination epatitis A and epatitis B vaccine, combination tetanus, difteria and polio vaccine, yellow fever vaccine, meningococcal

vaccine, pneumococcal polysaccharide vaccine, typhoid vaccine, rabies vaccine(pre-exposure), oral cholera vaccine.

The second scheme (for China, Indian sub-continent, South-East Asia), uses: combination hepatitis A and hepatitis B vaccine, combination tetanus, diphtheria and polio vaccine, meningococcal vaccine, pneumococcal polysaccharide vaccine, typhoid vaccine, influenza vaccine, Japanese encephalitis vaccine, rabies vaccine (pre –exposure), oral cholera vaccine.

The third scheme (for South and Central America, Caribbean Area), uses: combination hepatitis A and hepatitis B vaccine, combination tetanus, diphtheria and polio vaccine, meningococcal vaccine, typhoid vaccine, pneumococcal polysaccharide vaccine, yellow fever vaccine (Amazonia area), oral cholera vaccine, rabies vaccine (pre –exposure).

Conclusion

The immunization program represents a good tool of primary prevention to the evaluation of the infectious risk and it is integral part of the program of health surveillance. These vaccination schemes can also be effected in accelerated schedule and can also protect the “last minute” work-travellers.

IMPORTED MALARIA IN KUWAIT (1985 - 2006)

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Message: Objective To document status of malaria infection and efficacy of preventive measures on the epidemiological profile of imported malaria cases in Kuwait during 1985-2000.

Methods

The study included screening of two groups of individuals for malaria infection by microscopy; i, all migrant workers from malaria endemic countries on their first entry to Kuwait, ii, all suspected malaria cases already residing in the country. The study period was between 1985 to 1990; pre war (1985-1990), post war (1992-1997) and proactive preventive (2000-2006) periods

Results

The annual incidence of malaria cases detected during pre war, post war and proactive preventive period ranged between 465-1229, 746-1379, and 343-399 respectively. *P. vivax* infection was detected in 71% and *P. falciparum* in 27% of the cases. The number of malaria cases detected increased to >1300 cases after the war during 1992-1993. However, the number of malaria cases dropped significantly to less than 400 during 2000-2006 ($p < 0.05$). The majority (84%) of malarial infections detected was acquired in Asian countries; India 39%, Pakistan 20%, other Asian countries (Sri Lanka, Bangladesh, Nepal, Afghanistan) 21%. Less than 1% of the cases were seen among Kuwaitis returning from malaria endemic countries. The number of malaria cases among the newly arrived immigrants decreased significantly from 32%-41% to 15%-20% during 2000-2006. The majority (>80%) of malaria patients were young male adults between 23-40 years of age. The data on drug resistance was not well defined due to limited testing.

Conclusion

This study suggests that the proactive preventive program to screen all intending immigrants for malaria infection in their home countries significantly reduced the numbers of imported infections

to <400 cases per year, a drop by 45.2%. In addition, it also identified a group of settled immigrants at high risk for malaria infection during their visit to home countries. This group needs to be targeted for prevention strategies.

Key Words

Imported malaria, prevention, malaria screening Kuwait University provided the financial support for this study (Research Grant MI 109 & 03/03)

EVALUATION OF PREVALENCE OF VANCOMYCIN RESISTANT STAPHYLOCOCCI IN KASHAN HOSPITALS UNIVERSITY DURING 2004-2005 - IRAN

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Glycopeptide such as vancomycin are frequency the antibiotic of choice for the treatment of infections caused by Methicillin Resistant *S. aureus* (MRSA) for the last 7 years, incidence of Vancomycin resistant *S. aureus* (VRSA) has been increasing in various parts of the world. This study was carried out to find out the prevalence of VRSA in The Kashan hospitals university during (2004-2005).

Material and Method

A descriptive study was performed over 86 positive culture of hospitalized patients, clinical isolates were from a variety of body sites (blood, urine, wound discharge, trachea, abscess,) that were referred to Central Laboratory of Kashan hospitals during (2004-2005), antibiotic resistance pattern was determined by disc diffusion method (Kirby- Bauer), results and demographic characteristic were presented by descriptive analysis. Results: Research showed rate of frequency of VRSA was 40(46.5%), from 86 positive culture 13(29%) belong to blood, 34(74%) to urine, 13(31%) to trachea, 19(38%) to wounds discharge, 1(2.2%) to synovial fluids, 2(4.7%) to CSF, 4(10.9%) to abscess.

