

in Australia's Antarctic Territory.

Method

The Australian Antarctic Division has been providing medical support for its expeditions in the Antarctic for some 60 years. This breadth of experience has provided a large epidemiological evidence base which informs the nature of Antarctic and expedition medicine.

Conclusion

Antarctic medicine is the practice of medicine in the extreme hostile environment of Antarctic. It is characterized by barriers of sea ice, extreme cold, wind and seasonal winter darkness. Unique considerations should be part of the travel medicine provider's assessment of those wishing to join expeditions to the Antarctic. Antarctic medicine is arguably the most isolated medical practice on earth!

PAPUA NEW GUINEA: DISEASE EPIDEMIOLOGY

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The leading causes of morbidity and mortality in Papua New Guinea (PNG) include acute respiratory infection, malaria and tuberculosis. Of these, malaria constitutes by far the greatest threat to visitors and resident expatriates. *Plasmodium falciparum*, *vivax*, *ovale* and *malariae* are all endemic throughout the country but their epidemiology varies widely throughout this geographically diverse country. Altitude is the principal determinant of disease prevalence. Transmission of *P.falciparum* ranges from being absent in 'highlands' regions above 1700m to unstable/epidemic at intermediate altitudes and then hyper- and holoendemic in coastal lowland regions. The latter have some of the highest rates of transmission recorded worldwide. However, in spite of this, transmission within the principal coastal towns themselves (including Port Moresby, Lae and Madang) may be relatively low. *P.falciparum* resistance to affordable conventional antimalarials (chloroquine and anti-folates) represents a significant challenge to local treatment policies. However this population has not had significant exposure to newer agents (including mefloquine, atovaquone and lumefantrine) which are likely to remain effective. Rates of *P.vivax* resistance to chloroquine and primaquine are also now high. In addition to malaria, other endemic vector borne diseases include filariasis in remote rural areas and dengue, which is probably endemic throughout much of coastal PNG. Japanese encephalitis has been described in at least two geographically separate locations but its distribution throughout the country and its contribution to human disease remain unknown. Sexually transmitted infections including gonorrhoea, chlamydia, donovanosis and syphilis are highly prevalent. HIV prevalence continues to rise at an alarming rate with the highest rates in large urban centres (Port Moresby, Lae and Mt Hagen). Food and water-borne disease ranks fairly low as a cause of morbidity and mortality in PNG. However typhoid is prevalent particularly in peri-urban settlements and in the more densely populated regions of the highlands.

THE TRAVEL MEDICINE CONSULTATION

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The consultation with the travel medicine service provider and the traveller is the foundation of the process of travel medicine, and provides the analysis of risk upon which all specific preventive advice and interventions are subsequently based. The interaction is a complex one, and practitioners must provide appropriate time, location and resources in order to maximise the usefulness. Understanding the phases of the travel experience, some basic aspects of the psychology of travel and preventive health behaviour, and ensuring processes can be flexible are important considerations. Different models of consultations are employed in different legislatures around the world, and this has some impact on the nature of the consultation. A core aspect of the process of risk assessment includes taking a detailed medical and personal history of the traveller relevant to travel medicine, obtaining a detailed assessment of the itinerary, destinations, proposed activities, accommodation, and duration of travel, and reviewing previous immune status of the traveller. Factors relating to the traveller, the itinerary and the destination, must all be considered. Cost implications must be discussed. The risk assessment should guide the recommendations for specific advice and information, vaccination, chemoprophylaxis, medical kits and other preventive interventions. Individuals with higher-risk

factors should be specifically identified and managed. Travel medicine practitioners should ideally possess a relevant knowledge of travellers morbidity, both communicable and non-communicable, epidemiology of emerging illness, vaccinology, geography, and management of post-travel illness. In addition, practitioners should provide within the context of the consultation the necessary vaccines, medications, and preventive products. Providing some vaccines as per a destination country list alone is not good travel medicine, and a quality travel medicine consultation must represent a complex and comprehensive response to an organised, structured process. This presentation discusses this process.

SPECIAL TRAVELLERS

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Objective

This presentation will outline the basic issues facing special travellers such as children, pregnant women and the immunocompromised.

Method

A summary of current recommendations, and their rationales, based on literature review will be presented.

