

ASIA PACIFIC
INTERNATIONAL
CONFERENCE ON

travel medicine

Our region in focus

It is with great pleasure that the Organising Committee welcome you to the Asia Pacific International Conference on Travel Medicine 2008 in the beautiful city of Melbourne.

welcome

This is a unique event as never before has an international meeting on travel medicine been held in Australia. It is being co-sponsored and endorsed by the International Society of Travel Medicine and has brought together leading experts from around the region and the globe.

The conference is based around a stimulating scientific program, focusing on a broad range of travel and tropical health issues facing the Asia Pacific region. Regional experts will examine the current emerging health issues facing this growing and dynamic region and put the travel health issues of specific locations under the spotlight. The theme *Our Region in Focus* highlights the detailed focus on specific regional areas and issues.

The conference will also provide a variety of concurrent sessions to give the new-comer to travel and tropical medicine an excellent overview of relevant topics, as well as provide experienced practitioners with a forum for exploring current issues.

APICTM 2008 represents a combined initiative of the International Society of Travel Medicine, the Asia Pacific Travel Health Society, the Australasian College of Tropical Medicine and the Australasian Society for Infectious Diseases. We believe by bringing together these authoritative bodies, we will share the widest range of ideas, current research and thinking, and help define 'best practice'.

On behalf of the Organising Committee

Dr Tony Gherardin and Dr Joseph Torresi
Co-convenors

Representing:

The 3rd Regional Conference of the International Society of Travel Medicine

The 7th Asia Pacific Travel Health Conference

The 17th Annual Scientific Meeting of the Australasian College of Tropical Medicine





committees

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Conference Management

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industry sponsors

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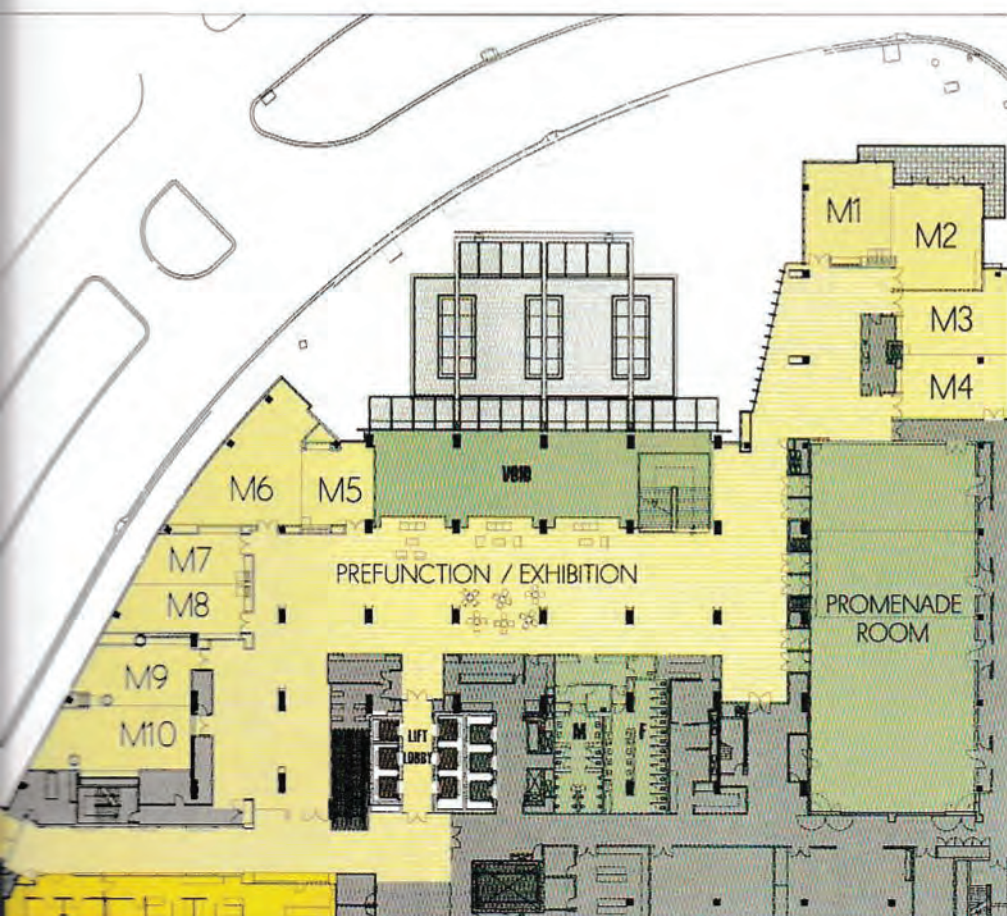
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venue

Crown Promenade Hotel is located in Melbourne's vibrant Southbank entertainment precinct.

Directly linked to the exciting Crown Entertainment Complex by air bridge, it is also close to the Central Business District, the Melbourne Exhibition and Convention Centre and many of the city's most famous arts and sporting facilities.



CONFERENCE VENUE

Crown Promenade Hotel
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Southbank VIC 3006
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Toll free 1800 776 612 (within Australia)
Facsimile +61 (03) 9292 6677
www.crownpromenade.com.au

REGISTRATION AND INFORMATION DESK

The registration and information desk is located in the Crown Conference Centre pre-function area and will be open at the following times:

Sunday 24 February	16:00 – 18:00
Monday 25 February	07:30 – 18:00
Tuesday 26 February	07:30 – 18:00
Wednesday 27 February	07:30 – 15:45

SPEAKER PREPARATION ROOM

Speakers are required to submit and review their presentations prior to their sessions. The speaker preparation room is located in M7 and will be open at the following times:

Sunday 24 February	16:00 – 18:00
Monday 25 February	07:30 – 17:00
Tuesday 26 February	07:30 – 17:00
Wednesday 27 February	07:30 – 14:15

The speaker preparation room is proudly sponsored by Salix Pharmaceuticals.

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The Organising Committee gratefully acknowledges
the support of our Academic Sponsors.

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INTERNET CAFÉ

The internet café is located in the Crown Conference Centre pre-function area and will be open at the following times:

Monday 25 February	09:00 – 17:00
Tuesday 26 February	09:00 – 17:00
Wednesday 27 February	09:00 – 15:45

The internet café is proudly sponsored by Australian Doctor.

Australian Doctor is the leading medical publication in Australia and has won GP's respect with its in-depth news coverage and long tradition of editorial excellence since its launch 23 years ago. We achieve this position through understanding our audience and consistently delivering accurate and independent news and information that is of interest and relevance to today's GPs. www.australiandoctor.com.au is the single most authoritative website for GPs in Australia, providing clinical information, resources, links and daily news.

For more information on Australian Doctor please contact:

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travel medicine

Our region in focus



Royal Australian College of General Practitioners (RACGP) Quality Assurance and Continuing Professional Development (QA&CPD) Program

APICTM 2008 is approved by the RACGP as part of the 2008 – 2010 triennium for 40 category – 1 points (embedded Active Learning Module), activity number 736829 or 30 category – 2 points, activity number 736828.

If you did not notify the Conference Organisers that you are seeking category 1 or category 2 points at the time of registering, please visit the registration and information desk no later than 18:00 on Monday 25 February 2008.

SUNDAY

WELCOME RECEPTION – ENTERTAINMENT



Sunday 24 February 2008

18:00 – 20:30

Crown Conference Centre
pre-function area

Catch up with old friends and colleagues, meet new friends and colleagues and welcome in APICTM 2008. The Welcome Reception is included in full registration. Additional tickets can be purchased via the registration and information desk for \$110 per person including GST.

Entertainment at the Welcome Reception is proudly sponsored by Salix Pharmaceuticals.

sponsored symposia

MONDAY

GLAXOSMITHKLINE LUNCH SYMPOSIUM



GlaxoSmithKline
Vaccines

Monday 25 February 2008

12:45 – 14:00

Promenade 1 and 2

UPDATES AND CONUNDRUMS FOR THE UNIVERSAL TRAVELLER

Professor Robert Steffen (University of Zurich), Dr Santanu Chatterjee (Woodlands Medical Centre, India) and Dr Joseph Torresi (University of Melbourne) will give updates on hepatitis A and B, and discuss recent developments in typhoid. The symposium will also feature an interactive case discussion and workshop led by Dr Bernie Hudson (Royal North Shore Hospital).

Attendance at the GlaxoSmithKline lunch symposium is open to all registered delegates, however limited catering is available, therefore prompt attendance is recommended.

TUESDAY

CSL BIOTHERAPIES BREAKFAST SYMPOSIUM

CSL Biotherapies

Tuesday 26 February 2008

07:15 for a 07:30 start – 08:50

M1 and M2

JAPANESE ENCEPHALITIS IN AUSTRALIA: THE STORY SO FAR

The topic for this symposium is Japanese Encephalitis. Dr Jeffrey Hanna, a highly regarded Public Health Physician from Queensland, Australia will present on this topic. His presentation is titled Japanese Encephalitis in Australia: The Story so Far. Also presenting is Dr Astrid Kaltenböck who will discuss New Vaccines in Development for Immunisation against Japanese Encephalitis. The meeting will be chaired by Dr Frank von Sonnenburg, President ISTM, Head Section of International Medicine and Public Health, Germany. This symposium is sponsored by CSL Biotherapies.

As limited spaces are available at the CSL Biotherapies Breakfast Symposium, this symposium is by invitation only.

TUESDAY

SANOFI PASTEUR LUNCH SYMPOSIUM

sanofi pasteur
The vaccines business of sanofi-aventis Group

Tuesday 26 February 2008

12:45 – 14:00

Promenade 1 and 2

SMART IMMUNIZATION FOR SOUTH EAST ASIA TRAVEL

Chaired by Dr Tony Gherardin (Australia), this Sanofi Pasteur symposium will feature Dr Robert Steffen (Switzerland), Dr Gerard Sonder (Netherlands), Dr David Overbosch (Netherlands) and Dr Bernie Hudson (Australia). It will focus on the specific immunization needs for travellers going to the South East Asia region, including the case of people visiting friends and relatives overseas, and presenting the clinical experience on food borne diseases prophylaxis: Hepatitis A, Typhoid, Cholera and ETEC infections.

Attendance at the Sanofi Pasteur lunch symposium is open to all registered delegates, however limited catering is available, therefore prompt attendance is recommended.



plenary speakers

GRAHAM BROWN



Graham Brown, formerly Head of Victorian Infectious Diseases Service, Royal Melbourne Hospital, is the James Stewart Professor of Medicine, Head, Department of Medicine (RMH/WH) and Director of the Nossal Institute for Global Health in the University of Melbourne. He has a long record of infectious diseases research, particularly focusing on the immune response to *Plasmodium falciparum* malaria in humans and efforts to develop a malaria vaccine. He has been a member of several international advisory groups on malaria, including as Chair of Steering Committees on malaria and immunisation for the World Health Organization Tropical Disease Research Program and member of the Advisory Committee of the Bill and Melinda Gates Children's Vaccine Program. He has been the local Site Director for the global GEOSENTINEL programme that contributes to international surveillance of infectious diseases in travellers, with the goal of developing the evidence base for the provision of advice to international travellers. His other interests include clinical aspects of pneumonia, development of decision support systems for antibiotic prescribing, mathematical modeling of Infectious Diseases and improved understanding of nosocomial infections. He has played a leadership role in debates on ethics in medical practice and research.

MIKE CATTON



Michael Catton, BSc (Hons), MBChB, FRCPA. Dr Mike Catton is Director, and Head of Virology at VIDRL a Victorian, national, and international reference laboratory. VIDRL has three WHO Collaborating Centre designations: (Influenza Virus Reference and Research, and Biosafety), two WHO regional reference laboratories (measles, and poliovirus), as well as national reference laboratories for viral haemorrhagic fevers, poliovirus and measles. Mike's professional interests are in molecular viral diagnostics, and emerging viruses. He is a member of WHO's Biosafety Assessment Group, and has undertaken WHO consultancies around Asia. In 2003 Mike led a collaborative effort to develop Australian laboratory capacity for responsiveness to SARS. In 2007 his group jointly discovered a new arenavirus as the cause of a cluster of deaths among Victorian transplant patients.

BART CURRIE



Bart Currie is an Infectious Diseases Physician at Royal Darwin Hospital and Professor in Medicine at the Northern Territory Clinical School, Flinders University. He is also Head of the Tropical and Emerging Infectious Diseases Division of the Menzies School of Health Research at Charles Darwin University. Areas of interest include clinical and epidemiological aspects of tropical and emerging infections, development of treatment guidelines and clinical toxinology.

TIMOTHY DAVIS



Tim Davis is Professor of Medicine at the University of Western Australia and a consultant physician at Fremantle Hospital. He has had an interest in tropical medicine since working as a Research Fellow in the Oxford-Mahidol-Wellcome Unit in Thailand between 1987 and 1990. He has carried out studies on malaria pathophysiology and treatment in China, Vietnam, Cambodia and Nepal, and is currently involved in collaborative projects in Papua New Guinea and Malaysian Borneo.

HUME FIELD



Dr Hume Field is an internationally recognized authority on emerging infectious diseases associated with wildlife. He is a veterinary epidemiologist with particular experience in the design and implementation of wildlife surveillance programs and in investigations of disease emergence from wildlife. He played a key role in the identification of fruit bats as the natural reservoir of Hendra virus, and conducted the initial investigations of the ecology of Hendra virus and Australian bat lyssavirus in Australian bats. He was a member of the international taskforce investigating the 1999 Nipah virus outbreak in Malaysia,

and a member of two WHO missions investigating the origins of the SARS outbreak. His current research focus includes risk factors for henipavirus spillover, and investigations of SARS-like coronaviruses in bats. He is currently employed by the Department of Primary Industries and Fisheries in Brisbane, Australia.

plenary speakers

JOHN MACKENZIE



John S Mackenzie is Professor of Tropical Infectious Diseases in the Division of Health Sciences at Curtin University of Technology, and inaugural holder of the Premier's Fellowship. He is also Deputy CEO of the Australian Biosecurity CRC for Emerging Infectious Diseases. He was formerly Professor of Microbiology at the University of Queensland, and held various positions at the University of Western Australia. He has served as Secretary-General of the International Union of Microbiological Societies (IUMS), as Past President of the Australian Society for Microbiology, and as Past President of the Asian-Pacific Society for Medical Virology. He was elected as a Fellow of the American Academy of Microbiology, and in 2002 he was appointed as Officer in the Order of Australia for services to public health research and to education. In 2005, he was the inaugural recipient of the Academy of Science Malaysia's Mahathir Science Award for Excellence in Tropical Research. He serves as a member of various national international committees including the Steering Committee for the Global Outbreak Alert and Response Network of WHO, a member of the Technical Advisory Group for the Asia Pacific Strategy for Emerging Diseases of WHO, a member of the International Health Regulations Roster of Experts as an expert in laboratory issues, and a Member of the Advisory Board of the Centre for Emerging Infectious Diseases of the Chinese University of Hong Kong. His research interests have been in mosquito-borne virus diseases and emerging zoonotic viruses. He has published over 270 scientific papers, edited three books and contributed to major texts in the areas of Japanese encephalitis virus and other mosquito-borne viruses, emerging zoonoses, and influenza.

ALAN MAGILL



Colonel Alan Magill MD, FACP is the Director of the Division of Experimental Therapeutics at the Walter Reed Army Institute of Research (WRAIR) in Washington DC, USA. Dr. Magill is ABIM board-certified in internal medicine and infectious diseases. He has spent the last 15 years developing new generations of vaccines, diagnostics, and drugs directed against malaria and leishmaniasis. He has lived and worked in South America, Africa, and Southeast Asia. Dr. Magill previously served for four years as the Head of Parasitology at the Naval Medical Research Center Detachment (NMRC) in Lima, Peru, and for two years as the Head of Clinical Research for the Malaria Vaccine Development Unit of the U.S. National Institutes of Health. He has dual academic appointments as Associate Professor of Medicine and Associate Professor of Preventive Medicine and Biometrics at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland. He is a faculty member for the Gorgas Course in Clinical Tropical Medicine in Lima, Peru, continues to be sought after speaker on travel and tropical medicine-related topics, and a participant in numerous national and international advisory committees and workshops. He is an active member of the American Society of Tropical Medicine and Hygiene, serving as their CME Courses Director, and is the current President of their Clinical Group. Dr. Magill is President-Elect of the International Society of Travel Medicine (ISTM) where he has been a member since 1992, serving as the Associate Chair of the Scientific Program Committee at CISTM9 (2005) in Lisbon and at CISTM10 (2007) in Vancouver. He is the co-editor of the 9th edition of Hunter's Tropical Medicine and has authored more than 50 peer-reviewed publications, 90 abstracts, and 10 book chapters.

continued

ROBERT STEFFEN



Robert Steffen is Professor of Travel Medicine at the University of Zurich, Switzerland. There, he heads the Division of Epidemiology and Prevention of Communicable Diseases and he is also Director of the World Health Organization Collaborating Centre for Traveller's Health. He also is Adjunct Professor in the Epidemiology and Disease Prevention Division of the University of Texas School of Public Health in Houston, TX. Additionally he presides the Swiss Influenza Pandemic Planning Committee, is Vice-President of the Federal Swiss Commission on Vaccination, Co-chair on the Swiss Bioterrorism Committee. He also is the Editor-in-Chief of the Journal of Travel Medicine.