Antibiotic resistance to different antibiotics were determined: 84% to cloxacillin, 70% to Ciprofloxacin and Cephalexin, 59% to Cephalothin, 62% to Cefazolin.

Conclusion

Resistance pattern of staphylococcus particularly *S. aureus* to various antibiotics especially Vancomycin is to ward in creasing trend. This is better that the procedure of treatment against infections of VRSA is designed in according to results of susceptibility test in Microbiology Laboratory with National Committee for Clinical Laboratory Standard (NCCLS)

Keywords

Staphylococci, Vancomycin, Resistant

PROLONGED PROPHYLACTIC USE OF COTRIMOXAZOL IN HIV PATIENTS IS ASSOCIATED WITH REVERSIBLE RESISTANCE TO TRIMETOPRIM/SULFAMETOXAZOLE

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Cotrimoxazole - trimetoprim/sulfamethoxazole (TMP/SMX) is widely used and recommended for infection prophylaxis in HIV positive individuals with CD4 < 200 and without opportunistic infection, because it significantly reduces infection related mortality and morbidity (1). However TMP/SMX resistance is of concern, especially if approximately 10 million patients in sub-Saharan Africa and about 2 millions in Southeast Asia use 3 times weekly TMP/SMX.

We have prospectively analysed TMP/SMX resistance in Enterobacteriaceae isolates from screening in 93 children with HIV and CD4 < 200 in Cambodia and 22 in Kenya within 2003-2007 (4 years). 102 isolates of Enterobacteriaceae were obtained for surveillance contents from HIV positive children (86 from Cambodia and 16 from Kenya), 22 (21,6%) *E. coli* isolates, 20 (19,6%) *Proteus* spp., 16 (15,7 %) *Enterobacter* spp. and 44 (43,1%) *Klebsiella* spp.. Seventy four (72,6 %) isolates were TMP/SMX susceptible and 28 (27,4%) TMP/SMX resistant.

Assessing dynamics of TMP/SMX resistance, baseline resistance before initiation of HAART was high as well as 3 to 6 months after initiation of HAART (100 % were TMP/SMX resistant).

However after 9-36 months the resistance rates dropped from 100 % to 20 % and 0 %, and after 48 months the resistance rates were about 20 %. Therefore, TMP/SMX resistance related to TMP/SMX use is reversible and/or is not related to duration of TMP/SMX prophylaxis.

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OVERVIEW OF 7583 CASES OF TROPICAL INFECTIOUS DISEASES IN RURAL AREA OF NORTHWESTERN HAITI

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Introduction

Majority of neuroinfections in the Caribbean is due to bacterial (*Str. pneumoniae*, *N. meningitidis*) or fungal meningitis (*C. neoformans*), especially in patients with AIDS. The prevalence of HIV infection in Haiti is about 6% in Port-au-Prince and about 3-4% in the northwestern area, therefore cryptococcosis and pneumococcal meningitis, typical for AIDS patients is not exceptional. There is no routine vaccination against *H. influenzae* type B in Haitian children or against *Str. pneumoniae* in children or elderly. Therefore, wide spectrum of pathogens and neuroinfections in routine daily general practice can be expected.

Methods

Spectrum and prevalence of neuroinfections and other tropical infectious diseases in rural area of northwestern Haiti with a population of approximately 40.000 inhabitants was analyzed. Within 2007, meningococcal meningitis, other bacterial (pneumococcal) meningitis and CNS cryptococcosis has been observed as most frequent causes of neurological disorders.

Charts of 5429 patients from routine general practice from January to July 2007 (7 months) were evaluated for spectrum, therapy and outcome of all infectious diseases and especially for neuroinfections (meningitis, encephalitis, neurological manifestations of AIDS, syphilis and tropical diseases).

Results and discussion

Among 7583 admissions, 2744 were infectious diseases (36%) and of them, only 10 (0.1%) were neuroinfections (meningitis). Major clinical presentation was: epileptic seizures, vomiting and fever. All 10 patients survived, 2 cases were caused by *N. meningitis*, others by *H. influenzae*. This low incidence of neuroinfections and absence of central cryptococcosis is probably due to less HIV - positive patients that someone may expect in Haiti. Among 7583 patients, 583 were tested for HIV. Only 15 of them were HIV - positives and 5 patients had clinical signs of AIDS. However, none of them had neurological signs of "late HIV infection" despite fact that none were on antiretroviral therapy. Therefore, in countries with higher prevalence of HIV, majority of cases live in larger cities. The prevalence in rural areas is fortunately minimal and AIDS related neuroinfections are exceptional as well.