Result

A greater understanding of the particular risks faced by these special travellers.

Conclusion

Special travellers have special needs in relation to all aspects of their travel health – pre, post and during. Issues include vaccine safety and efficacy, exacerbation of pre-existing conditions, increased susceptibility to illness overseas and implications for post travel care.

SPECIAL ITINERARIES

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Objective

People often engage in activities during travel that they do not undertake in their countries of origin. Pre travel health advice needs to be tailored to risks of a diverse range of itineraries and activities undertaken during travel. This is an integral part of the three Ts risk assessment process of considering travel health advice for this traveller, this trip and this time.

Method

The presentation will cover risk assessment for travellers with special itineraries.

Result

Issues covered in the presentation are the last minute traveller, the frequent traveller, backpacking and long term travel. The presentation will cover issues of providing advice to travellers who plan to visit high risk destinations for infectious diseases such as Africa. As well as considering the itinerary the presentation will also cover risk assessment and advice for travellers planning special activities such as surfing, diving and caving. Risk assessment and advice on high altitude travel will also be considered.

Conclusion

Providing advice to travellers with special itineraries involves well developed skills in risk assessment and tailoring advice to the travellers, the trip and the time.

CASES IN PRE-TRAVEL

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An interactive case-based program exploring important themes in pre-travel assessment and management. A number of illustrative real-life case examples will provide the foundation for further discussion and audience participation.

REGIONAL TRAINING IN TROPICAL AND TRAVEL MEDICINE

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Objectives

To review regional training initiatives in travel and tropical medicine.

Methods

Standard searches on PubMed, CINAHL and Google were conducted looking at key words training, education, academic, professional, travel medicine and tropical medicine, primarily focusing on Australia and New Zealand and our regional neighbours.

Results

Australia has a long tradition of academic training in tropical medicine dating back to 1925. Since then, major programs in tropical medicine have arisen elsewhere in the region, including the University of the Medical Sciences (now Mahidol University) in 1961, which is also part of the SEAMEO TROPED Network. A professional college of tropical medicine was established in Australia in 1991. Both Australia and New Zealand offer academic programs in travel medicine. Following the establishment of the Asia Pacific Travel Health Society, a professional faculty of travel medicine was established in Australia in 2000. Various organizations now offer continuing professional development programs in tropical and travel medicine throughout the region. Linkages are just starting to form with licensing and statutory requirements for training, for example with Yellow Fever Vaccination Centres in New Zealand, which may assist in the uptake of academic and professional training in tropical and travel medicine.

Conclusions

Extensive opportunities exist for academic and professional training in tropical medicine in the region. Professional and commercial groups should advocate for appropriate training requirements for those entering the field of travel medicine and for continuing professional development.

HAJJ MEDICINE

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Hajj is the greatest assembly of humankind on earth. More than 2.5 million Muslims attend Hajj every year. In this epic pilgrimage, millions of Muslims make a visit to the Ka'aba, (the house of God) and surrounding Holy Sites. Over a number of days, their struggle becomes both literal and metaphysical. While he seeks to offer prayer, the pilgrim must also struggle against distinct environmental and public health hazards throughout the journey. These hazards have been repeatedly recorded in the literature for over a hundred years. Today we can learn much from Hajj. Pilgrimage presents a unique opportunity to study health issues in a mobile population. Due to massive scale and singular focus on one city, Hajj affords insights no other migration can yet offer. Substantial hazards accompany such extraordinary congestion. Rather than a onetime annual undertaking, Hajj planning has become a year-long cycle of preparation, both for the host nation, Saudi Arabia, as well as nations sending pilgrims on the journey. Planning for mass migration on such a colossal scale demands collective enthusiasm and cooperation on an unprecedented scale, both between individuals and nation-states. This 'good behavior' (care for the other pilgrim, aiding the weak, guiding the infirm, and the countenance of deference required by God of the Muslim in Hajj) is probably the most powerful check to immense dangers a crowd of 2 million could otherwise present. Prolonged stays at Hajj sites, the prevailing climate of heat and humidity and shared sleeping accommodation in tents encourage disease transmission, especially that of airborne agents. Overwhelming vehicular and population congestion, together with inadequately prepared or stored foods add to attendant health risks. Hazards can be communicable and non communicable. The congestion and the mass migration of the pilgrims bring a number of infectious processes to the fore. Meningococcal disease, respiratory tract infections, blood borne, diarrheal and zoonotic diseases all are frequently encountered problems for the pilgrims, either during Hajj or following Hajj. Unique occupational infections affect the abattoir worker at the Hajj and the Hajj barber, areas which are now firmly addressed by the Saudi authorities. Most concerning are emerging infectious diseases (including SARS, and Pandemic Avian Influenza) and their devastating potential to spread. Increasingly, international collaboration (in planning vaccination campaigns, developing visa quotas, arranging rapid repatriation, managing health hazards at the Hajj and providing care beyond the Holy sites) become essential. Planning and supporting Hajj has become a forum for collaboration crossing any political considerations. The Kingdom remains