ANNELIES WILDER-SMITH



Associate Professor Annelies Wilder-Smith is a Dutch physician who graduated from the University of Heidelberg, Germany, in 1987. She has extensive postgraduate training and experience in travel and tropical medicine and international health. She did a Masters in International Health at Curtin University, Perth, Australia, and obtained a PhD in International Health from the University of Amsterdam. She has worked in various countries such as China, Nepal, Papua New Guinea, New Zealand, Switzerland and Germany. From 2000 to 2006, she was the Head of the Travellers' Health and Vaccination Centre in

Singapore. From September 2006 until February 2007 she was based at WHO Headquarters in Geneva to coordinate the revision of the WHO publication International Travel and Health 2007. She returned to Singapore from where she now coordinates the revision for International Travel and Health 2008 for WHO in addition to her full-time position at the National University Singapore as Associate Professor. She is module coordinator on global health issues and communicable diseases for the MPH programme at the National University Singapore, and is Director of the Travellers' Screening and Vaccination Clinic at the National University Hospital in Singapore. Her research interests are travel health, dengue, meningococcal disease, tuberculosis, SARS, and other emerging diseases. Her main focus in under- and postgraduate teaching is related to travel health, public health, epidemiology, vaccine preventable diseases, general infectious diseases, humanitarian emergencies and community medicine. Prof. Annelies Wilder-Smith has published over 65 scientific papers in international peer reviewed journals. She co-edited the book Travel Medicine: Tales behind the science (Elsevier) and co-edited the book Manual of Travel Medicine and Health (Steffen/DuPont/Wilder-Smith, 2003 and 2007, B.C. Decker Inc) and authored two books (How to take a medical history in Chinese (Armour Publishing ISBN 981-4045-29-2) and Travel Health Guide for International Travellers (Elisher Communications, ISBN 981-04-4160-6). Dr Wilder-Smith is Editorial Consultant to The Lancet and Advisor to GeoSentinel. She is also on the editorial board of the Journal of Travel Medicine. She serves as consultant to various NGOs in Asia and is the research consultant to The Leprosy Mission. Since 2001, she serves as Medical Director for a Community Health Project amongst coastal fishermen in South India.

CONFERENCE PROGRAM

MONDAY 25 FEBRUARY 2008

0800 – 0850

Registration

Room: Pre-function area

0900 – 1030

PLENARY (P1)

Travel in the Region

Room: Promenade 1 & 2

15th Ashdown Oration

Obtaining the Data for Evidence-based Advice for Prevention of Infections in Travellers

Prof Graham V Brown

Nossal Institute for Global Health, The University of Melbourne, Royal Melbourne Hospital, Australia

The World is Flat: Travel and Public Health in the Connected Global Community

Dr Alan Magill

Walter Reed Army Institute of Research, USA

Challenges for Travel Health

Prof Robert Steffen

University of Zurich, Switzerland

1030 – 1115

Morning Tea

Room: Pre-function area

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1115 – 1245

SYMPOSIUM (S1)

Inhalations, Ingestions and Indiscretions

Room: Promenade 1 & 2

Respiratory Tract Infections in
International Travellers

Dr Karin Leder

Royal Melbourne Hospital

Non-Diarrheal Food Borne Diseases
in Travellers

Prof Eli Schwartz

Tel Aviv University, Israel

STDs and Travel

Dr Darren Russell

Cairns Sexual Health Service

WORKSHOP (WS1)

Bites and Stings

Room: M1 & M2

Snakebite in Asia/Pacific

Dr Ken Winkel

Spiders/Scorpions/Creepy Crawlies

Dr Julian White

Marine Envenomations

Dr Peter Fenner

TRAVEL MEDICINE FOUNDATION (TMF1)

Vaccines

Room: M3 & M4

Basic Concepts in Vaccination

Dr Frank von Sonnenburg

Routine Vaccine use in Travellers

Dr Vanessa Field

Specific Travel Vaccines

Dr Jennifer Sisson

1245 – 1415

GLAXOSMITHKLINE LUNCH SYMPOSIUM

Updates and Conundrums for the Universal Traveller

Room: Promenade 1 & 2

Presentations by: Prof Robert Steffen (Switzerland), Dr Santanu Chatterjee (India), Dr Joseph Torresi (Australia)

This symposium will also feature an interactive case discussion and workshop led by Dr Bernie Hudson (Australia)

Open to all registered delegates, however limited catering is available, therefore prompt attendance is recommended.



1545 - 1545

**SYMPOSIUM
(S2)**

Wilderness and Remote Medicine

Room: Promenade 1 & 2

Issues in Wilderness Medicine

Dr David Tingay
Royal Children's Hospital

The Royal Flying Doctor Service – Outback Australia

A/Prof Steve Margolis
Royal Flying Doctor Service

Antarctic Medicine

Dr Jeff Ayton
Australian Antarctic Division

**COUNTRY IN FOCUS
(CIF1)**

Papua New Guinea/Oceania

Room: M1 & M2

Prof Mathias Sapuri

Dr Marc Shaw

Dr Harin Karunajeewa

**TRAVEL MEDICINE
FOUNDATION (TMF2)**

Pre-Travel Management

Room: M3 & M4

The Travel Medicine Consultation

Dr Tony Gherardin

Special Travellers

Dr Trish Batchelor

Special Itineraries

Prof Nick Zwar

**WORKSHOP
(WS2)**

Cases in Pre-Travel

Room: Promenade 3

Dr Albie de Frey

Dr Ben Cowie

1630 - 1630

Afternoon Tea

Room: Pre-function area

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1800 - 1800

**SYMPOSIUM
(S3)**

Regional Challenges in Travel Medicine

Room: M1 & M2

Regional Training in Tropical and Travel Medicine

Dr Peter Leggat
James Cook University

Hajj Medicine

Dr Ziad Memish
GCC Centre for Infection Control, Riyadh, Saudi Arabia

Preparing for Beijing 2008

Dr Sue MacDonald
Beijing United Family Hospital, China

**SYMPOSIUM
(S4)**

Travellers Diarrhoea

Room: Promenade 1 & 2

Host Risk Factors in Travellers' Diarrhoea and Post-Infectious Irritable Bowel Disease

Prof Herbert DuPont
The University of Texas, USA

Epidemiology and Etiology of Traveller's Diarrhoea in SE Asia

Dr Virasakdi Chongsuvivatwong
Prince of Songkla University, Thailand

Preventive Strategies against Travelers' Diarrhea

Prof Robert Steffen
University of Zurich, Switzerland

**COUNTRY IN FOCUS
(CIF2)**

India/Nepal

Room: M3 & M4

Dr Santanu Chatterjee

Dr Prativa Pandey

**FREE PAPERS
(FP1)**

Infectious Disease in Travellers

Room: Promenade 3

Cutaneous Melioidosis in the Tropical Top End of Australia

Dr Katherine Gibney

A Review of 10 Years of Data from the Australian Defence Force Central Malaria Register

Major Nathan Elmes

Enteric Fever in Returned Travellers: A 10 Year Experience in a University Teaching Hospital

Dr Sam Hume

Infectious Gastrointestinal Disease in Returned Travellers: A Global Perspective

Ashwin Swaminathan

Blood Diamonds – All that shimmers is not...

Dr Albie de Frey

CONFERENCE PROGRAM

TUESDAY 26 FEBRUARY 2008

0715 – 0850

CSL BIOTHERAPIES BREAKFAST SYMPOSIUM

Japanese Encephalitis in Australia: The Story So Far

Chair: Dr Frank von Sonnenburg

Limited spaces available, by invitation only

Room: M1 & M2

CSL Biotherapies

Japanese Encephalitis in Australia: The Story So Far

Dr Jeffrey Hanna

New Vaccines in Development for Immunisation against Japanese Encephalitis

Dr Astrid Kaltenböck

0900 – 1030

PLENARY (P2)

Emerging Infectious Disease in our Region

Room: Promenade 1 & 2

Arboviruses in the Asia-Pacific Region

Prof John MacKenzie

Curtin University of Technology

Bats and Novel Zoonoses

Dr Hume Field

Biosecurity Queensland DPI&F

Avian Influenza and the Potential for a Human Pandemic

Dr Mike Catton

Victorian Infectious Diseases Reference Laboratory

1030 – 1115

Morning Tea

Room: Pre-function area

1115 – 1245

SYMPOSIUM (S5)

Migration Health

Room: M3 & M4

Infectious Diseases and Nutritional Deficiencies in Immigrants and Refugees

Dr Bev Biggs

Royal Melbourne Hospital

Refugee Health in Australia

Dr Mitchell Smith

NSW Refugee Health Service

Visiting Friends and Relatives (VFRs)

Dr Bernie Hudson

Royal North Shore Hospital

WORKSHOP (WS3)*

RACGP QAWCPO CAT 1 SESSION

Pre-Travel issues in Malaria

Room: Promenade 1 & 2

Dr Deborah Mills

Dr Alan Magill

SYMPOSIUM (S6)

Issues for the Travel Community

Room: Promenade 3

Beach and Outback – Issues for Inbound Tourism

Dr Irmgard Bauer

James Cook University

The Spread of Poliomyelitis via International Travel: A Test Case for the International Health Regulations?

Dr Annelies Wilder-Smith

National University Hospital, Singapore

Health Tourism- Regional Impact

Mr Brett Wilson

Australia Health Export Industry Council

1245 – 1415

SANOFI PASTEUR LUNCH SYMPOSIUM

Smart Immunization for South East Asia Travel

Chair: Dr Tony Gherardin (Australia)

Room: Promenade 1 & 2

Presentations by: Prof Robert Steffen (Switzerland), Dr Gerard Sonder (Netherlands), Dr David Overbosch (Netherlands), Dr Bernie Hudson (Australia)

Open to all registered delegates, however limited catering is available, therefore prompt attendance is recommended.

sanofi pasteur
The vaccines business of sanofi-aventis Group

1415 - 1545

ASID SYMPOSIUM (S7)*

RACGP Q&A/CPD CAT 1 SESSION

Malaria

Room: Promenade 1 & 2

Clinical Issues of Malaria in our Region

Dr Srivichia Krudsood

Pre-travel Malaria Chemoprophylaxis as a Means of Increasing Traveller Compliance

Prof Dennis Shanks
Army Malaria Institute

Vivax Malaria in our Region

Dr Nick Anstey
Menzies School Of Health Research and Royal Darwin Hospital

COUNTRY IN FOCUS (CIF3)

Indonesia

Room: M1 & M2

Dr Richard Tomlins

Dr Ross Atkinson

TRAVEL MEDICINE FOUNDATION (TMF3)

Non-Vaccine-Preventable Diseases of Travellers

Room: M3 & M4

Vector Borne

Dr Martin Haditsch

Guts and Gasping (Enteric/Respiratory)

Dr Mike Starr

DVTs, Altitude, Motion Sickness & Jetlag

Dr Jonathan Cohen

FREE PAPERS (FP2)

General Issues in Travellers and Immigrants

Room: Promenade 3

Vitamin D Deficiency is Associated with Tuberculosis (TB) and Latent TB Infection among Immigrants from Sub-Saharan Africa

Dr Katherine Gibney

A Longitudinal Observational Follow Up Study of Schistosomiasis Serology in Australian Travellers and Immigrants

Dr Michelle Yong

Mycobacterium Tuberculosis Infection Associated with Travel: Use of the QuantiFERON-TB Gold Test

Tony Radford

Hepatitis B Serological Patterns Among Sub-Saharan African Immigrants

Dr Katherine Gibney

The Tasmanian Short Courses in Expedition Medicine

Dr Edi Albert

1545 - 1630

Afternoon Tea

Room: Pre-function area

1630 - 1800

SYMPOSIUM (S8)

Risks

Room: M1 & M2

Biological Warfare, Bioterrorism and Travel

Dr Andy Robertson
Western Australian Department of Health

The Safety and Security of Travel

Dr Marc Shaw
Worldwise Travellers Health Centre NZ

Diving in the Pacific Region

Dr Robyn Walker
Australian Defence Force

COUNTRY IN FOCUS (CIF4)

Indochina

Room: M3 & M4

Dr Tony Gherardin

Dr Srivichia Krudsood

Dr Watcharapong Piyaphanee

COLLOQUIUM FOR NEW VACCINES IN TRAVEL MEDICINE AND INTERNATIONAL HEALTH

Room: Promenade 3

Flavivirus Vaccines: Progress and Developments

Prof Eric Gowans

Multicentre, Randomised, Double Blind Phase III Study of the Immunogenicity and Tolerability of ChimeriVax-JE

Dr Joseph Torresi

Randomised, Double Blind, Placebo Controlled Phase III Study of the Safety and Tolerability of ChimeriVax-JE

Dr Joseph Torresi

Long Term Immunogenicity and Safety of the Japanese Encephalitis Vaccine IC51. Interim Results of an Uncontrolled Phase 3 Follow-up Study until Month 12

Dr Astrid Kaltenböck

TRAVEL MEDICINE FOUNDATION (TMF4)*

RACGP Q&A/CPD CAT 1 SESSION

Post Travel Management Workshop

Room: Promenade 1 & 2

Screening and Assessment of Returned Travellers

Dr Dan O'Brien

Emergencies and Triage

Dr Mathew Klein

Case Studies of Parasitic Disease in Returning Travellers

Prof John Simon

CONFERENCE PROGRAM

WEDNESDAY 27 FEBRUARY 2008

0800 – 0850

CASES OF THE DAY (COD1)

Paediatrics

Room: Promenade 1 & 2

Case 1 – Dr Mike Starr

Case 2 – Dr Karl Neumann

CASES OF THE DAY (COD2)

Adult Travel Medicine

Room: M1 & M2

Case 1 – A/Prof Stephen Rogerson

Case 2 – Dr Jack Richards

0900 – 1030

PLENARY (P3)

Vector-Borne Diseases

Room: Promenade 1 & 2

Changing Epidemiology of Malaria in the Asia-Pacific Region

Prof Tim Davis

University of Western Australia – School of Medicine and Pharmacy

Dengue in International Travellers

Prof Annelies Wilder-Smith

National University Hospital, Singapore

Emerging Issues in Vector Borne Diseases

Prof Bart Currie

Menzies School of Health Research – Royal Darwin Hospital

1030 – 1115

Morning Tea

Room: Pre-function area

1115 – 1245

SYMPOSIUM (S9)

Travel Medicine Aspects for Organisations

Room: M1 & M2

Issues in Expatriate Health: Agenda for Action

Dr Abu SM Abdullah
Boston University School of Public Health

Corporate Travel Health

Mr Jeremy Limpens
Travel Doctor-TMVC

Volunteers Abroad

Dr Vanessa Field
NaTHNaC and InterHealth, London, UK

WORKSHOP (WS4)*

RACGP Q&A/CPD CAT 1 SESSION

Malaria Prevention Problems and Controversy RACGP Workshop

Room: Promenade 1 & 2

Selected faculty presenting case studies

FREE PAPERS (FP3)

Travel Medicine – Epidemiological Research

Room: M3 & M4

Papua New Guinea Defence Force Health Survey 2006

Dr Andrew Ebringer

Health Issues Encountered by Diabetics on Travel

Dr Ramachandran
Meenakshisundaram

Sexual Health Knowledge, Sexual Culture and Sexual Behaviour Among Trekking Guides in Nepal

Dr Padam Simkhada

Preliminary Results of an Airport Survey of Travellers: Travel Patterns and Infectious Disease Risks

Anita Heywood

Investigation of Febrile Passengers Detected by Infrared Thermal Scanning at an International Airport

Prof John McBride

SYMPOSIUM (S10)

ACTM Convocation XX

Room: Promenade 3

3rd Copeman Oration

Major General (Ret'd)
Prof John H. Pearn
Royal Children's Hospital, Brisbane

1245 – 1415

Lunch

Lunch is not provided unless attending the Asia Pacific Travel Health Society General Meeting

1300 – 1400

Asia Pacific Travel Health Society General Meeting

Open invitation to interested delegates – sandwich lunch provided

Room: M1 & M2

1415 – 1545

COUNTRY IN FOCUS (CIF5)

China/Japan

Room: M3 & M4

Dr Kosuke Haruki

Dr Sue MacDonald

Dr Liu Zhi Yong

SYMPOSIUM (S11)

Health Issues for Children

Room: Promenade 1 & 2

Infants and Children at Altitude:
Air Travel and Acute Mountain Sickness

Dr Karl Neumann
Columbia-Cornell Medical School, USA

Malaria Prevention in Indigenous
Populations

Dr Stephen Rogerson
University of Melbourne

Immunoassays for the Diagnosis
of Tuberculosis

Prof Nigel Curtis
*University of Melbourne and
Royal Children's Hospital*

TRAVEL MEDICINE FOUNDATION (TMF5)

Travel Clinics

Room: Promenade 3

Surveillance and Research

Dr Jim Black

Establishing a Travel Med Clinic

Dr Sonny Lau

A Destination Travel Clinic

Dr Pratiba Pandey

1545

Conference Close

Room: Promenade 1 & 2

* RACGP QA&CPD CAT 1 Sessions: WS3, WS4, S7, TMF4

APICTM 2008 is approved by the Royal Australian College of General Practitioners as part of the 2008 – 2010 triennium for 40 category – 1 points (embedded Active Learning Module), activity number 736829 or 30 category – 2 points, activity number 736828.



poster listing

Poster presentations will be located in M5 and M6 and will be displayed for the duration of the conference.