ILLNESS AND INJURY TO TRAVELERS ON A RESEARCH EXPEDITION TO MONGOLIA

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Background

Expeditions provide an opportunity for travelers to undertake specialized travel to more adventurous and extreme destinations in the relative security of an expeditionary group with medical cover usually provided by an expedition physician. Little is known about the illnesses and injuries occurring on expeditions to Mongolia. This present study was designed to investigate the prevalence of health problems suffered by travelers on a research expedition to Mongolia.

Methods

In June 2005, the expedition physician diagnosed and recorded all illnesses and injuries amongst 16 travellers on a research expedition to Mongolia. Information recorded included age, sex, whether local or not, number of days into the expedition, the nature of the presenting illness, whether an accident was involved, the assessment of the condition and the treatment employed. The period of the expedition was for 22 days and travel was by land transport using local vehicles.

Results: There were 50 consultations with 53 health presentations were reported and recorded amongst the travelers. Males and females presented in almost equal proportions with the average age of expeditioners presenting being 49 years (SD=16). The types of primary illness diagnosed were largely those related to the following systems: superficial trauma (25%), dermatological (23%), gastrointestinal (19%), neurological (17%), psychological (6%), and other problems (11%). Of the superficial trauma, most of these were lacerations (85%). Presentations were highest on day 4 and then tended to reduce towards the end of the expedition. Females were significantly more likely to present later in the expedition ($P=0.013$). One quarter of presentations (25%) were handled conservatively with 28% requiring topical treatments, 9% requiring antiemetics and 4% requiring anti-inflammatories. There were no deaths or other major incidents requiring emergency evacuation or hospitalization; although nearly half of presentations reported involved accidents (49%).

Conclusions

On this research expedition to Mongolia, the health problems encountered were largely similar to those reported for other expeditions. The most common problems included trauma as well as dermatological, gastrointestinal and neurological conditions. The inclusion of an expedition physician on this research expedition increased the independence of the travelers on this journey to

remote areas of Mongolia, where health services were scarce or non-existent. This study underlined the importance of expedition teams being prepared to manage common problems, such as trauma.

TRAVEL HEALTH ADVISORY GROUP: ACTIVITIES OF A JOINT TRAVEL INDUSTRY AND TRAVEL MEDICINE GROUP PROMOTING HEALTHY TRAVEL

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Background

The Australian Travel Health Advisory Group (THAG), established in 1997, is a joint initiative between the travel industry and travel medicine professionals that aims to promote healthy travel amongst travellers. THAG seeks to promote cooperation in improving the health of travellers between the travel industry and travel medicine professionals and to raise awareness of the importance of travel health to the Australian public.

Methods

The poster describes the major activities of THAG which include: networking and exchange among groups interested in travel health; commissioning travel health research; promotion of travel health awareness working through travel service providers; public relations activities to increase awareness of travel health risks and the importance of seeking pre-travel health advice and vaccination; and the development of an increasingly popular website to provide travel health information to Australian travelers.

Results

A travel health bookmark developed by THAG has been distributed extensively through travel agents, Qantas Holidays and Youth Hostels Association. Travel health surveys conducted under the auspices by THAG have been presented at the International Society of Travel Medicine (ISTM) conferences and articles focused on hepatitis A and hepatitis B published in the Journal of Travel Medicine. The www.welltogo.com.au website was developed in 2004; expansion of the content took place in 2005, and in 2007 the interactive World Map was launched (providing health warnings for all regions). The use of the welltogo website has increased rapidly with more than 42,000 visits per year. The Australian Government travel advisory site has a link to welltogo. THAG participated in the 2007 GlaxoSmithKline (GSK) Australian Olympic Committee immunisation campaign, where the Shadow Olympic Team was vaccinated in preparation for Beijing. THAG profiled the welltogo website and provided a spokesperson and research statistics for the campaign. THAG's professional organisation profile was published in the Travel Medicine and Infectious Disease publication in 2007.