very committed to its sovereignty over the Holy Sites in order to safeguard the Hajj for the benefit of all Muslims around the globe.

PREPARING FOR BEIJING 2008

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In August 2008 Beijing will host the 29th Summer Olympic Games with over 600,000 foreign visitors and 1.1 million Chinese visitors predicted to visit the city. Concerns have been expressed internationally about the effects of air pollution on both athletes and visitors. Access to clean food and water as well as avoidance of infectious diseases also remain important issues for foreign visitors. This presentation will discuss the major health concerns that Beijing faces during the Olympic period and the various approaches that have been set up to minimize these problems. From changes in health care infrastructure to monitoring air quality and weather conditions, China has taken major steps to improve Beijing's environment and access to resources during the Olympic Games. Familiarity with the 2008 Beijing Olympic preparations will be helpful for all travel health practitioners who advise travellers planning a visit to Beijing in August 2008.

HOST RISK FACTORS IN TRAVELLERS' DIARRHEA AND POST-INFECTIOUS IRRITABLE BOWEL DISEASE

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Development of diarrhea during international travel appears to depend upon what persons do and who they are. With the knowledge that food and to a lesser degree beverages are the important sources of travellers' diarrhea (TD), it is assumed although unproven that exercising care in what is consumed will reduce risk of acquiring TD. Recent studies provide evidence that host genetic factors influence rates of TD. The bacterial enteropathogens, which represent the major cause of TD, produce variable degrees of intestinal inflammation during illness. Host polymorphism in genes that control release of gut inflammatory markers, including lactoferrin from granules of polymorphonuclear leukocytes (PMNL) and IL-8, a precursor of PMNL, predict persons at special risk for TD. When compared with healthy U.S. students in Mexico and after adjustment for known risk factors for diarrhea, persons with T/T genotype in position codon 632 of the lactoferrin gene had a rate of TD of 67% vs. 33% for other genotypes. The chance of developing TD due to enteroaggregative E. coli (EAEC) was significantly increased among U.S. students with the AA genotype at the -251 position of IL-8 gene compared with other genotypes (OR 208.51; 95% CI, 28.5-1525.36). In a group of 97 students from the U.S. in Mexico, our group found that 61 (63%) experienced TD. Six months later 6 (10%) of those having experienced diarrhea earlier in Mexico met the Rome II criteria for new onset post-infectious irritable bowel syndrome (PI-IBS). None of the students not having experienced diarrhea were shown to have new onset IBS. In a separate study by Stermer et al., primarily among international visitors to Asia, 16 of 118 (14%) experiencing TD and 7/287 (2%) not having experienced TD were found to have PI-IBS 6-7 months later (P <.0001; RR 5.2; 95% CI, 2.2- 12.3). Other studies have shown that once PI-IBS develops it can be expected to last years to decades. Until we are able to identify persons at greatest risk for TD and PI-IBS during international travel, we should assume all are susceptible to both. Education of future travellers to avoid higher-risk foods and beverages, research into the value of such restrictions and developing ways to achieve improved compliance with the recommendations are needed. Until we have effective ways to predict the persons at special risk and or effective means to prevent the illness, it is this author's opinion that we in travel medicine should consider more liberal use of chemoprophylaxis and to pursue the development of vaccines against this common illness.

EPIDEMIOLOGY AND ETIOLOGY OF TRAVELLER'S DIARRHOEA IN SOUTHEAST ASIA

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