POSTER BOARD 1

Heineken and the Beijing Olympics

E.W.N. van Vliet

POSTER BOARD 2

Histopathological Features of the Kidney in Plasmodium Falciparum Malaria

S. Nguansangiam, D. Ferguson, M. Riganti, N. Day, N. White, E. Pongponratn, G. Turner

POSTER BOARD 3

Current Problems of Japanese Travelers on Travelers' Vaccines

K. Ouchi

POSTER BOARD 4

State of Information of Tourists Staying in Tick Borne Encephalitis (TBE) and Lyme Borreliosis (LB) Endemic Area

K. Turk, A. Melink, Z. Simonovic, M. Kovacevic

POSTER BOARD 5

Trends in Antimalarial Prescriptions in Australia 2002-2005

P.A. Leggat

POSTER BOARD 6

Knowledge, Attitudes and Practices among Foreign Backpackers towards Malaria Risk in Southeast Asia

W. Piyaphanee, Y. Wattanagoon, U. Silachamroon, T. Ponam, E. Walker

POSTER BOARD 7

The Royal College of Nursing of the United Kingdom (RCN UK) Travel Health Forum

C. Driver, A. Grieve, L. Boyne, A. Jordan, D. Parsons, J. Skeet, C. Tracey

POSTER BOARD 8

Australasian Faculty of Travel Medicine Activities of a Professional Organisation Promoting Healthy Travel

P.A. Leggat, M. Klein

POSTER BOARD 9

The Tasmanian Expedition Medicine Program: Travel Medicine Training for Tomorrow's GPs

E. Albert, M. Tooth, J. Gorman

POSTER BOARD 10

Absence of Avian Influenza A (H5N1) Infection in Japanese Travelers: An Experience at the Largest Travel Clinic in Tokyo

Y. Kato, K. Iwase, T. Miyoshi-Akiyama, K. Shimada, T. Kirikae, J. Takasaki, A. Kawana, S. Kanagawa, K. Kudo

POSTER BOARD 11

Where You Were Born Matters: The Prevalence and Risk Factors for Sexually Transmitted Infections/HIV for Local, Migrant and Overseas Female Sex Workers in Hong Kong

W.C.W. Wong, Y.L. Yim, D.N.T. Leung, H. Lynn, D.C. Ling

POSTER BOARD 12

Travel Health Advisory Group: Activities of a Joint Travel Industry and Travel Medicine Group Promoting Healthy Travel

N. Zwar, B. Hudson, P.A. Leggat

POSTER BOARD 13

Health and Lifestyle of Nepalese Migrants in the United Kingdom

R. Adhikari, P. Simkhada, E. van Teijlingen, A. Raja

POSTER BOARD 14

Chemoprophylaxis of Malaria among Taiwanese International Travellers

H. Yang, J. Cheng

POSTER BOARD 15

To BCG or not to BCG? Preventing Travel-Associated Tuberculosis in Children

M. Ritz, T. Connell, N. Curtis

POSTER BOARD 16

Tourism in the Name of Religion: Experiences for Tamil Nadu

R. Meenakshisundaram,
R. Thirumalaikolundusubramanian

POSTER BOARD 17

Travel-Related Health Problems: A One Year Study in Tokyo

K. Iwase, M. Kamimura, Y. Kato, Y. Mizuno,
S. Kanagawa, J. Takasaki, A. Kawana,
K. Kudo

POSTER BOARD 18

Diamond Dreams: Working in Exploration

L.A. Botha, E. Cousins, D. Ghirlando,
M.H. Ross

POSTER BOARD 19

Multiple Roles of the Medical Device Identification Card in Facilitating International Travel

B.J. Mitchell

POSTER BOARD 20

Chikun what?? Advice for Australian travellers

C. Lau, P. Weinstein

POSTER BOARD 21

The Disease Profile for Expatriates working at an Australian Mine Development Project in Senegal, West-Africa

T. Maarschalk, A.E. de Frey, J. Venter,
L. Pulford, D. Turner

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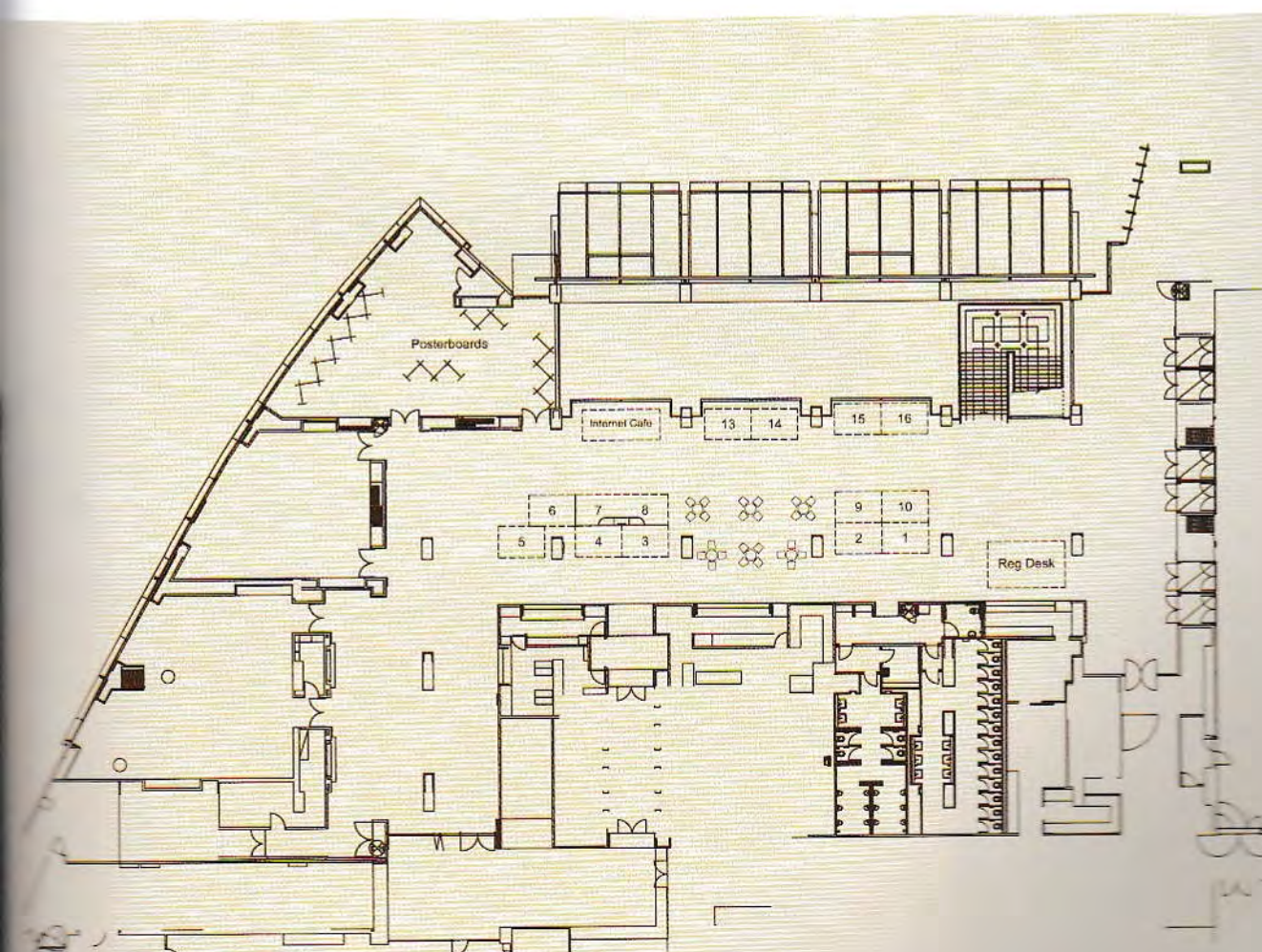
travel medicine

Our region in focus

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BOOTH 5

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The International Society of Travel Medicine (ISTM) is committed to the promotion of healthy and safe travel. In cooperation with national and international health care providers, academic centers, the travel industry and the media, ISTM advocates and facilitates education, service and research activities in the field of travel medicine. This includes preventive and curative medicine within many specialties such as tropical medicine, infectious diseases, high altitude physiology, travel related obstetrics, psychiatry, occupational health, pediatrics, military and migration medicine, and environmental health.

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travel medicine

Our region in focus

exhibitors

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BOOTHS 13, 14

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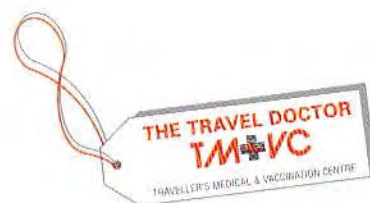
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travel medicine

Our region in focus



general

AIRPORT TRANSFERS

Easy access is available from the airport to the city centre via bus and taxi. Please visit www.melbourneairport.com.au for more information.

Skybus operates a shuttle between the airport and the city, departing every 10–15 minutes between 06:00 and 21:30 and half hourly or hourly at other times. Skybus operates 7 days a week, including public holidays and is a 20 minute average trip. More information can be found at www.skybus.com.au.

TRANSPORT

The Crown Entertainment Complex has over 5,000 car parking spaces in two very accessible car parks.

A two level basement car park and a multi-level car park provide convenient access to all facilities in the complex. Parking for those with disabilities is provided in both the multi-level and basement car parks, in various locations adjacent to lift lobbies.

Tram number's 55, 96, 109 and 112 run past Crown. Flinders Street and Southern Cross Stations are within walking distance. Crown also is highly frequented by taxi cabs.

In addition, the Melbourne City Tourist Shuttle is a free service that runs in a one-way circuit every fifteen minutes from 10:00 to 16:00 daily. The route contains 15 stops, beginning at the Melbourne Museum and Carlton gardens. Stop nine (Southbank) is the most conveniently located stop to the Crown Entertainment Complex.

CREDIT CARDS

Credit cards are widely accepted at hotels, shops, restaurants and airlines. The following cards will be accepted for the conference: Visa, MasterCard and AMEX.

CURRENCY AND BANKING

The Australian Dollar (\$AUD) is the official currency for Australia. All major international banks or their agencies have branches in Melbourne. Most banks are closed on weekends although banking services, including use of major international cards, are readily available in Australia. Major credit cards are commonly accepted for shopping, in restaurants and entertainment venues.

CLIMATE

Melbourne has the reputation that its weather can sometimes be a little unpredictable. However, February is summer in Melbourne, with an average maximum temperature of 26 degrees.

WHAT TO WEAR

Smart casual clothes are suitable attire for the conference including the Welcome Reception.

Information

NAME TAGS

Name tags should be worn at all times during the conference as they are required for entry to all conference sessions and areas. Name badges can be returned to the registration and information desk at the conclusion of the conference.

Name Tag Key:

Delegate – Full Registration – Red

Delegate – Day Registration – Purple

Exhibitor – Black

Speaker – Royal Blue

Committee – Green

ISTM Executive – Light Blue

Accompanying Person – Grey

CATERING

Morning and afternoon tea will be served in Crown Conference Centre pre-function area for the duration of the conference. Lunch is not included in the registration fee and therefore, will not be provided unless attending a lunch symposium. For more information on lunch symposia, please refer to page 7.

CAFÉ SIP

Located in the Crown Conference Centre pre-function area, Café Sip serves a variety of specialty coffees and herbal teas.

RESTAURANTS

Information about a wide variety of restaurants, cafés, bars and theatres can be sourced by visiting the following website www.melbourne.citysearch.com.au.

In addition, visit www.crowncasino.com.au for information on bars, dining and entertainment in the Crown Entertainment Complex.

PEOPLE WITH SPECIAL NEEDS

Every effort has been made to ensure people with special needs are catered for. Should you require any specific assistance, please advise the registration and information desk to enable us to make your stay in Melbourne a pleasant and comfortable experience.

SPECIAL DIETARY REQUIREMENTS

Every effort will be made to accommodate all special dietary requirements but advance notification is required. You will need to make yourself known to a staff member at the various catering times in order to obtain your special meal.

MESSAGES

Messages will be posted on the message board located near the registration and information desk. Delegates are asked to check this board at regular intervals.

MOBILE PHONES AND PAGERS

As a courtesy to presenters and other delegates, please ensure that all mobile phones and pagers are switched off during conference sessions.

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A fully serviced business centre is conveniently located adjacent to the Crown Conference Centre on Level 1 offering hotel and conference centre guests the following (at delegates own expense):

- Internet workstations
- Wireless internet cards at \$25 per day
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- Photocopier
- Facsimile
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- Word processing and printing service
- Equipment hire (mobile phones, data projector, CD players, TV/DVD/VCR players)

CHILD MINDING

Please note that no official arrangements have been made for child care during the conference. Please check with your hotel as they should be able to assist you with child minding services.

EVALUATION

Please help us to improve the conference by completing the evaluation form provided and returning it to the registration and information desk.



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Plenary 1 Travel in the Region

OBTAINING THE DATA FOR EVIDENCE-BASED ADVICE FOR PREVENTION OF INFECTIONS IN TRAVELLERS

G.V. Brown^{1,2,3}, J. Torresi^{2,3}, J. Black^{1,3},
D. O'Brien³, K. Leder³

1 Nossal Institute for Global Health, University of
Melbourne, Victoria 3010

2 Department of Medicine (RMH/WH), University
of Melbourne, Victoria 3050

3 Centre for Clinical Research Excellence in
Infectious Diseases, Victorian Infectious Diseases
Service, Royal Melbourne Hospital

Much of the evidence for providing advice to
travellers is anecdotal, based on presumed
prevalence of various infections and little
knowledge of risk behaviour of travellers.

Our approach has been to document the pattern of
illness in travellers sufficiently unwell to be referred
to a designated centre, with emphasis on patients
requiring hospital admission.

Our data highlight the importance of respiratory
infections, influenza, and diarrheal disease in
returned travellers and the variable presentations of
dengue and malaria.

Plenary 1 Travel in the Region

THE WORLD IS FLAT: TRAVEL AND PUBLIC HEALTH IN THE CONNECTED GLOBAL COMMUNITY

A. Magill¹

1 Walter Reed Army Institute of Research, Silver
Spring, Maryland, USA

The marked increase in both the magnitude and
speed of international travel in the past 50 years
has led to a significant concern over the
introduction of otherwise exotic infectious diseases
into home countries by ill travelers. Because of the
modern global economy, many things travel
besides human beings. Pathogens and insect
vectors can also easily travel around the world in
hours. Travelers can often be the sentinel cases
detected by ever increasing sophisticated
surveillance and response networks. Although the
fear that rapid international travel will lead to
destructive pandemics; ironically, it may be the
near instantaneous transmission of information, an
improved understanding of pathogenesis, and
stunning investigative feats may make the
connected global community safer than our
colleagues of a hundred years ago could have
imagined.

Plenary 1 Travel in the Region

CHALLENGES FOR TRAVEL HEALTH

R. Steffen¹

1 Division of Epidemiology and Prevention of
Communicable Diseases, WHO Collaborating
Centre for Travellers' Health, Institute for Social
and Preventive Medicine, University of Zurich,
Zurich, Switzerland

The role of travel health is to keep travellers,
particularly those going to destinations with
suboptimal hygienic standards, alive and healthy.
This effort goes far beyond tropical medicine and
infectious diseases. Considering environmental risk
factors we must acknowledge that e.g. for divers
and high altitude trekkers physiology needs to be
accounted for. Increasingly, senior citizens, persons
with pre-existing disease, pregnant women or
families with small children request travel health
advice. In such an interdisciplinary field with often
complex host factors all health professionals need
a particularly broad education.