Conclusions

A partnership approach between the travel industry and travel medicine professionals can effectively support a range of activities to promote the health of travelers. The welltogo website is now making an important contribution in providing information to the Australian public on travel health.

Interests to declare

The activities of the Travel Health Advisory Group are funded by GlaxoSmithkline Australia.

Travel Health Advisory Group (THAG): Member organizations are the Anton Breinl Centre, James Cook University (Professor Peter Leggat), Australian Federation of Travel Agents (Ms Marie Allom), Jetset Travelworld Group, MASTA-Minding Your Health Abroad (Dr Bernard Hudson), Royal Australian College of General Practitioners (Professor Nicholas Zwar), Qantas Airways (Ms Bronwyn Claxton and Dr Ian Cheng), VERO Insurance (Mr John Hawkins), Youth Hostels Association (Mr Ben Fryer), and Faculty of Travel Medicine, Australasian College of Tropical Medicine (Dr Tony Gheradin).

TRAVELLERS' ADHESION TO VACCINATIONS: ANALYSIS OF AN EXPERIENCE MOLINO N.1, COVACCI V.1, FUSILLO C.1, DI MARZIO L.1, SGRICIA S.1.

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Introduction

Although the lacking in adhesion of travel vaccinations is well stressed in literature, at present little information are available about the factors involved in travellers' decisions to accept or reject vaccine recommendations. The aim of our study is to investigate the factors involved in travellers' decisions to be vaccinated after pre-travel consultation in our Traveller's Centre.

Methods

204 travellers have been referred for pre-travel consultation at the ASL RMF Traveller's Centre in 2006/2007 and all of them have been enrolled in our study. We evaluated the vaccine uptake (n° vaccinations administered/ n° vaccinations prescribed) for each of 7 different kinds of vaccine : anti-tetanus-diphtheria, measles, hepatitis A, hepatitis B, meningitis, poliomyelitis, typhus. The vaccines have been grouped, according to the standard classification for travel vaccinations, in "recommended" (typhus, hepatitis A, tetravalent meningococcal meningitis) and "routine" vaccinations (tetanus-diphtheria, measles, hepatitis B, poliomyelitis). Pearson's χ^2 test for categorical variables ($\alpha=0.05$) has been used to identify an association between vaccine uptake and factors potentially affecting the decision to be vaccinated: destination, length of time and purpose of travel, accommodation, sex, age, time before departure, number of suggested vaccinations. Odd ratio has been used to calculate this association strength. A multiple logistic regression model has been performed if more variables resulted to be positively associated to vaccine uptake.

Results

52.4% of the enrolled travellers were male and the mean age was 34 years. 43,1% of travellers were directed to sub-Saharan Africa and 15,6 % to the Southeast Asia. The main reason for travel was tourism (74,7%) followed by business (20,1%); length of time of travel was <15 days for 65,1% of cases; resort was the more frequently chosen accommodation (29,4% of people). 45,1% of our population looked for medical information earlier than 30 days before the departure and 15,2% less than 15 days before.

As regards travellers' adhesion to suggested vaccinations, 43,1% accepted all the prescribed vaccines whereas 22,6% refused to be vaccinated. A deep analysis highlights that all the "routine" vaccinations have been rejected by 35,5% of subjects while the 26,4% did not submit to all the "recommended" vaccinations.

Vaccination uptake was higher for anti-hepatitis A (71,1%) and tetanus-diphtheria vaccination (68,9%), whereas it was relatively low for measles (45,8%). Anti-hepatitis B vaccination (adjusted O.R. 3.85 CI 1.29-11.48), tetravalent meningococcal vaccination (adjusted O.R. 6.5 CI 1.6-25.5) and measles vaccination (O.R. 7.8 CI 1.3-46.9) were more frequently accepted by those to whom were prescribed less than 3 different type of vaccinations, while the travellers directed to resorts, in

comparison to the others, were less interested in being vaccinated against hepatitis A (adjusted O.R. 0.37 CI 0.15-0.87).

Conclusions

Above all, our newly established Traveller's Centre deals with young people travelling for tourism for brief periods of time. After correction for covariates, the main factor affecting the decision to be vaccinated is likely to be the number of suggested vaccinations. Maybe this decision is affected by the negative impact of multiple injections. Moreover travellers must pay to be vaccinated. The "cost factor" could induce traveller to refuse to be vaccinated against diseases perceived as less important or easily controlled by behaviour. These results will be used to improve our approach in order to increase travellers' adhesion to vaccinations.