As far as possible advice to travellers should be
evidence based. Most importantly, up-to-date
epidemiological features must be known or readily
available. Otherwise it is impossible to set the
correct priorities for a specific environment at the
destination.

In prevention, there are four pillars: Information,
reduction of exposure, immunoprophylaxis, and
prophylaxis by medication — and all four have their
challenges. Some travellers, be it for ignorance on
health risks or intentional negligence, do not seek
any information. On the other hand, travel health
advisors must not overload their customers with
irrelevant details or create inappropriate anxieties.
It is beneficial, some even say essential, that those
offering travel health advice have extensive travel
experiences. The travellers' lack of compliance with
recommendations relating to vaccination, behaviour
abroad, and prophylactic medication results in
illness, accidents and even fatalities which could
be avoided. It is an arbitrary decision to what
extent a traveller wants prevention. Increasingly,
the cost of vaccines and medication results in
limitations.

Illness abroad may become a problem in many
ways. Many customers will appreciate to get a
well-equipped travel kit, e.g. to cope with
travellers' diarrhoea, the most frequent health
problem abroad. Many would include also imported
diseases under the heading travel medicine — we
don't see those only in returning travellers, but
even more so in migrants and refugees, who may
at times be a huge public health challenge.

Symposium 1
Inhalations, Ingestions and Indiscretions

RESPIRATORY TRACT INFECTIONS IN INTERNATIONAL TRAVELLERS

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¹ Victorian Infectious Disease Service, Royal Melbourne Hospital, Victoria, Australia

² Department of Epidemiology and Preventive Medicine, Monash University, Victoria, Australia

Respiratory infections are reported to occur in up to 30% of all travellers and are the second most common cause of illness in travellers behind gastrointestinal infections. Studies which have assessed the frequency of respiratory symptoms and specific respiratory diagnoses among travellers will be reviewed, and risk characteristics associated with acquisition of specific types of respiratory infections will be discussed. There will be a focus on influenza, which is among the most important of all respiratory pathogens and is potentially vaccine-preventable. As evidenced by the SARS outbreak and the threat of an influenza pandemic, preventive measures both to protect individuals and to minimise global transmission of etiologic agents of respiratory illness are extremely important. Diagnostic and therapeutic considerations of returned travellers with respiratory illnesses will also be addressed.

Symposium 1
Inhalations, Ingestions and Indiscretions

NON-DIARRHEAL FOOD BORNE DISEASES IN TRAVELLERS

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Food and water borne diseases are the most common illnesses seen in travelers.

The most prevalent of these diseases is Travelers Diarrhea (TD), which may affect from 30-70% of travelers to endemic areas, particularly to the Indian sub-continent. TD can be a marker for non-hygienic conditions in these regions of the world, and therefore other food borne illnesses may well be prevalent in the same regions. Since TD is adequately discussed during Travel medicine meetings, this presentation will focus on Non-Diarrheal food borne diseases.

Three examples will be discussed: viral, bacterial, and parasitic infections, all common in Asia.

The viral disease presented will be Hepatitis E infection, the bacterial infection will be *S. paratyphi* infection, and the parasitic helminth will be *T. solium*, which causes Neurocysticercosis (NCC).

All three of these diseases, although less common than TD, often result in a more severe outcome. Their epidemiology in travelers, preventive strategies to avoid infection, diagnosis and treatment will be discussed.

Symposium 1
Inhalations, Ingestions and Indiscretions

STDs AND TRAVEL

D.B. Russell¹

¹ Cairns Sexual Health Service, Cairns Australia

Travellers have long been known to be at a higher risk of risky sexual behaviour than when at home, but there has not been a large amount of quality research on this subject. Studies undertaken in the 1980s and 1990s looked at sexual behaviour of adults when abroad, and also examined males who had sexual contact with commercial sex workers while overseas, particularly in Asia, South America, and Africa. It was found that condoms were often not used by these men in their encounters.

Increasing travel has also led to the rapid geographic spread of 'new' infections, such as syphilis and the L2b serovar of *Chlamydia trachomatis* (responsible for lymphogranuloma venereum) in the gay communities of Europe, the USA, and Australia, and antibiotic-resistant *Neisseria gonorrhoeae*. These will be discussed.

The backpacker culture in Australia, particularly Far North Qld, will also be examined, with reference to risky behaviours including alcohol and drug-taking, and unprotected sexual intercourse.

Recent evidence strongly suggests that HIV was also initially spread to the USA via Haiti in the late 1960s, and travellers then spread it rapidly to the rest of the developed world. Return to one's country of origin for holidays is a risk factor for acquisition of HIV if that country is one of high prevalence. People living with HIV/AIDS are now living longer, healthier lives, and this may include travel for recreation or work. Physicians who provide pretravel consultation to patients with HIV need to have accurate information as to the patient's immune system status, and be cognizant of issues concerning live vaccines, along with the potential interactions between antiretroviral agents and antimalarial agents. Some countries continue to have legal restrictions that prevent HIV-positive individuals from traveling freely.

Travel Medicine Foundation 1 Vaccines

ROUTINE VACCINE USE IN TRAVELLERS

V. Field¹

¹ National Travel Health Network and Centre, UK

A I M

To increase the understanding of the nature, risk (epidemiology and exposure) and prevention of routinely recommended vaccine-preventable diseases, including tetanus, diphtheria, pertussis, polio, measles, mumps, rubella and influenza.

'The two public health interventions that have had the greatest impact on the world's health are clean water and vaccines'. (WHO)

Immunisation is one of the most important public health initiatives in the last 60 years, improving the quality and chance of life for many worldwide.

A pre-travel health consultation provides an ideal opportunity to ensure that primary vaccination schedules, which form part of a national vaccination programme, are up to date.

Risk assessment may highlight the need for booster doses of routinely recommended vaccines, dependent upon the epidemiology and the likelihood of the traveller to be exposed to infectious diseases at their destination. In resource-rich countries, where vaccine coverage is usually high, the incidence of vaccine-preventable disease may be low and the importance of vaccination less obvious. Travel to resource-poor countries, where vaccine coverage may be variable, can lead to exposure of the non-immune traveller to vaccine-preventable disease. Of the risk management strategies available to the traveller, immunisation remains one of most effective; encouraging appropriate receipt of vaccines is an essential role of the travel health professional.

Travel Medicine Foundation 1 Vaccines

SPECIFIC TRAVEL VACCINES

J. Sisson¹

¹ TMVC The Travel Doctor, Perth

Immunisation of travellers is an important part of comprehensive travel health preparation and should be tailored to the particular traveller. Factors such as destination, duration of stay, likely activities and individual traveller's health, all influence the relevant recommendations.

Very few vaccines are considered compulsory, but Yellow Fever vaccine remains the only compulsory vaccine under current WHO regulations, the new International Certificate of Vaccination or Prophylaxis being in place. Special requirements are in place for those pilgrims on the annual Hajj, where vaccination against meningococcal strains ACWY is compulsory and for some travellers, vaccination against polio is also mandatory.

Recommendations of travel vaccines will then depend on the risk-assessment, in particular, the likelihood and consequence of acquiring the disease.

Vaccines for food and water transmitted diseases of hepatitis-A and typhoid fever are commonly prescribed, whereas vaccination against cholera is not required for most routine travellers. Cholera vaccine has a role in protection against ETEC traveller's diarrhoea.

Protection against hepatitis-B is high through vaccination, and frequent and long-term travellers are at higher risk.

Rabies is transmitted by animal bites, and protection can be provided by vaccination and appropriate post-exposure treatment. Pre-immunisation offers some strong benefits to travellers.

Select travellers may be recommended meningitis ACWY, especially those to known transmission places. Similarly, destination and activity specific factors will determine if vaccination against Japanese B encephalitis or tick-borne encephalitis are recommended.

Other factors to influence recommendations may include costs, availability, time constraints, interactions and side-effects of vaccination. These issues are discussed.

Symposium 2 Wilderness and Remote Medicine

ISSUES IN WILDERNESS MEDICINE

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² Department of Neonatology, Royal Children's Hospital, Melbourne, Australia

³ Department of Paediatrics, University of Melbourne, Melbourne, Australia

The number of people engaging in wilderness activities has exploded in the last decade. Increasingly people are traveling to the harshest and most remote places on our planet, such as the high altitudes, polar, jungle and desert regions; mostly using commercial guiding operators. Many of the highest risk locations are in developing countries with poor regulatory and health care systems.

The role of the wilderness, or expedition, doctor is three fold; to prepare and screen expeditioners, to establish risk management systems and to manage unexpected emergencies in the field. Increasing demand creates unique problems that expedition doctors have not had to tackle before. To explore these issues in wilderness medicine the model of climbing Everest in the 21st century will be used. In particular the screening and preparation of a changing demographic and the need to improve quality control, risk management and communication before and during an expedition will be highlighted. By doing so many of the highly public disasters of recent years could have been prevented.

CONCLUSION

The growth of wilderness activities necessitates the need for travel medicine providers to be aware of the specific environmental, logistic and resource issues surrounding these diverse activities. The time has arrived for formal regulatory systems to be established in high risk and high demand wilderness environments. This will require the leadership of governments and key stake holders.

Symposium 2 Wilderness and Remote Medicine

THE ROYAL FLYING DOCTOR SERVICE - OUTBACK AUSTRALIA

S. Margolis¹

¹ Royal Flying Doctor Service, Queensland, Australia

In 1928 the Royal Flying Doctor Service (RFDS) in Australia became the world's first civilian aeromedical retrieval operator and remains the largest and oldest continuously operating service. Founded in remote western Queensland to overcome the 'tyranny of distance' RFDS now operates a fleet of aircraft equipped with intensive care facilities and staffed by flight nurses and doctors. The service provides primary response aero-medical retrieval between rural and remote cattle stations, remote mines, small hospitals and indigenous communities, as well as inter-hospital transfers.

RFDS staff doctors also provide a structured telephone/radio based tele-health program. This runs in conjunction with the Medical Chest program, where a broad range of oral, topical and intramuscular medications are pre-positioned across remote Australia for dispensing. These services are complemented by a range of visiting health care professionals providing on the ground medical, nursing, mental health, allied health and health promotion services.

The RFDS has 22 bases located across Australia, with 50 RFDS owned and operated aircraft and a staff complement of more than 600. A variety of charter aircraft are also utilized on a regular basis. Each day, on average, the RFDS attends 643 patients, performs 202 tele-health consultations, 37 clinics and 91 aeromedical retrievals. The total average daily flight distance is 53,000 km, with an average flight distance of 330km.

To quantify the scope, size and nature of this important health service in remote Australia the detailed findings from a 12 year analysis of the Queensland service will be highlighted.

Symposium 2 Wilderness and Remote Medicine

ANTARCTIC MEDICINE

J. Ayton¹

¹ Chief Medical Officer Australian Antarctic Division Kingston Tasmania

OBJECTIVE

Antarctic medicine is the practice of remote medicine in the extremes of the Antarctic. It brings together domains of general practice, occupational, public health, infectious disease and environmental medicine, aviation, maritime and diving medicine, emergency and retrieval medicine and can demand aspects of all medical specialities.

Increasingly travel medicine providers need to be aware of the extreme nature of the unique Antarctic environment for both Antarctic National program participants and adventure tourists alike. This presentation will describe the medical environment and the necessary limitations of sophistication of medical care and evacuation in Australia's Antarctic Territory.

METHOD

The Australian Antarctic Division has been providing medical support for it's 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!

Country in Focus 1 Papua New Guinea/Oceania

PAPUA NEW GUINEA: DISEASE EPIDEMIOLOGY

H. Karunajeewa¹

¹ School of Medicine and Pharmacology, University of Western Australia, Perth, Australia

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 *Pfalciparum* 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. *Pfalciparum* 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 *Pv* 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.

Travel Medicine Foundation 2 Pre-Travel Management

THE TRAVEL MEDICINE CONSULTATION

A. Gherardin¹

¹ Travel Doctor-TMVC Australia

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.

Travel Medicine Foundation 2 Pre-Travel Management

SPECIAL TRAVELLERS

P. Batchelor¹

¹ Medical Officer, SOS International Clinic, Ho Chi Minh, Vietnam

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.

Travel Medicine Foundation 2 Pre-Travel Management

SPECIAL ITINERARIES

N. Zwar¹

¹ University of New South Wales School of Public Health and Community Medicine, Australia

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 traveler, this trip and this time.

METHOD

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

RESULT

Issues covered in the presentation are the last minute traveler, the frequent traveler, backpacking and long term travel. The presentation will cover issues of providing advice to travelers 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 travelers 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 travelers with special itineraries involves well developed skills in risk assessment and tailoring advice to the traveler, the trip and the time.

Workshop 2 Cases in Pre-Travel

CASES IN PRE-TRAVEL

D.B. Cowie¹, A. De Frey²

¹ Fairfield Travel Health, Royal Melbourne Hospital; VIDRL; University of Melbourne

² Royal Melbourne Hospital

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.

Symposium 3 Regional Challenges in Travel Medicine

REGIONAL TRAINING IN TROPICAL AND TRAVEL MEDICINE

P.A. Leggat¹

¹ Anton Breinl Centre, James Cook University, Townsville, Australia

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 TROPMED 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.

Symposium 3 Regional Challenges in Travel Medicine

HAJJ MEDICINE

Z.A. Memish¹

¹ King Abdulaziz Medical City, King Fahad National Guard Hospital, Riyadh, Kingdom of Saudi Arabia

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 metaphorical. 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.

Symposium 3 Regional Challenges in Travel Medicine

PREPARING FOR BEIJING 2008

S. MacDonald¹

1 Beijing United Family Hospital

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 travelers planning a visit to Beijing in August 2008.

Symposium 4 Travellers Diarrhoea

HOST RISK FACTORS IN TRAVELERS' DIARRHEA AND POST-INFECTIONOUS IRRITABLE BOWEL DISEASE

H. L. DuPont^{1,2,3}

1 University of Texas – Houston School of Public Health, Houston, Texas

2 St. Luke's Episcopal Hospital, Houston, Texas

3 Baylor College of Medicine, Houston, Texas

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 travelers' 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 ($P < 0.001$; 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 travelers 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.

Symposium 4 Travellers Diarrhoea

EPIDEMIOLOGY AND ETIOLOGY OF TRAVELLER'S DIARRHOEA IN SOUTHEAST ASIA

V. Chongsuvivatwong¹, T. Kalambaheti², S. Chariyalertsak³, E. McNeil⁴, S. Aiyarak⁴, S. Hutamai⁵, S. Thithipuree⁶, Z. Jiang⁷, H.L. DuPont¹, R. Steffen⁸

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8 Institute of Social and Preventive Medicine, Zurich, Switzerland

OBJECTIVE

To document the risk and etiologic agents of traveller's diarrhoea (TD) among foreigners visiting a popular SE Asia region.

METHOD

Since there has not been any systematic study on these issues in Thailand, two parallel studies were conducted in two tourist provinces of Thailand, Phuket and Chiangmai, the two most favourite sites of western tourists. In the first study, on one randomly selected day of every week from August 2005 until October 2006, health and lifestyle information was collected from foreign tourists departing from one of two major airports in Thailand. We defined mild TD as the passage of at least one unformed stool. Moderate TD was defined as the passage of 1-2 unformed stools within 24 hours with at least one of the following five symptoms: nausea, vomiting, abdominal pain/cramps, fever, blood in stool, or 3 or more unformed stools without additional symptoms. Classical TD was defined as the passage of 3 or more unformed stools with at least one of the aforementioned symptoms. In the second study, using the same definition of TD, cases were ascertained in an international hospital in Phuket. Rectal swabs and stool examinations were carried out.

Symposium 4 Travellers Diarrhoea

PREVENTIVE STRATEGIES AGAINST TRAVELERS' DIARRHEA

R. Steffen¹

¹ Division of Epidemiology and Prevention of Communicable Diseases, WHO Collaborating Centre for Travellers' Health, University of Zurich, Switzerland

There are three fundamental options to prevent infectious diseases including travelers' diarrhea: to reduce exposure, chemoprophylaxis, and immunization — all three can be considered to reduce the risk and/or impact of travelers' diarrhea (TD).

TD is caused by a broad number of enteropathogens, which are ingested with contaminated food and beverage items. Logically, avoidance of 'dangerous' items should reduce the risk of illness, but according to a recent review evidence is missing that such self-discipline is effective. Also, it often is not easy to be careful with diet abroad.