LATENT TUBERCULOSIS INFECTION SURVEILLANCE IN A SAMPLE OF HOMELESS PEOPLE IN ROME

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From 1999 to 2005, 31,000 Tuberculosis (TB) cases were notified in Italy, 32% of them were foreigners.

Against a decrease of TB cases observed in Italian people (-32%), an increase (+88%) was observed in foreigners.

The increased number of immigrants from countries with high TB incidence, together with other causes (HIV epidemic, globalisation, increase of social hardship factors and homelessness) can explain new epidemiological trends.

The purpose of study is to identify LTBI (Latent Tuberculosis infections) cases among a sample of homeless (immigrants and Italian people) in Rome and to describe the percentages of positive Mantoux Test subjects and native countries.

Methods

During November 2006-November 2007 the subjects were recruited in the homeless' refuges, according to specific inclusion criteria of the sample. The Mantoux test was used to evaluate the infection prevalence according to 1999 American Thoracic Society Standard; for positive subjects (diameter > 10mm), sputum was collected and the chest X-ray was performed.

Results

Among 288 subjects recruited, 259 have returned for the evaluation of the cutireaction. The percentages of the native country of these 259 study participants are: 33.2% Italy; 32% Romania; 8.5% Afghanistan; 5.4% Eritrea; 1.9% Ukraine and Poland; 1.5% Guinea and Côte d'Ivoire; 0.8% Brazil, Bulgaria, Egypt, Ethiopia, Morocco, Russia, Spain, Sudan and Turkey; 0.4% Albania, Algeria, Saudi Arabia, Bosnia, Cyprus, Philippines, France, Hawaii, India, Iraq, Jordan, Kenya, Kosovo, Nigeria, Peru, Somalia, Togo and Hungary.

The subjects with positive reaction were 115 (44.4 %); 6 participants had an uncertain result. The percentages of positive subjects and countries of origin are: 17.76% Romania; 11.97% Italy; 3.47% Afghanistan; 2.32% Eritrea; 1.16% Côte d'Ivoire and Ukraine; 0.77% Egypt; 0.39% Albania; Algeria, Bulgaria, Ethiopia, France, Guinea, India, Jordan, Morocco, Nigeria, Somalia, Spain, Togo, Turkey and Hungary.

All these patients were directed to a specialized centre for clinical evaluation and appropriate therapy.

Conclusions

These results highlight of epidemiological LTBI surveillance both for Italians and foreigners in social hardship conditions. It appears of great importance for Public Health to plan and perform specific models for risk evaluation and active management both of LTBI and of TB in high risk population, with a strong integration between public and private health and social services.

A GLOBAL RISK COMES FROM THE WEB: CYBERPHARMACIES AND CONSUMER HEALTH SAFEGUARDS

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Background

As e-commerce and online pharmacies arose, the potential impact of the Internet on the world of health shifted from merely the spread of information to a real opportunity to acquire health services - especially drugs - directly. The phenomenon has a worldwide dimension, due to the nature of the web that has the potential to create a “global village” with virtually no barriers.

The World Health Organization (WHO) faces this issue in the context of counterfeit medicines, which are defined “a global public health crisis”, stating that “medicines purchased over the Internet from sites that conceal their physical address are counterfeit in over 50% of cases” (WHO Fact sheet n° 275, revised 14 November 2006, available at www.who.int).

Aim of the study was to investigate the availability of prescription drugs in online pharmacies, focusing on the level of consumer safety.

Methods

A survey of website offering prescription-only drugs was performed in August 2007 using the Google search engine. The online pharmacies found were analysed using the content analysis method.

Results

The research led to an analysis of 118 online pharmacies. Only 51 (43.2%) of them stated their precise location, and a comparison of the location with the country of registration of the website domain showed that the two areas were the same in 54.9% of cases. Ninety-six (81.4%) online pharmacies did not require a medical prescription from the customer’s physician; of these, 30 (31.2%) did not ask for any kind of medical information and 66 (68.8%) asked for a medical questionnaire to be filled in.

A wide range of drugs with a high risk of being inappropriate and/or dangerous was offered. As regards marketing strategies, the selling arguments were about price issues, privacy, the possibility of avoiding the doctor, drugs and service quality, and legal reassurances.

Conclusions

These findings show a worrying lack of consumer health safeguards on the part of online pharmacies, leading to complex issues in terms of patient-doctor relationship, consumer empowerment, drug quality, regulation, and national policy.

Globalization, Travel Medicine And The Emergence Of Zoonotic Antibiotic Resistant Microorganisms; Role Of Veterinary Public Health And The Sapuvetnet Project^o Activities
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One of the most important problems for Health Services throughout the world is linked to the globalization process which facilitates travelling and movements of persons and animals around the world in a very short period. Travel time is often shorter than the incubation period of the majority of infectious diseases, thus contributing to the emergence of diseases in places where they were never detected before. About 75% of the new human diseases are zoonoses, and many micro-organisms responsible for these diseases are resistant to antibiotics, which are used both in animal health and human medicine. A recent survey by The World Organization for Animal Health (OIE) determined that 64% of the participating countries have antibiotic resistant bacteria in humans and animals with the highest proportion of resistant bacteria being Salmonella, Campylobacter, Staphylococcus spp. or E. coli. Some of these microorganisms are also present in animal populations in which antibiotic treatments have been systematically used, not only for disease treatment, but also as growth promoter (forbidden since 2006). This contributes to the development of resistant bacteria strains as well as increasing the risk of resistance transmission to humans. The increased prevalence of antibiotic resistant micro-organisms has been recently defined as a worldwide health challenge not only for Human Medicine, as stated by the WHO (Communicable Diseases Surveillance System), but also for Animal Health, as stated by the OIE. Taking into account the above issues and considering the importance of inter-sectoral collaboration (veterinary and human medicine), an international network –the SAPUVETNET project- involved in training and research on Veterinary Public Health (VPH) has included the topic of emerging zoonotic antibiotic resistance in its research and training objectives. The network developed –amongst other actions- teaching material such as case studies on the development of emerging diseases associated with resistant micro-organisms. It has also carried out some activities to promote awareness on the careful use of antibiotics in animals. Moreover, an international electronic conference “Local practices of animal production and health with special reference to the use of veterinary drugs and development of resistance to antibiotics: implications for Veterinary Public Health” was also organised in 2007.

Over 40 professionals and students (veterinary and human medicine) took part in the conference, and participants from different countries and continents (Canada, Latin America, Africa and Europe) shared their experiences, voicing their points of view, making comments and presenting talks (HYPERLINK “http://www.sapuvetnet.org/Eng_CONF.htm” http://www.sapuvetnet.org/Eng_CONF.htm). The

issues discussed during this virtual conference and the results of studies carried out in different countries suggest that resistance to antibiotics in Animal Health is a real problem that directly involves VPH due to animal-human interaction and movement which can facilitate the spreading of resistance around the world. In order to reduce these risks, surveillance of resistant micro-organisms in humans and animals, the prudent use of antibiotics and continuous health education are necessary tools to prevent the spread of resistant micro-organisms.

ILLNESS AND INJURY TO TRAVELLERS ON A PREMIUM EXPEDITION TO ICELAND

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Background

Commercial expeditions provide an opportunity for travellers to undertake various specialised travel to more adventurous and extreme destinations in the relative security of an expeditionary group with medical cover provided by an expedition physician. Little is known about the illnesses and injuries occurring on premium expeditions. This present study was designed to investigate the prevalence of health problems suffered by travellers on a premium expedition to Iceland and the Arctic Circle.

Methods

In 2004, the expedition physician diagnosed and recorded all illnesses and injuries amongst 45 travellers on a premium expedition to Iceland. Information recorded included age, sex, number of days into the expedition, the nature of the presenting illness, the assessment of the condition and the treatment employed. The period of the expedition was for 18 days and travel was by chartered aircraft, cruise ship and bus.