Various drugs have been suggested for chemoprophylaxis. Bismuth subsalicylate is only modestly effective and side-effects, such as black tongue and black stools are occasionally disturbing, although not serious. Among antibacterial agents, trimethoprim-sulfamethoxazole, doxycycline and others are considered obsolete because of antimicrobial resistance by prevalent enteric bacterial pathogens. Antimicrobial resistance has now also become an increasing problem with widespread use of fluoroquinolones and fear of systemic reactions has limited the prescription of such medication. Poorly absorbed antibiotics, now mainly rifaximin are far more attractive. In contrast, prebiotics and probiotics have shown no or limited protective efficacy. Overall, travelers in a majority of countries are reluctant to take daily prophylactic medication.

The whole cell/B-subunit (WC/BS) cholera vaccine has repeatedly been shown to prevent TD caused by LT-ETEC strains, possibly even by other pathogens. Similarly, a new heat labile LT-ETEC transcutaneous patch vaccine has been effective beyond just LT-ETEC. If such vaccines are recommended, it is paramount to underline that the protective efficacy is far from complete and that TD may still occur en route.

In conclusion, currently no optimal prophylactic option can be offered against TD, with rifaximin probably being the most effective one. However, this agent is not marketed on a worldwide scale. For the foreseeable future most persons venturing into the tropics and subtropics will need to employ early self-therapy of travelers' diarrhea as a strategy for reducing morbidity from enteric disease. In the more distant future, selected chemotherapy and immunotherapy are likely to play important preventive roles.

Country in Focus 2 India/Nepal

COUNTRY IN FOCUS – NEPAL

P. Pandey¹

¹ CIWEC Clinic Travel Medicine Center, Kathmandu, Nepal

OBJECTIVE

At the end of the session, participants will know the geographic features, climatic conditions, major attractions for tourists who visit Nepal. Participants will learn about common medical conditions in travelers to Nepal that will help health care providers prepare travelers for prevention and self treatment of common medical conditions.

Participants will be familiar with immunization recommended for travel to Nepal and for malaria prophylaxis for certain itineraries. Availability of medical resources including medical evacuation and repatriation services in Nepal will also be discussed during the session.

METHOD

Lecture with power point presentation, discussion based on case scenarios

RESULT

Participants will be familiar with major tourist activities in Nepal and common medical conditions seen in travelers so that travelers can be well advised by travel health specialists for prevention and self treatment of common medical conditions prior to the trip.

Knowledge about local medical resources will help the travel health specialist guide a sick traveler to appropriate medical resource while traveling.

Knowledge about common medical conditions will help deal with post travel issues should a traveler return home with an illness.

CONCLUSION

Nepal is a well studied travel destination.

Adventure travel is the most important tourist activity in Nepal. One third of all travelers to Nepal go trekking while a smaller number go rafting and mountain climbing. Bungee jumping, canyoning and paragliding are other activities pursued by tourists. There are several national parks that tourists visit for exotic animal/bird viewing. The capital city Kathmandu is very rich in cultural heritage with many interesting temples where dogs and monkeys reside.

The most important travel related illness in Nepal is gastro-intestinal followed by respiratory, skin and musculoskeletal conditions. High altitude illness, animal bites with risk of rabies, frost bite due to cold exposure are other conditions seen in travelers. Risk of malaria seems extremely low for usual travel itineraries. There has not been a single case of Japanese encephalitis in travelers or expatriates in Nepal although cases occur in locals mainly in the southern belt of Nepal or the Terai and to a smaller extent in Kathmandu in the post monsoon months of August to October. Dengue fever which is the most common cause of fever in travelers to South Asia has only been limited as case reports from the Terai in Nepal. All of these issues will be dealt with during this session.

RESULTS

The risk for mild TD was highest among residents of N. America (4.24%), Europe (4.18%) and Australia-New Zealand (4.0%), followed by East Asia (2.5%), others (2.5%) and SE Asia (1.5%). The corresponding percentages for moderate TD were 7.3%, 8.7%, 10.2%, 3.2%, 4.1% and 2.3%. For classical TD the percentages were 7.5%, 6.7%, 15.7%, 1.6%, 3.6% and 1.6%, respectively. After adjusting for regional susceptibility and duration of stay, stepwise logistic regression revealed the following independent risk factors for classical TD: eating outside the hotel, eating ice cream or meat. In contrast drinking tap water was protective. The stool specimens were collected from foreigner travellers who experienced mild diarrhoea during the year 2006. *Escherichia coli* were isolated from 46 out of 53 samples, and there were 20 TD cases in which pathogenic enteric bacteria were identified. These bacteria included *Aeromonas* spp (7), *Vibrio parahaemolyticus* (5), *Vibrio cholera* (2), *Salmonella* sp. (2), and *Campylobacter* sp. (2).

CONCLUSION

There is a strong gradient in susceptibility among visitors from various regions with Australian-New Zealanders and Europeans being at the highest risk. Etiologic agents identified resembled those seen for TD in other regions of the world. Thailand appears to have a low to moderate risk for acquiring TD.

Free Papers 1 Infectious Disease in Travellers

CUTANEOUS MELIOIDOSIS IN THE TROPICAL TOP END OF AUSTRALIA

K. Gibney¹, B. Currie^{1,2}

1 Department of Infectious Diseases, Royal Darwin Hospital, Northern Territory, Australia

2 Tropical and Emerging Infectious Diseases Division, Menzies School of Health Research, Northern Territory, Australia

OBJECTIVE

Burkholderia pseudomallei is endemic in northern Australia and south-east Asia and melioidosis is a common cause of death in the region.

METHODS

We summarise the cutaneous manifestations of melioidosis from a prospective cohort of 486 patients with culture confirmed melioidosis in northern Australia, and compared those with primary skin melioidosis to those with other forms of melioidosis.

RESULTS

Primary skin melioidosis occurred in 58 patients (12%). Another 10 patients had secondary skin involvement in the form of widespread pustules, presumably a result of bacteremic spread. Chronic melioidosis was more common among those with primary skin melioidosis (odds ratio (OR) 6.35, [3.38, 11.93]). On multivariate analysis, primary skin melioidosis was more common in children ≤ 15 years (adjusted odds ratio (aOR) 8.50 [3.24, 22.28]) and those with occupational exposure to *B. pseudomallei* (aOR 3.12 [1.56, 6.25]). Patients with primary skin melioidosis had fewer risk factors for melioidosis, including diabetes (aOR 0.26 [0.12, 0.56]), alcohol excess (aOR 0.45 [0.22, 0.90]) and chronic lung disease (aOR 0.26 [0.10, 0.67]). The outcomes for primary skin melioidosis were much better than other melioidosis: bacteremia, 2% vs. 61%; septic shock, 0% vs. 26%; and death, 0% vs. 17%; ($p < 0.001$ for each). Three patients with primary skin melioidosis had evidence of secondary abscesses in other organs and another experienced a relapse of melioidosis. Nine patients (16%) with primary skin melioidosis were cured with oral antibiotics alone, and one patient recovered with no therapy.

CONCLUSION

Patients with primary skin melioidosis were younger, had fewer underlying medical conditions and had better outcomes than those with other forms of melioidosis. There may be a role for exclusive oral antibiotic therapy for some cases of primary skin melioidosis.

Free Papers 1 Infectious Disease in Travellers

A REVIEW OF 10 YEARS OF DATA FROM THE AUSTRALIAN DEFENCE FORCE CENTRAL MALARIA REGISTER

N. Elmes¹

1 Research Medical Officer, Army Malaria Institute

OBJECTIVE

To examine the epidemiology and management of over 500 cases of malaria both in the country of infection and on return to Australia from members of the ADF over the past 10 years.

METHOD

Statistical review of the Australian Defence Force Central Malaria Register

RESULTS

In the last decade the Australian Defence Force (ADF) contributed personnel on peacekeeping duties in the malarious endemic countries of Bougainville, Papua New Guinea and Timor-Leste (formerly East Timor). Over 8000 ADF personnel were deployed to East Timor, a further 3,500 to Bougainville and over 1000 to the Solomon Islands during the past 10 years. A consequence of this has been presentation of a significant number of malaria cases.

Malaria attack rates have varied from a peak of 3/100 personnel/month during the initial deployment to East Timor to 0 cases presenting for over one year. 20% of members presenting with *Plasmodium vivax* malaria went on to have relapse despite eradication therapy.

CONCLUSION

There are numerous factors that can reduce the burden of malaria acquired during deployments by ADF members. These include increased vigilance against malaria in countries of deployment and continued surveillance of malaria infections after redeployment to Australia.

Also, the evaluation of higher doses of primaquine to eradicate parasites from the liver and development of new prophylactic drug regimens may lead to improved outcomes.

Free Papers 1 Infectious Disease in Travellers

ENTERIC FEVER IN RETURNED TRAVELERS: A 10 YEAR EXPERIENCE IN A UNIVERSITY TEACHING HOSPITAL

S. Hume¹, J. Torresi¹

1 Royal Melbourne Hospital, Australia

OBJECTIVE

Characterise the presentation, travel history, antibiotic resistance profile, treatment and outcomes of cases of enteric fever presenting to a tertiary referral hospital over a 10 year period. Evaluate the effect of multidrug- and nalidixic acid resistant strains on clinical outcome.

METHOD

Cases from a prospectively collected travel medicine database were analysed.

RESULT

There were 21 and 10 microbiologically confirmed cases of typhoid and paratyphoid fever, respectively; 16 cases were clinically suspected but not confirmed. The vast majority of patients were born overseas, reported recent travel to Asia, and had not received vaccination against typhoid fever. Fever (100%) and headache (51%) were the most common presenting symptoms, while patients with *S. paratyphi* infection experienced more diarrhoea than those with *S. typhi* (60% vs 33%). The white blood cell count was $<10.07 \times 10^6/L$ in 30/35 patients (86%), and the C-reactive protein was $<50 mg/L$ in 9/23 patients (39%). Blood cultures were positive in 22/35 patients (63%) while stool cultures were positive in 10/21 cases of typhoid (48%) and 4/6 cases of paratyphoid fever (67%). Twenty patients had both blood and stool cultures. Five patients had negative blood but positive stool cultures (25%). Three early isolates in the study period were resistant to ampicillin, chloramphenicol and co-trimoxazole while five later isolates were nalidixic acid resistant. Almost all patients were treated with ciprofloxacin alone or in combination with ceftriaxone. There were no clinical failures.

CONCLUSION

The presentation of enteric fever is non-specific and blood and stool cultures have only moderate sensitivity. Nalidixic acid resistance appears to be increasing, however treatment failures have not yet been evident at our institution.

Free Papers 1
Infectious Disease in Travellers

INFECTIOUS GASTROINTESTINAL DISEASE IN RETURNED TRAVELLERS: A GLOBAL PERSPECTIVE

A. Swaminathan, D. O'Brien, A. Wilder-Smith, F von Sonnenburg, B. Connor, E. Schwartz, P. Schlagenhauf, J. Keystone, J. Torresi for the GeoSentinel Network

OBJECTIVE

To describe the aetiology and epidemiology of infectious gastrointestinal disease (IGD) in international travellers who have presented to GeoSentinel clinics worldwide.

METHOD

We analysed all data recorded in the GeoSentinel database between September 1996 and December 2005 for returned travellers who had travelled in the previous 6 months and had had at least one final diagnosis ascribed.

RESULTS

Of 25,867 patients recorded in the database, 7,442 (28.8%) had an IGD diagnosed. The mean age of travellers with IGD was 35.2 years, and 49.1% were male. The ten most frequent IGD aetiological isolates were: *Giardia* (28%), *Campylobacter* sp (13%), *Entamoeba histolytica* (13%), *Shigella* sp (6%), *Strongyloides* (6%), non-typhoidal *Salmonella* sp (5%), *Dientamoeba fragilis* (4%), *Ascaris* (4%), *Salmonella typhi* (3%) and Hookworm (2%). The rate of acquisition of specific IGD pathogens varied significantly between geographic regions of travel. Travelling for more than 30 days was associated with significantly less likelihood of presenting with an IGD than if travelling for a shorter time (OR 0.88). Travelling for the reason of 'Visiting Friends and Relatives' (VFR) was significantly less associated with IGD acquisition than other common reasons for travel.

CONCLUSION

IGD is a leading cause of morbidity in travellers crossing international borders. This study demonstrates the wide diversity of aetiological agents implicated, geographic differences in their rates of acquisition and host-related risk factors that are at play.

Free Papers 1
Infectious Disease in Travellers

BLOOD DIAMONDS – ALL THAT SHIMMERS IS NOT...

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- 5 School of Pathology, University of the Witwatersrand, Johannesburg, South Africa
- 6 National Health Laboratory Service, Johannesburg, South Africa

INTRODUCTION

Malaria is the commonest immediately life-threatening disease posing a risk to non-immune travellers of all ranks on the African continent. Malaria is also the most commonly over-diagnosed illness in the indigenous population and in travellers on the continent. This in itself poses a threat to the traveller's health and well-being in that potentially treatable diseases such as some of the Viral Haemorrhagic Fevers, HIV/AIDS and Schistosomiasis are overlooked.

HIV/AIDS is common but mostly unacknowledged or untreated in South African blue collar workers, Schistosomiasis occurs all over the world and is endemic in large parts of Africa, yet not often diagnosed in returning travellers.

METHOD

The authors review three cases of Katayama Fever in two clusters from different parts of the African continent that presented with fever, initially diagnosed as malaria and subsequently as Pyrexia of Unknown Origin. We discuss the various clinical and laboratory presentations, the differential diagnosis based on the geographical spread of disease in the areas in which the patients lived and worked and eventual diagnosis, management and outcomes.

RESULT

Katayama Fever was diagnosed and successfully treated in all three patients. The confirmed laboratory diagnosis of the first two cases raised clinical suspicion in the third case, aiding diagnosis.

CONCLUSION

Health care workers who take care of travellers returning from many parts of the world, including the African continent need to consider the acute presentation of Schistosomiasis in their differential diagnosis for PUO. Early diagnosis and correct treatment can substantially reduce patient misery in the short to medium term and severe chronic morbidity and even mortality on the long run.

Plenary 2
Emerging Infectious Disease in our Region

ARBOVIRUSES IN THE ASIA-PACIFIC REGION

J.S. Mackenzie¹, D.T. Williams¹

- 1 Curtin University of Technology, Australian Biosecurity CRC, Perth, WA

A number of mosquito-borne viruses which have been associated with human disease are enzootic in the South-East Asian and Western Pacific regions, including 11 flaviviruses, 5 alphaviruses, and several rhabdoviruses and bunyaviruses. There are seven major flavivirus pathogens – the four dengue serotypes and the three members of the Japanese encephalitis serological complex, Japanese encephalitis, Murray Valley encephalitis, and West Nile viruses, as well as a further three flaviviruses which have been associated with mild human disease, including Sepik, Zika, Kokobera, and Edge Hill viruses. The other known flaviviruses including Tembusu, Jugra, Stratford, New Mapoon and Alfay viruses, have not been found to cause overt human or animal diseases, although many of them have been shown to infect humans subclinically.

It is well established that some members of the Japanese encephalitis serological complex have a propensity to spread and establish in new geographic areas, as demonstrated by West Nile virus in North America, Usutu virus in Central Europe, and Japanese encephalitis virus most recently in the Torres Strait of northern Australia. Dengue viruses have also been shown to spread readily through viraemic travelers. Most recently, Zika virus has emerged unexpectedly on the island of Yap in the Federated States of Micronesia. Novel flaviviruses have also been described, the most recent being New Mapoon virus in northern-eastern Australia, a member of the Kokobera serological group.

Other important pathogens are the alphaviruses, Ross River and Barmah Forest viruses in Australia, chikungunya virus in south-east Asia and the Indian subcontinent, and Me Tri virus in Vietnam, and the rhabdovirus chandipura virus in India.

These various mosquito viruses will be described and discussed, especially in terms of disease risk in travelers.

Plenary 2 Emerging Infectious Disease in our Region

BATS AND NOVEL ZOONOSSES

H. Field¹

¹ Biosecurity Queensland, Department of Primary Industries & Fisheries

OBJECTIVE

Nearly 75% of all emerging infectious diseases that impact or threaten human health are zoonotic. The majority have spilled from wildlife reservoirs, either directly to humans or via domestic animals. Bats comprise almost 2% of all mammalian species on earth, and are abundant, diverse and geographically widespread. Not surprisingly then, a large and diverse collection of viruses has been identified in bats over time, but most were not known to transmit from bats, or to cause disease in humans. However, in the last decade or so, bats have been identified as the origin of a number of major emerging zoonoses – agents including SARS-like coronaviruses, henipaviruses, Ebola and Marburg viruses, and novel lyssaviruses. Factors such as global travel, agricultural expansion, deforestation/habitat fragmentation, and urban encroachment underlie an increasing likelihood of contact between bat populations and human and livestock populations, and thus increased opportunities for spillover events to occur.

METHOD

Nipah virus and SARS emergence provide good case studies.

RESULT

The emergence of Nipah virus in Malaysia in 1998 was associated with the encroachment of commercial pig farms into forested areas. Once the virus spilled from its natural bat host into the immunologically naïve pigs, high pig and farm densities facilitated the rapid dissemination of the infection locally. The movement of pigs for sale and slaughter in turn led to the rapid spread of infection to southern peninsular Malaysia, where the high-density, largely urban pig populations facilitated transmission to humans. More recently in Bangladesh, the epidemiology appears to be entirely different. Identifying the factors associated with the emergence of SARS in southern China in 2003 requires an understanding of the ecology of infection both in the natural reservoir and in secondary market reservoir species. A necessary extension of understanding the ecology of the reservoir is an understanding of the trade, and of the social and cultural context of wildlife consumption.

CONCLUSION

Emerging infectious diseases originating from wildlife populations will continue to threaten public health. Mitigating and managing the risk requires an appreciation of the connectedness between human, livestock and wildlife health, and of the factors and processes that disrupt the balance.

Plenary 2 Emerging Infectious Disease in our Region

AVIAN INFLUENZA AND THE POTENTIAL FOR A HUMAN PANDEMIC

M. Catton¹

¹ Director, Victorian Infectious Diseases Reference Laboratory

Avian influenza strains have been central to the origin of pandemics of human influenza, some of the most severe disease outbreaks experienced by the world's population. It is believed that the devastating 1918 influenza A (H1N1) pandemic, which killed approximately 40 million, was caused by an avian influenza strain which became efficiently transmissible between humans. The less severe pandemics of 1957 (influenza A (H2N2)) and 1968 (H3N2)) appear to have involved recombination between avian and human influenza viruses.

Influenza A (H5N1) is the most serious prospect of a new potential pandemic strain to have arisen in decades. This virus first emerged to infect humans in Hong Kong in 1997 causing 6 deaths. Since 2003 it has reemerged to spread widely among avian populations, and by October 2007 has caused 333 laboratory confirmed human cases with a mortality rate of approximately 60%. Although some countries have eradicated the virus from poultry, its continuing spread and evolution amongst birds in many countries suggests that elimination of this avian reservoir of H5N1 may not be possible.

Two of the three requirements for a human pandemic are fulfilled with respect to this virus: the global population is immunologically naïve, and the virus is infectious for humans. Efficient human to human transmission has not been observed so far, however; infection thus far being transmitted almost exclusively from birds to humans. The determinants of efficient human transmission are being intensively studied but as yet are incompletely understood. One important factor is the absence of the preferred receptor for the current H5N1 viruses (alpha 2-3 sialic acid) from the human upper respiratory tract. Receptor preference of the 1918 H1N1 pandemic strain is thought to have changed from alpha 2-3 to alpha 2-6 sialic acid present in the human upper airway during its early transmission through human populations.

Understanding of the evolution of pandemic influenza strains remains too imperfect to accurately predict the risk or timing of a pandemic caused by influenza A (H5N1). However it is almost certain that a pandemic due to a novel influenza virus will occur before long, and that the potential consequences may be devastating. This is the rationale for current intense efforts to develop response strategies.

Symposium 5 Migration Health

INFECTIOUS DISEASES AND NUTRITIONAL DEFICIENCIES IN IMMIGRANTS AND REFUGEES

B.A. Biggs^{1,2}

¹ Department of Medicine, University of Melbourne
² Victorian Infectious Diseases Service, Royal Melbourne Hospital

OBJECTIVE

To review common infections and nutritional deficiencies in recent immigrant and refugee groups and discuss diagnostic and management issues.

CONCLUSION

Undiagnosed infectious diseases such as TB, hepatitis B, schistosomiasis, strongyloidiasis and other soil transmitted helminths are relatively common in many immigrants and refugees due to a high prevalence in their countries of origin and transit, the chronic nature of the infections, as well as a lack of previous comprehensive health care. Similarly, these groups may have nutritional deficiencies including vitamin D, vitamin A and iron. There is growing awareness of the need to conduct health screening in these groups and to provide optimal treatment and follow-up.

These and other conditions will be discussed in this presentation, with a focus on diagnostic and management considerations.

Symposium 5 Migration Health

REFUGEE HEALTH IN AUSTRALIA

M. Smith¹

¹ NSW Refugee Health Service

OBJECTIVE

To give an overview of the policy context, health issues and health services available for those of refugee background who settle in Australia.

CONCLUSION

Historically, countries of the Asia Pacific region have both produced, and hosted, significant refugee movements. Refugee issues are thus highly relevant to health professionals working in the region. Australia and New Zealand are two countries in the region with dedicated settlement programs for refugees.

This presentation will describe the Australian immigration and health policy contexts in which this happens, the profile of recent refugee arrivals, health issues encountered, and health services available to help meet their physical and psychological needs. It will highlight desirable characteristics of services that care for refugees, and flag guidelines and other resources that can assist doctors and other health professionals in Australia with caring for this marginalized subset of the population.

Workshop 3 Pre-Travel Issues in Malaria

PRE-TRAVEL ISSUES IN MALARIA

A. Magill¹, D. Mills²

¹ Walter Reed Army Institute of Research

² The Travel Doctor Brisbane/
Travel Medicine Alliance

This workshop will give an overview of the current tools we have for malaria prevention. We will also touch on the new tools that are on the horizon. We will outline the factors that should be considered when protecting travellers from both vivax and falciparum malaria and then look at some specific examples using case studies.

Symposium 6 Issues for the Travel Community

BEACH AND OUTBACK – ISSUES FOR INBOUND TOURISM

I. Bauer^{1,2}

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² School of Nursing, Midwifery and Nutrition,
Townsville, Australia

Australia receives over 5 million international visitors a year, more than half of whom are holiday makers. Natural attractions, especially the beaches, the outback, the unique wildlife, and an extensive choice of outdoor activities appeal to a wide range of tourists. However, these attractions can sometimes prove dangerous. Almost 400 overseas visitors per year die when in Australia, while the number of those falling ill or sustaining injuries is unknown. The majority of deaths occur due to natural causes followed by car crashes and drowning. Other accidents, such as animal attacks or exposure to the elements, homicide and suicide complete the list. Some reasons for fatal car crashes are fatigue, not wearing seat belts, and the failure to keep on the left side of the road. In coastal and beach areas, fatalities are linked to swimming in unsupervised areas, water sport activities, and encounters with animals. In the outback, the misjudging of distances, and the harsh climatic conditions cause harm to hikers and motorists. Relatively few travel health websites provide Australia specific information. Travel health advice for travellers to Australia should extend to advice regarding the specific risks relating to climate, wildlife, touristic activities and driving.

Symposium 6 Issues for the Travel Community

THE SPREAD OF POLIOMYELITIS VIA INTERNATIONAL TRAVEL: A TEST CASE FOR THE INTERNATIONAL HEALTH REGULATIONS?

A. Wilder-Smith¹

¹ National University Singapore

Eradication of poliomyelitis is near. But – perhaps not surprisingly for our increasingly globalised world – the major obstacle to polio eradication appears to be international spread via travelers, be it pilgrims, refugees, traders or tourists. Re-introduction of wild polio virus to previously polio free countries occurred in the years 2003–2006.

The Global Polio Eradication Initiative successfully decreased the number of polio cases worldwide from an estimate of over 350,000 in more than 125 countries in 1988 to about 2,000 reported cases in 9 countries in the year 2002. Data presented at the meeting of the Advisory Committee on Poliomyelitis Eradication (ACPE) in October 2006 highlighted what hindered further success since then. Between 1 January 2003 and 10 October 2006, 68 separate importation events of wild polio viruses (WPV) affected 24 previously polio-free countries, resulting in more than 1400 cases globally. The origin of these importations were India and Nigeria, two of the four countries that have never completely interrupted transmission of WPV and represent the main remaining reservoirs of WPV. In 2005, the very year that WHO had set as deadline for global eradication of polio, there were 1979 cases in 16 countries – the highest number of countries affected for many years. Globally US\$ 450 million in external funding was spent to bring these importation events under control.

The priority strategy obviously remains interruption of transmission in endemic countries. But in the final spurt to eradicate polio are additional drastic actions needed to limit international spread? ACPE proposed a strategy to protect polio-free countries from re-introducing WPV by vaccinating travellers FROM endemic countries travelling to polio-free countries. The rationale is similar to that for yellow fever, the only disease currently designated under the International Health Regulations (IHR 2005) for which proof of vaccination may be required for travellers as a condition of entry to a country. The polio resurgence via international travel is certainly a test case for the revised IHR.

ASID Symposium 7 Malaria

CLINICAL ISSUES OF MALARIA IN OUR REGION

S. Krudsood¹, P. Wilairatana¹

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Clinical manifestations of malaria are non-specific and range from asymptomatic to severe. The clinical presentations reflect complex interactions among the host, the environment and the parasites. Signs and symptoms include fever, headache, muscle pain, abdominal pain, anorexia, nausea, vomiting, hepatosplenomegaly, jaundice and dark urine. In uncomplicated malaria, these signs and symptoms could not differentiate from common cold, influenza or other systemic diseases. Fever and malaise in malaria are believed to result from the release of endogenous cytokines (e.g. interleukin 1, 6, and 8 (IL1, IL6, and IL8) and tumor necrotic factor- α (TNF- α)) in response to parasite antigens. Other signs and symptoms of malaria are also associated with the rupture of parasitized red cells. In severe malaria, the clinical manifestations included cerebral malaria, pulmonary edema, renal failure, anemia, and jaundice. Signs and symptoms of cerebral malaria are as follows: alteration of consciousness, coma, disconjugated eye balls and convulsion. Among 274 well defined cerebral malaria patients, 129 patients (47%) had fits during the illness, 27 patients (10%) had hypoglycemia and mortality rate was 74%. Among fatal cases, 80% died within the first 48 hours of admission while the rest, death resulted from complications such as acute renal failure, pulmonary edema, bacterial infection, and lactic acidosis. 52% of the survivors had completed recovery.

ASID Symposium 7 Malaria

PRE-TRAVEL MALARIA CHEMOPROPHYLAXIS AS A MEANS OF INCREASING TRAVELLER COMPLIANCE

G.D. Shanks¹

¹ Australian Army Malaria Institute, Enoggera QLD

OBJECTIVE

Although highly efficacious forms of malaria chemoprophylaxis currently exist, many travellers to malaria endemic areas fail to use them effectively. Most travellers developing malaria after return to their home country have been taking no medication rather than an imperfect one. Improved compliance and thus effectiveness might be obtained if chemoprophylaxis regimens could be devised such that the traveller completes taking anti-malarial medications prior to travel.

METHOD

Data exist indicating that a treatment regimen of antimalarial drugs could protect persons for up to one month of exposure.

RESULT

When atovaquone/proguanil (Malarone®, GSK) was used in the very high transmission area of western Kenya in 1997, the first asymptomatic blood infection was noted 35 days after medication and most infections did not appear until well into the second month. Blood stage parasite challenge infections in Australia have been confounded by drug action duration by atovaquone/proguanil persisting for over a month. Volunteer studies have shown that atovaquone can inhibit both mosquito stages and blood stages of malaria for 6 weeks after drug administration. Long-acting medications such as tafenoquine and piperazine may be additional candidates for pre-travel malaria chemoprophylaxis. This approach needs further evidence that could be generated by deliberate trials to determine the efficacy of pre-travel malaria chemoprophylaxis in previously unexposed persons and its duration. Use of pre-exposure malaria chemoprophylaxis would not necessarily require the development of new drug regimens. Existing treatment schedules which already have large bodies of safety and tolerance data would be used. The proposed reversal of indications, using malaria treatment regimens for chemoprophylaxis, would require additional studies in defined traveller populations but could be adopted without extensive regulatory changes.

CONCLUSION

Pre-travel malaria chemoprophylaxis could be very useful in travel medicine and deserves further clinical trials.

VIVAX MALARIA IN OUR REGION

N. Anstey¹

¹ International Health Division, Menzies School of Health Research and Royal Darwin Hospital, Darwin, NT, Australia

Almost 40% of the world's population is at risk from *Plasmodium vivax*, resulting in an estimated 132 – 391 million clinical infections each year. Most of these cases originate from South East Asia and the Western Pacific. Direct and indirect costs are conservatively estimated to be between \$1.4-4 billion each year. Chloroquine resistance is rising, particularly in Indonesia, PNG and in parts of India, with treatment failure rates of up to 95% in Papua, Indonesia. Chloroquine should no longer be first-line therapy for vivax malaria acquired in our region. Newer artemisinin-combination therapies (ACTs) are efficacious against multidrug-resistant *P. vivax*, including artemether-lumefantrine, the sole ACT registered in Australia. *P. vivax* in Indonesia and the Pacific is characterised by primaquine tolerance, and adherence with a total dose of 6 mg/kg primaquine is required to reduce risk of relapse. Although often regarded as causing a benign and self-limiting infection, there is increasing evidence that the overall burden and severity of disease from *P. vivax* have been underestimated. In southern Papua, a region with established high-grade chloroquine resistance to both *P. vivax* and *P. falciparum*, *P. vivax* is associated with a wide spectrum of disease (predominantly severe anaemia, but also respiratory distress and coma) and considerable morbidity and mortality particularly in young children. The impact of *P. vivax* needs to be re-examined elsewhere where chloroquine resistance is increasing. Progress in reducing the burden of disease will require improved access to reliable diagnosis and effective treatment of blood-stage and latent parasites, vector control strategies and more detailed characterisation of the epidemiology, morbidity and economic impact of vivax malaria.

INDONESIAN HEALTH SYSTEM – PROBLEMS & SOLUTIONS

R. Tomlins¹

¹ DFAT, Australian Embassy, Jakarta, Indonesia

The Indonesian Health System has enormous structural problems compounded by a huge population, administration difficulties with the large number of islands, inadequate funding, large numbers of impoverished people, inadequate numbers of health workers, mal distribution of health resources, inadequate health facilities, endemic tropical diseases and a government struggling with a change to democracy. Solutions depend largely on funding from the private sector which will further skew health service availability to the higher income sector.

VECTOR BORNE

M. Haditsch¹

¹ Elisabethinen Hospital Linz and TravelMedCenter Leonding/Austria

OBJECTIVE

Only few vector-borne diseases (VBDs) (like Yellow fever, tick borne encephalitis, Kyasanur forest disease and Japanese encephalitis) are so-called vaccine-preventable diseases. Raising awareness about ways of transmission and basic knowledge about vectors and their geographical distribution as well as their biting habits and means of protection in travelers seems crucial to decrease morbidity (and in some cases mortality, too).

The most important disease of this group without doubt is malaria. Since so many presentations in this conference are dedicated to this disease this presentation will be focused on other non-vaccine-preventable VBDs.

METHOD

Despite the fact that arthropod bites themselves as well as contact with animals resulting in toxic and/or allergic (skin) reactions already provoke symptoms and therefore could be addressed as VBDs (in a broad sense) and other direct and/or indirect contacts with animals are linked with diseases like schistosomiasis or leptospirosis and therefore could be included as well the general understanding is that VBDs (sensu strictu) are diseases caused by infectious agents transmitted by arthropods.

Insects, ticks and mites are potent vectors, in terms of the variety of pathogens ticks being most important. The usual ways of transmission is either via a blood meal or via auto-inoculation of pathogens excreted by an arthropod.

Transmission cycles are based on the three factors 'pathogen, vector and host', environmental factors (most important climatic conditions) having a huge impact. This is also reflected by the changing epidemiology based on global warming and changing seasonal patterns (e.g. rainfall).

Some pathogens can only be transmitted by very specific vectors thus confining endemic areas of certain VBDs.

RESULT

Avoiding exposure – although frequently neglected – is an excellent option to decrease the risk of VBDs. This can be achieved by many ways: use of repellents, impregnation of clothing, style of dressing (colour, shape), sleeping conditions (properness, air condition, use of (impregnated) mosquito nets?), personal behaviour (outdoor activities), etc.