Results

Thirty-one (69%) travellers sought medical advice at least once for a total of 54 consultations (mean=1.7). Fifty-six health presentations were reported and recorded amongst the travellers. Females presented on 70% occasions with the average age of expeditioners presenting being 62 years. The types of primary illness diagnosed were largely those related to the following systems: respiratory 34%, gastrointestinal 30%, dermatological 14%, and musculoskeletal 9%, and other problems 13%. Of the gastrointestinal problems, seasickness was the most common single complaint on 27% of occasions, occurring between day 4 and 9, the cruise phase of the journey. In total, the cruise phase accounted for 43 medical presentations with the pre-cruise phase accounting for 11% of them and the post-cruise phase accounting for the remaining 46%. Presentations were highest on day 5. About one third of presentations (34%) were handled conservatively with 23% requiring antiemetics and 6% requiring antibiotics. There were no deaths or other major incidents requiring emergency evacuation or hospitalisation; although 6 accidents were reported. Interestingly, accidents were significantly more likely to occur earlier in the expedition (t-test; $t=2.828$, $df=54$, $p=0.007$).

Conclusions

On this premium expedition, the health problems encountered were largely similar to those reported for other expeditions. The most common problems included respiratory, gastrointestinal, dermatological conditions and musculoskeletal conditions in descending order. As well as being part of the service provided to travellers, the inclusion of an expedition physician on this premium

expedition increased the independence of the travellers on this journey yet decreased the reliance on local health services, a source which is often scarce or absent on more remote location expeditions.

IMPORTED CASES OF MALARIA IN CONSTANTZA, ROMANIA

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Introduction

Malaria is the world's most important tropical parasitic disease and kills more people than any other communicable disease except tuberculosis. The economic and social effects of malaria are massive. The spread of this disease is expected to double with increased drug resistance seen in *Plasmodium* spp. and increased insecticide resistance of anopheline mosquitoes. Each year an estimated 500-650 million people worldwide are infected with malaria, 1 - 2.7 million deaths per year occur among infected individuals and more than 90% of all malaria cases are in sub-Saharan Africa, most of them young children. In Romania malaria has been eradicated between 1949-1961. Now, Romania is in a period of maintenance of eradication. In each year, few cases are registered. All the cases in the last 15 years have been imported from endemic areas.

Objective

This is a retrospective study of imported cases of malaria in Constantza in the last 17 years. We evaluate their epidemiological, clinical and therapeutic aspects.

Material and Methods

Retrospective study on 162 patients hospitalized in our hospital during the years 1990-2007. The diagnosis was established by blood smears (thick smear and thin smear).

Results

Of the 162 patients, 160 were male and only 2 female. Our patients were Romanian and foreign sailors and also other travelers. The etiologic agents were: *Plasmodium falciparum* in 119 cases (74%), *Plasmodium vivax* in 8 cases (5%), *Plasmodium malariae* in 4 cases (2%), in 31 cases etiology was uncertain (19%). Most of the patients traveled in Africa (75) and some of them traveled in South America (44) and Asia (43). Between all the cases, 51 cases represented acute malaria, 51 cases represented relapses after acute malaria and 60 cases represented controls after acute malaria. In 36 cases we noticed the following complications: severe anemia (16 cases), thrombocytopenia (6 cases), renal failure (5 cases), cerebral malaria (5 cases), disseminated intravascular coagulation (1 patient) and sepsis (2 patients). One patient died due to septic shock.

Conclusions

The inadequate prophylaxis used for tourists and sailors who traveled in endemic areas was the principal cause of malaria in Romania. The increase in malaria cases is due to increased travel and work to endemic regions and a decreased use of effective antimalarial chemoprophylaxis. Malaria infections can be fatal if not diagnosed and treated promptly. It is necessary to improve the chemoprophylaxis of malaria for the Romanian citizens who travel or work to endemic regions. Greater efforts must be made by the Ministry of Health to ensure that the population at risk has easy access to appropriate and affordable antimalarial drugs.

TICKS AND TICK-BORNE ZOOSES (TBZ) IN THE TROPICS AND SUB-TROPICS: THE USE OF AN INTEGRATED DATA BASE ON TBZ FOR TRAVEL MEDICINE

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A data-base (MS Access®) on Ticks and Tick-borne zoonoses (TBZ) which occur in the (sub-tropical regions of Latin America, Africa and Asia has been developed within the activities of the ICTTD-3 project (Integrated Consortium on Ticks & Tick-borne Diseases). The project is financed by the European Union (EU-INCO), and it is aimed to support a research program on tick-borne diseases jointly executed by a consortium of 43 institutions in 29 countries (<http://www.icttd.nl/>). ICTTD-3 envisages to enhance international collaboration in training, research and control of tick-borne diseases to promote inter-sectoral cooperation (amongst biologists, veterinarians and medical doctors) and to exchange information/data amongst different institutions, networks and projects worldwide.