As proven by scientific investigations there is a substantial difference in between products advertised as repellents. Icaridin and DEET in detail have shown high repellent activity (partly lasting up to 8 hours). Pyrethroids/permethrine are effective compounds as well.

abstracts

CONCLUSION

Although there are many various species (insects, ticks and mites) feeding on human blood (partly transmitting viruses, bacteriae and parasites) and only few vaccines against VBDs on the market, adherence to specific recommendations to avoid exposure results in a substantial decrease of attack rates, transmission of pathogens and clinical disease, respectively. Although time consuming it therefore seems mandatory for travel medicine practitioners to raise the specific awareness in travelers and to instruct them in detail on effective and feasible preventive measures.

Travel Medicine Foundation 3 Non-Vaccine-Preventable Diseases of Travellers

DVTS, ALTITUDE, MOTION SICKNESS AND JETLAG

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1 Travel Clinics Australia

2 Monash University

Travel medicine is not just about vaccinations and infectious disease. The significant increase in international travel over the last 2 decades has highlighted the need to become familiar with the many non-infectious illnesses that may affect any traveller. This presentation reviews common issues focusing on DVTs, altitude, motion sickness and jet lag.

DVTS

The overall risk of significant VTE is low, and more likely to be associated with immobilization rather than air flight per se. On currently available evidence, the risk is likely to be increased with prolonged flights (more than 8 hours duration), but especially in the presence of other risk factors. It is, therefore, important for medical practitioners to screen intending travellers for additional clinical risk factors in order to offer appropriate preventive advice.

ALTITUDE SICKNESS

Travellers of all ages are increasingly accessing high altitude areas. It is important for medical practitioners to advise their patients on minimising problems associated with high altitude. Acute mountain sickness may range in presentation from mild through to severe symptoms, and is responsible for a number of deaths each year. The symptoms and severe forms especially are preventable, providing one is aware of the key issues.

MOTION SICKNESS

Motion sickness is a common disorder and medical practitioners are frequently asked about management. The cause is generally considered to be a mismatch of vestibular and visual sensations. Appropriate management includes education, awareness of preventive strategies and recommendation of appropriate medication.

JET LAG

Jet lag is the term used to describe the symptoms associated with rapid transmeridian travel across multiple time zones. The symptoms are differentiated from those of travel fatigue in that they occur with travel across time zones, rather than with flights of the same length but along the same meridian. The symptoms of jet lag can be ameliorated to an extent by manipulating 'zeitgebers' or external synchronisers, and the use of appropriate medications.

Free Papers 2 General Issues in Travellers and Immigrants

VITAMIN D DEFICIENCY IS ASSOCIATED WITH TUBERCULOSIS (TB) AND LATENT TB INFECTION AMONG IMMIGRANTS FROM SUB- SAHARAN AFRICA

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OBJECTIVE

Vitamin D deficiency and *Mycobacterium tuberculosis* (MTB) infection are common among African immigrants to Western countries. While an association between vitamin D deficiency and tuberculosis (TB) has been reported in other populations, little is known about the association between low vitamin D levels and latent TB infection (LTBI) and TB in this population.

METHODS

A retrospective clinical audit was conducted of sub-Saharan African patients attending the infectious diseases outpatient clinics of the Royal Melbourne Hospital between January 1, 2003 and June 30, 2006.

RESULTS

Of 375 patient records reviewed, 276 had TB status and 191 had serum 25(OH)-vitamin D levels (25(OH)D) documented. 152/276 patients (55%) had LTBI and 73/276 (26%) had TB or past TB. Moderate or severe 25(OH)D deficiency (≤ 25 nmol/L) was present in 81/191 (42%) patients. Lower geometric mean 25(OH)D levels were demonstrated in those with LTBI compared to those without MTB (37.3 vs. 54.6 nmol/L, $p=0.007$), and in those with TB/past TB compared to LTBI (16.1 vs. 37.3 nmol/L, $p<0.001$). The relationship between TB status and 25(OH)D level was assessed in a multivariate binary logistic regression model, in which higher 25(OH)D levels were associated with lower probability of any MTB infection (OR=0.31 [0.18,0.53] per doubling of 25(OH)D, $p<0.001$), and among those with MTB infection, higher 25(OH)D levels were associated with lower probability of TB/past TB compared to LTBI (OR=0.41 [0.19,0.91] per doubling of 25(OH)D, $p=0.001$).

CONCLUSIONS

Vitamin D deficiency is strongly associated with MTB infection in African immigrants and lower 25(OH)D levels are predictive of TB/past TB. Clinical trials are required to determine if vitamin D supplementation protects against MTB acquisition, and/or progression from LTBI to TB.

Free Papers 2
General Issues in Travellers and Immigrants

A LONGITUDINAL OBSERVATIONAL FOLLOW UP STUDY OF SCHISTOSOMIASIS SEROLOGY IN AUSTRALIAN TRAVELLERS AND IMMIGRANTS

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OBJECTIVE

Schistosomiasis is a common parasitic infection often diagnosed on serology testing but there is little data regarding the use of follow up serology post treatment. The aims of this study were to analyse the changes in schistosomiasis antibody titres over a 36 month period after effective treatment with praziquantel.

METHOD

A retrospective observational cohort study of patients presenting to the Victorian Infectious Diseases Service was performed between July 1995 to December 2005. Serology was performed at baseline and at subsequent visits and grouped to serology performed within 3, 6, 12, 18, 24, and 30+ months.

RESULT

Sixty eight patients were included of whom 30 (44%) were travellers and 38 (56%) were immigrants. The median baseline antibody titre was 256 (range 32 – 16,384) and 53 (79%) patients had at least one follow up serology performed. The study showed that serology performed in the immediate 3-6 months after effective treatment had increased in 36%, decreased in 43% and remained unchanged in 21%. When serology was repeated at 12-18 months, without re-exposure or re-treatment, serology had increased in 8%, decreased in 75% and remained unchanged in 17%.

CONCLUSION

The results of this study show that repeating Schistosomiasis serology within the first 6 months after praziquantel treatment is not a useful follow up test with titres often found to be increasing compared to baseline. In contrast serology performed at 12-18 months may be a more useful follow up test for determining treatment success since it demonstrates more consistently a falling titre.

Free Papers 2
General Issues in Travellers and Immigrants

MYCOBACTERIUM TUBERCULOSIS INFECTION ASSOCIATED WITH TRAVEL: USE OF THE QUANTIFERON-TB GOLD TEST

T. Radford¹, J. Rothel¹

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The risk of *M. tuberculosis* infection in travellers to high-endemicity countries, is substantial and of similar magnitude to the average risk for the local population, with the risk increasing with length of travel. Guidelines and practices differ worldwide, but it is common for a tuberculin skin test (TST) to be considered for health care professionals, long stay travellers (> 1 month) and those working in high-risk situations (e.g. refugee and transit camps), both before and after exposure.

Until recently, the TST has been the only test for latent TB infection (LTBI). However the TST has a number of limitations, most significantly its poor specificity in those BCG vaccinated and the logistic and time problems associated with people having to return 3 days later for their test to be read. Utility of the TST for travel medicine is further limited when BCG (re)vaccination has been employed as a preventative measure for those travelling to high endemic situations.

Recently, interferon- γ release assays have been developed, which are highly specific for *M. tuberculosis* infection and, unlike the TST, are not adversely affected by BCG vaccination or exposure to most non-tuberculosis mycobacteria. QuantiFERON-TB Gold In Tube (QFT) is approved by the US FDA many other national regulatory bodies and is recommended by the US CDC as an alternative to the TST for all applications. QFT measures cell-mediated immune responses in whole blood stimulated with three *M. tuberculosis*-specific proteins (ESAT-6, CFP-10, and TB7.7), which are not produced by the BCG organism. Numerous clinical studies have demonstrated that QFT is highly specific (~99%), unaffected by BCG vaccination status, and has a sensitivity of ~90%. The test only requires one patient visit and results are generally available within 24 hours.

A review of the clinical performance characteristics of the QFT test will be presented and discussed in relation to the use of the test for screening high-risk travellers.

Free Papers 2
General Issues in Travellers and Immigrants

HEPATITIS B SEROLOGICAL PATTERNS AMONG SUB-SAHARAN AFRICAN IMMIGRANTS

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OBJECTIVE

The isolated core antibody serological pattern refers to the detection of antibodies to the hepatitis B virus (HBV) core protein (anti-HBc) without detection of the HBV surface antigen (HBsAg) or antibodies to HBsAg (anti-HBs). We report the HBV serological patterns among a group of immigrants from sub-Saharan Africa, where the prevalence of chronic HBV is 78%, to Australia, where the estimated prevalence chronic HBV is <0.5%.

METHODS

A retrospective clinical audit was conducted of sub-Saharan African patients attending the infectious diseases and hepatitis outpatient clinics of the Royal Melbourne Hospital between January 1, 2003 and June 30, 2006.

RESULTS

A total of 383 patient records were reviewed. The isolated core antibody HBV pattern was identified in 35/174 (20%) patients tested, of whom only 1/35 (3%) had detectable serum HBV DNA. Another 38/174 (22%) had chronic hepatitis B infection (HBsAg detected). Resolved HBV infection (both anti-HBs and anti-HBc detected) was identified in 45/174 (26%). One third of patients tested (56/174, 32%) had no serological evidence of HBV exposure (negative anti-HBc), of whom only 8 (14%) had serological evidence of vaccination (detectable anti-HBs). HIV infection was detected in 26/197 (12%), HCV antibodies were detected in 10/241 (4%), of whom 8 (80%) had detectable HCV RNA. Infection with more than one of these three viruses was detected in only two patients.

CONCLUSIONS

The isolated core antibody HBV pattern was encountered commonly among African patients attending the infectious diseases and hepatitis clinics of a Melbourne Hospital. There is very little information regarding the prevalence of this pattern among patients who emigrate from a high-endemicity country. We review the literature and provide management advice for this group of patients.

Free Papers 2 General Issues in Travellers and Immigrants

THE TASMANIAN SHORT COURSES IN EXPEDITION MEDICINE

E. Albert¹, P. Scott¹

1 General Practice Training Tasmania

OBJECTIVE

This paper describes and evaluates a new suite of Expedition Medicine short courses that have been developed in Tasmania by General Practice Training Tasmania and Drysdale Institute, TAFE Tasmania.

These courses are a response to the increasing role that doctors are playing in a range of expedition or wilderness settings, including commercial trips, and the hitherto lack of specific training available in Australia. They have also been a response to the desire of outdoor professionals to acquire a higher level of medical knowledge and skills for more remote expeditions.

METHOD

Three eight day courses, that are unique in Australia, have been developed to teach both medical professionals and outdoor professionals a range of skills in field medicine and search and rescue. The courses cover the theory of responding to medical problems in wilderness areas and a range of practical skills. Scenarios are used to allow participants to apply these skills, and the scenarios increase in complexity as the course progresses. Each course has its own theme: marine and water-sports, winter skills, and mountain medicine and vertical rescue. Teaching on relevant medical topics is provided. The courses are evaluated using a mixture of focus groups and post-course questionnaires.

RESULT

Evaluation demonstrates that these courses are enjoyable and provide high quality relevant training. The scenarios provide a realistic environment in which to apply newly learnt skills. The mix of medical and non-medical professionals works well.

CONCLUSION

The short courses in Expedition Medicine are meeting a hitherto unmet need for both medical and non-medical professionals in an enjoyable and relevant manner.

Symposium 8 Risks

BIOLOGICAL WARFARE, BIOTERRORISM AND TRAVEL

A.G. Robertson¹

1 Western Australian Department of Health

OBJECTIVE

The biological warfare capabilities of state and non-state actors continue to grow worldwide, both in sophistication and breadth. This presentation aims to look at the current threat to the traveller from these agents.

RESULT

This presentation looks at the historical use of these agents, the growing threat of the use of biological agents by both national programs and non-state actors, the possible agents which might be considered for use, the potential risks to travellers, and the role that travel medicine specialists may have in protecting civilian populations against such weapon attacks in the future.

CONCLUSION

Between 6 and 10 nations, including North Korea, are either actively pursuing or possess biological weapons for use against their enemies. There is also a heightened interest in such agents by terrorist groups. As a group, travel medicine specialists have a dual role of both informing potential travellers of the risks and providing expert advice to the health community on biological agents of concern.

Symposium 8 Risks

THE SAFETY AND SECURITY OF TRAVEL

M. Shaw¹

1 Worldwide Travellers Health and Vaccination Centres

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

This presentation seeks 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 psychologically, 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.

Symposium 8 Risks

DIVING IN THE PACIFIC REGION

R. Walker¹

¹ Defence Health Services, Australian Defence Force, Australia

OBJECTIVE

The South West Pacific region is renowned for some of the best diving sites in the world and attracts many visitors, both young and old who wish to dive. Many undertake their first certification dives whilst on holiday and others, attracted by the mysteries of the deep perform 'technical dives' using mixed gas rebreathers or multiple tanks containing different gas mixtures.

In Australia and New Zealand all divers require a dive medical prior to undertaking diving training which is at odds with practices in the United Kingdom and United States. Some authors argue that lawn bowls is a more dangerous sport than scuba diving whilst others state it is associated with significant risk.

This presentation will discuss the role of the medical practitioner and the diving medical, common diving ailments and their management in remote locations.

Colloquium for New Vaccines in Travel Medicine and International Health

PHASE 3 ADULT CLINICAL TRIALS FOR IMMUNOGENICITY, SAFETY AND TOLERABILITY OF A NEW SINGLE-DOSE, LIVE, ATTENUATED VACCINE AGAINST JAPANESE ENCEPHALITIS

J. Torresi¹ on behalf of the JE-CV study group

¹ Department of Medicine, Royal Melbourne Hospital/Western Hospital, University of Melbourne

OBJECTIVE

Concerns over mouse brain derived Japanese encephalitis (JE) vaccine have increased calls for new vaccines to combat this important disease. As part of the development of an innovative single-dose vaccine against JE (developed by Acambis as ChimeriVax™-JE, now licensed to sanofi pasteur), a phase III efficacy study was carried out to assess its immunogenicity compared to the JE vaccine currently used in Australia, US and Europe (JE-VAX®). A large-scale, placebo-controlled safety study was also performed to fully characterise the safety and tolerability of the new vaccine.

METHOD

820 subjects were enrolled in the efficacy study: 410 subjects received a single dose of the new JE vaccine and 410 subjects received 3 doses of JE-VAX®. In the safety study, 1,601 subjects received the new vaccine and 403 subjects received placebo. To assess immunogenicity, neutralising antibody titres against JE were measured on serum samples obtained pre-vaccination and 14, and 30 days post-vaccination. All adverse events (AEs) recorded throughout the study periods were analysed to determine the safety profile.

RESULT

30 days post-vaccination, a significantly higher proportion of subjects seroconverted after a single dose of the new JE vaccine (99.1%) than after three doses of JE-VAX® (74.8%) clearly establishing the non-inferiority of the new vaccine. Furthermore, statistical superiority of the new vaccine was shown in an intent-to-treat population. The immune response elicited by the new vaccine was rapid, with 93.6% of subjects seroconverted only 14 days after vaccination. The proportion of subjects reporting drug-related AEs in the efficacy study was significantly lower with the new vaccine (67.6%) than with JE-VAX® (82.2%). In the safety study, the incidence of drug-related AEs was similar between the new vaccine (52.0%) and placebo (50.6%).

CONCLUSION

A single-dose of the new JE vaccine provided rapid protection and very high seroconversion rates at least equivalent to three doses of the current vaccine and with fewer safety concerns.

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.

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.

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.

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.

Colloquium for New Vaccines in Travel Medicine and International Health

LONG TERM IMMUNOGENICITY AND SAFETY OF THE JAPANESE ENCEPHALITIS VACCINE IC51. UNCONTROLLED PHASE 3 FOLLOW-UP STUDY UNTIL MONTH 12

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BACKGROUND

Vaccination against Japanese Encephalitis Virus (JEV) is the most important measure to prevent infection among residents of and visitors to endemic areas. A second generation vaccine, based on the purified, inactivated JEV strain SA14-14-2 adjuvanted with aluminium hydroxide, is in late stage development by Intercell AG. Recently completed Phase 3 studies IC51 induced high levels of JEV specific neutralizing antibodies, as assessed by the plaque reduction neutralization test (PRNT) four weeks after the primary immunization regime.

METHODS

This follow-up study is a multi-center (4 sites, 3 countries), prospective trial to investigate the longevity of the immune response to IC51 until Month 36. 298 healthy male and female subjects were enrolled who had previously completed one of the two preceding pivotal phase 3 studies and received either JE-VAX®, IC51 or Placebo according to protocol. All subjects were assessed for the 6M immunogenicity and 181 subjects continued to 12M (intent-to-treat population only).

OBJECTIVES

The objective of this study is to investigate the immunogenicity of IC51 6, 12, 24 and 36 months after the first vaccination with IC51. Further objectives are safety of IC51 6 months after the first immunization and frequency of vaccination related adverse events (AEs) during the study period.