The TBZ data base structure includes 3 forms: (1) operator, (2) source publication/record and (3) tick/pathogen/disease case. Data about disease/pathogen are collected according to the following categories:

- 1) vector: tick names (genus and species) from the World list of valid tick names: Horak I.G. et al.;
- 2) disease/pathogen: names/abbreviations taken from ICTVdB-Universal Virus Database ver.4; List of Prokaryotic Names with Standing in Nomenclature;
- 3) detection method: isolation, PCR, microscopy, serology, clinical cases (incl. data on prevalence/incidence, according to type of study: epidemiological survey, clinical case reporting);
- 4) report refers to: human, animal, tick (larva/nymph/adult; on-host, free-living stage);
- 5) report date (month/year),
- 6) report location: country, town, village, ect .
- 7) imported case: location/country where tick and/or TBZ was contracted;
- 8) geographical coordinates: datum WGS84 from atlas maps, web gazetteers

Data/records are being collected through an extensive bibliographic search of scientific papers, reports, conference proceedings and other publications on TBZ in the (sub-)tropics; unpublished (“hidden”) material, reports from Ministries of Health, Dept. Veterinary Services, and through contacts with relevant persons in countries/regions of interest. Data collection is still in progress, however principal results expected include the creation of an extensive data base to be merged in a cluster of larger integrated databases for ticks, hosts and pathogens (i.e. ICTTD-3 GIS & THPbase), and linked to remotely sensed eco-climatic data to create predictive maps for geographical distribution of ticks and diseases –including TBZ- in the (sub)-tropics. Data analysis will be carried out with free software (GRASS GIS, Quantum GIS, R data analysis language, integrating human, climate, vegetation data freely available from the web). The authors believe that the TBZ data base could be an useful tools for an integrated collection of data/records on imported cases of TBZ at international level, and it could also contribute to enhance medical-veterinarian collaboration.

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STUDY ON A NEW METHOD FOR VIRUSES RECOVERY IN FOOD SAMPLES.

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Foodborne infections represent an outstanding public health problem; according to CDC viral agents are involved in up to 23 millions of gastroenteritis cases.

Norwalk virus is the prototype of the genus Norwalk-like virus (NLV) in the Caliciviridae family, which includes a large number of genetically related strains that together represent the most important cause of gastroenteritis outbreaks worldwide (1–2). NLV accounts for up to 96% of outbreaks of nonbacterial gastroenteritis in the United States (3) and has been implicated in 43% of all foodborne outbreaks in England, 67% in Sweden, and 80% in the Netherlands

More sensitive techniques are required to detect viruses in food samples; many different methods have been described for enteric virus detection, but none has been validated.

The aim of this work was to develop a rapid, specific, sensitive and reliable analytical procedure to detect enteric viruses in different types of food and particularly in vegetables and fruits.

Lettuce and strawberries samples (50g) were artificially contaminated with Coxsackie B5 virus and Feline calicivirus (F9 strain) by immersion in physiological solution added with viral suspension at known titre. After 2 hours of contact time, the samples were eluted with a glycine and 3% beef extract solution. Following step was the concentration of samples obtained by elution; in a first set of experimental tests it was carried out using PEG 8000 and then it seemed interesting to compare this concentration method with ultrafiltration (carried out using Millipore 100,000 Dalton filter units). In fact, because of the very low grade of viral contamination in food, this step represents a critical point for virus recovery.

All solutions employed in experimental tests (initial contamination solution, eluate, final concentrate) were submitted to viral titration in order to determine the recovery rate in each protocol stage.

The recovery percentages obtained for both viruses were decidedly low, ranging from 1,64 to 4,10% in eluate, and from 0,01% to 0,64% in final concentrate with Coxsackie B5, from 0,1% to 0,86% in eluate and from 0,17% to 1,17% in concentrate with Feline calicivirus.

Better results were obtained using ultrafiltration in concentration step with recovery percentage ranging from 0,2% to 4,13% for Coxsackie B5 and from 2,96% to 10% for Feline calicivirus.

Actually these data are preliminary and they need to be further confirmed, however they suggest that the concentration step may be improved using ultrafiltration while elution is still a critical point in this method for viral recovery from foods.

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TRAVEL MEDICINE AND INFECTIOUS DISEASE

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