RESULTS

6 months after the primary immunization, SCR in the IC51 group was 95% compared to 74% for JE-VAX® and GMT in the IC51 group was 84, compared to 34 for JE-VAX®. 12 months after the primary immunization with IC51, SCR in the IC51 group was 83%, with GMT of 41. IC51 was well tolerated and the nature of AEs reported from 2 to 12 months after the first vaccination was consistent with those previously reported for vaccine studies. Up to month 12 no AEs (N=180) were considered to be treatment-related. Most AEs were mild or moderate in intensity.

CONCLUSION

The interim results of this Phase 3 study indicate that the majority of travelers immunized with IC51 will have Japanese Encephalitis virus neutralizing antibody titers above the protective level of 1:10 for at least a year. IC51 has a favorable safety profile.

Travel Medicine Foundation 4 Post Travel Management Workshop

SCREENING AND ASSESSMENT OF RETURNED TRAVELERS

D.R. O'Brien¹

- 1 Victorian Infectious Diseases Service, Geelong Infectious Diseases Service, Medecins Sans Frontieres Holland

The presentation will be an interactive session presenting and discussing interesting cases of illness in returned travelers.

Travel Medicine Foundation 4 Post Travel Management Workshop

EMERGENCIES AND TRIAGE

M. Klein¹

¹ Department of Foreign Affairs and Trade,
Australia

Practitioners of travel medicine often provide post travel medical services to their patients. In any busy practice there is a need to triage appointments and deal with emergencies quickly.

Whilst most post travel consultations are for non urgent conditions such as diarrhea and skin problems there are a number of emergencies that need to be dealt with urgently. These conditions range from infections such as malaria which can be rapidly progressive and fatal to conditions such as pulmonary embolus secondary to a deep venous thrombosis that forms during long haul travel. Other emergency situations relate to potentially rabid exposures and risk of Hepatitis B or HIV from sexual assault, blood transfusions, unhygienic needle use either medically or as a result of recreational drug usage and emergency contraception. Other infectious diseases such as meningitis, Japanese Encephalitis, Yellow Fever and bleeding secondary to Dengue can give rise to emergency presentations. Another potential emergency that should never be overlooked is dehydration secondary to vomiting and/or diarrhea in a young child.

In addition there are the normal array of emergency presentations that may just occur at the time of post travel.

Clearly there are medical emergencies that result as a consequence of travel that need urgent attention. Whilst some of these problems will be obvious as emergencies, others may not. The travelers themselves may not even consider their problems to be emergencies.

Travel Medicine Foundation 4 Post Travel Management Workshop

CASE STUDIES OF PARASITIC DISEASE IN RETURNING TRAVELERS

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¹ Department of Microbiology, Faculty of
Medicine, University of Hong Kong

Both specialists in travel medicine and general practitioners often see travelers returning from abroad with problems. Diagnosis depends upon experience and basing a differential diagnosis upon symptoms, signs and basic laboratory results. This is an interactive talk between audience and speaker and the audience is encouraged to answer certain questions which will help to pinpoint the diagnosis. Actual cases of parasitic infestation in travelers returning to Hong Kong from Asia and elsewhere are described. I shall not describe cases in this abstract – to do so would be to give too much away!!!

Plenary 3 Vector-Borne Diseases

CHANGING EPIDEMIOLOGY OF MALARIA IN THE ASIA-PACIFIC REGION

T. Davis¹

¹ University of Western Australia, School of
Medicine and Pharmacy

Malaria remains a major public health problem in the Asia-Pacific region. In South-east Asia, 10 out of the 11 countries have endemic malaria but transmission is mainly hypo- or mesoendemic. Due to the large number of people at risk in these countries, they account for approximately 30% of the global morbidity and 8% of the global mortality due to malaria. Over the last 20 years, the percentage of total cases due to *P. falciparum* has increased from 13% to approximately 50%, and drug-resistant *falciparum* and *vivax* malaria are increasingly reported. Despite this, malaria morbidity and mortality have fallen progressively over the last decade, perhaps reflecting improving economic circumstances. The unstable nature of transmission in SE Asian countries was recently illustrated by epidemics in South and North-east Thailand after almost a decade without any major outbreaks. There are significantly fewer estimated cases in the Western-Pacific region but the at-risk population is only 10% of that in South-east Asia. In addition, the 10 Western-Pacific countries include the Solomon Islands, Papua New Guinea and Vanuatu which have areas of hyper- and holoendemic transmission and, as a consequence, incidence and mortality rates that parallel those in sub-Saharan Africa. A recent report concluded that malaria drug resistance situation in the Western-Pacific region was 'dynamic', reflecting the varying geographies, population mobility and drug policies of member countries. Nevertheless, the progression of resistance to conventional agents including chloroquine and sulfadoxine-pyrimethamine has meant that artemisinin combination therapy is increasingly recommended for cases of treatment failure and, in some cases, as first-line therapy. In both South-East Asia and the Western-Pacific, the World Health Organisation recommends periodic assessment of antimalarial drug efficacy, sharing of efficacy surveillance data and inter-country collaboration as key features of malaria control programmes.

Plenary 3 Vector-Borne Diseases

DENGUE IN INTERNATIONAL TRAVELLERS

A. Wilder-Smith¹

1 National University of Singapore

Dengue is endemic in most tropical and subtropical countries, many of which are popular tourist destinations. The marked geographic expansion of dengue over the past decades is in tandem with increasing reports of travellers suffering from dengue. It is therefore paramount that health care providers have an understanding of the epidemiology and risk, clinical spectrum, diagnosis, management and prevention of dengue virus infections in travellers. For example, whilst most of the literature focuses on dengue in paediatric populations in endemic countries, dengue in travellers is primarily observed amongst adults. Differences in clinical manifestations and severity of the disease between adults and children will be presented.

GeoSentinel is a global network of travel medicine providers. The GeoSentinel surveillance network has noted that in terms of cumulative case numbers over the past decade, dengue has emerged as a more frequent diagnosis than malaria in ill-returned travelers from all tropical regions outside of Africa. Seasonality and annual trends of acquisition of dengue fever were examined in a cohort of 522 returned travellers reported to GeoSentinel over the decade from 1997-2006. Dengue morbidity showed region specific peaks for Southeast Asia (June and September), South Central Asia (October), and the Caribbean (August and October). In Southeast Asia, annual proportionate morbidity, which was 50 per 1000 ill-returned travellers in non-epidemic years, increased to average 159 per 1000 during epidemic years. Dengue cases detected in sentinel travellers to endemic countries at atypical times of year may be a timely indicator of epidemic activity and be complementary to national surveillance systems.

Prevention of dengue in travellers is often more challenging than that of malaria. Increased international efforts are needed to develop a dengue vaccine and antiviral therapy that will benefit the traveller and, most importantly, the endemic population.

Plenary 3 Vector-Borne Diseases

EMERGING ISSUES IN VECTOR BORNE DISEASES

B. Currie¹

1 Tropical and Emerging Infectious Diseases Division, Menzies School of Health Research and Northern Territory Clinical School, Royal Darwin Hospital, Darwin, NT Australia

In the Asia Pacific region malaria, arboviruses and rickettsial infections all continue to cause substantial morbidity and mortality. There are new therapeutic options for malaria which will save lives, especially if access to them can be improved and counterfeit drugs curtailed. New therapeutic options for rickettsial infections have been trialled. A vaccine for dengue remains a priority and the recent withdrawal of the only Japanese encephalitis (JE) vaccine licenced for use in Australia has become a major issue for travel clinics and public health authorities in JE endemic locations.

Changes in the epidemiology of various arbovirus infections show the complexity of drivers for emergence, amplification and spread of these pathogens. Although much has been made of the potential impact of climate change on dengue, human population pressures and movements and international transportation of mosquito vectors have been the critical factors resulting in the current dengue epidemics, irrespective of global warming. Massive outbreaks of chikungunya, some with reported fatalities, have been linked to a mutation in the virus giving it an evolutionary edge over older strains. The inexorable spread of JE virus across southeast Asia with breaching of Wallace's line resulted in JE becoming established in New Guinea. JE virus now spreads to the Torres Strait Islands possibly most monsoonal seasons, and on two occasions incursions have occurred on the Australian mainland. However whether JE virus will become established on the mainland remains uncertain, although the presence of millions of feral pigs as potential amplifying hosts is a major concern.

New arboviruses causing disease will inevitably be identified in our region; either emerging from hitherto unknown cryptic environmental foci or evolving from current known pathogens or being well known pathogens elsewhere which are transported into new locations, as occurred with West Nile virus in the USA. The unusual has to be expected – as occurred with the recent identification of a novel Leishmania species in macropods in northern Australia, with the vector totally unknown and uncertain human health implications.

Symposium 9 Travel Medicine Aspects for Organisations

ISSUES IN EXPATRIATE HEALTH: AGENDA FOR ACTION

A.S. Abdullah^{1,2}

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2 Faculty of Medicine, Chinese University of Hong Kong, Hong Kong SAR

Expatriates frequently travel to and/or reside in remote destinations in resource poor settings, which place them at risk of different health and social problems. When immediate medical care is needed for expatriates and their families, local healthcare are likely to be inadequate, and physicians when available, lack resources to manage complicated medical conditions. Language and cultural barriers also play a role in effective communication and case management.

To address the social and health problems of expatriates and their family members in a foreign country, there is a need for comprehensive pre-travel screening, immunization, preventive education and arrangements for immediate medical assistance from a reliable setting. Based on the country where expatriates will be residing, a customized health protection plan should be designed for each family, which will address their health and social needs. As expatriates behave differently in a foreign country, a comprehensive counseling will also be needed that will address potential behavioral risks including sexual risk taking. The presentation will elaborate cultural, social, behavioral and political aspects in relation to expatriates and their families' health, discuss potential approaches to ensure a disease free stay while abroad.

Symposium 9 Travel Medicine Aspects for Organisations

CORPORATE TRAVEL HEALTH

J. Limpens¹

1 Travel Doctor-TMVC

As markets expand and globalize, the international business traveler finds themselves increasingly in more complex and higher risk work environments around the world. Whilst this international context offers exciting business opportunities, the risks for employees involved in international operations is often quite significant. An employee involved in an incident whilst overseas could result in expensive repatriation costs, or worse, the loss or permanent disability of a valued team member.

All employers assume a substantial level of responsibility for keeping their employees safe while they are at work, whether at home or abroad. However, corporate organizations often have limited policies and procedures in place to mitigate risk in respect to international business travel and overseas operations, and will often look to travel medicine experts for guidance. Safe business travel is not just a matter of good luck, but rather one of good planning. It requires an organization's commitment to safe travel practice, risk management, and pre-departure preparation.

This presentation will discuss the ways in which travel health professionals can assist organizations to implement best practice travel health and safety management procedures, and outline how to comply with OH&S legislation and other obligatory guidelines.

Symposium 9 Travel Medicine Aspects for Organisations

VOLUNTEERS ABROAD

V. Field¹

1 National Travel Health Network and Centre, UK

AIM

To increase the understanding of the particular issues which may affect the health of volunteers, using case studies to highlight key points.

An increasing number of people are volunteering to travel and work overseas. Data on the health problems experienced by this group are relatively scarce. The category of the 'volunteer' includes a wide range of people of all ages, backgrounds and beliefs. Volunteers may be exposed to a range of risks that could jeopardize their physical and psychological health; few volunteers find themselves unchanged by the experience. The impact of a volunteer placement can depend on a number of factors including pre-existing health, previous travel and voluntary experience, the nature, location, timing and duration of the placement, cultural and security issues, access to medical care, and the degree of organisational, financial and emotional support received.

Voluntary organisations have a responsibility to promote health maintenance of their volunteers and vary greatly in the degree to which they provide pre-departure briefings, in-country support and post-assignment reviews. Organisation-specific education and awareness packages, together with a tailored holistic travel health consultation, can help to fulfil the specific needs of both the organisation and individual volunteer.

Additional studies are needed to determine the health problems and health seeking behaviour of this group and to determine how best they should be prepared.

Free Papers 3 Travel Medicine – Epidemiological Research

PAPUA NEW GUINEA DEFENCE FORCE HEALTH SURVEY 2006

A. Ebringer¹, G. Kendino²

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- 2 Papua New Guinea Defence Force Health Services, Port Moresby

OBJECTIVE

To perform a cross-sectional screening survey of members of the Papua New Guinea Defence Force (PNGDF) for vector borne and infectious diseases that have the capacity to cause significant morbidity in urban PNG communities.

METHOD

The trial was conducted with PNG DF personnel from Wewak, Lae and Port Moresby between June and July 2006. 409 soldiers (27% of the PNG army) were tested for malaria parasites (slide and PCR), Dengue, Ross River and Barmah Forest virus antibodies, influenza A and B strains, lymphatic filariasis antigens and rickettsiae. Sputum was collected for acid fast bacilli by slide and culture and all subjects completed questionnaires on basic demographic details, recent illnesses, personal protective measures against mosquito exposure, use of malarial chemoprophylaxis and risk criteria for TB.

RESULT

21% of the subjects screened had malaria parasites in their bloodstream by PCR. *Plasmodium vivax* (62% of cases) was the most commonly seen species with mixed infections accounting for 18% of cases. Rates varied between the different locations reflecting seasonal transmission patterns. Lower rates of infection were not detected in subjects reporting use of personal protection measures or prophylactic drugs. Almost all subjects tested positive to the dengue fever (DF) ELISA antibody test. Ross River and Barmah Forest viral antibodies were present in 49% and 19% of subjects. All sputum specimens were negative for *M. tuberculosis*. Seven subjects were positive for lymphatic filariasis antigen. Influenza titres were consistent with recent patterns in the Australian/Pacific area. Sera from 29 subjects (7.1%) contained antibodies against scrub typhus and a further 83 reacted with other rickettsiae groups.

CONCLUSION

PNGDF soldiers are exposed to a wide range of pathogens and it is likely febrile events are due to illnesses other than malaria parasitaemia. Further studies are required to quantify causes of fever, risk of disease and develop treatment algorithms. Naive travellers to PNG can expect significant exposure to vector borne and infectious diseases, and protection through chemo-prophylaxis, vaccination and personal protective measures should be encouraged.

Free Papers 3 Travel Medicine – Epidemiological Research

HEALTH ISSUES ENCOUNTERED BY DIABETICS ON TRAVEL

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BACKGROUND

Diabetes mellitus is increasing in India. Many diabetics along with their family members or with their peer groups take up travel for recreational purposes.

OBJECTIVE

To identify health issues observed among them during travel, to elicit the precipitating factors, to find out the pre-emptive measures adopted and to determine the measures undertaken to overcome their health problems.

Material and Methods

A total of 150 diabetics belonging to middle income group were interviewed using a pre-tested structured questionnaire which focused on the health issues experienced, probable precipitating factors, pre-emptive measures adopted and measures undertaken to overcome their problems in an anonymous manner. The data was analyzed by simple descriptive statistics.

RESULTS

There were 43 women and 107 men. Their ages ranged from 41 to 63 years. 76 traveled with their family members and the rest with their peers. Among total, 44 missed anti-diabetic pills, 76 were liberal in food habits, six got injured, three had infections and two experienced hypoglycemia. The precipitating factors were long travel, non disclosure of their diabetic status to others and non cooperation. Non disclosure of the diabetic status was noticed in 7 of them who went with their family and 63 who went with their peer group. Self medication and extra dose of anti-diabetic agents were noticed among six and 43 individuals respectively. 64 did not carry their prescribed pills and 94 did not carry their diabetic identification cards with them. Seven got advice from their doctors through phone. One of them exchanged medicines with their colleagues.

COMMENTS

In diabetic health education programs, efforts must be taken to educate the diabetic patients on the dos and don'ts during travel. Privileges should be given to them to contact their doctors or hospitals over mobile, if their permission is obtained before hand.

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SEXUAL HEALTH KNOWLEDGE, SEXUAL CULTURE AND SEXUAL BEHAVIOUR AMONG TREKKING GUIDES IN NEPAL

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OBJECTIVE

There is evidence that significant sexual interaction between travellers and trekking guides takes place in Nepal, but little is known about trekking guides' sexual health knowledge and practices. The main objective of this study was to identify the sexual health knowledge, sexual culture and risky sexual behaviour among male trekking guides in Nepal.

METHOD

A self-administered questionnaire survey (total 324) and in-depth interview (total 21) were conducted among experienced male trekking guides using snowball sampling.

RESULT

Majority of respondents (95.4%) were literate and more than two-third was fairly young and 61% married. About 28% had both Nepali and foreign girl friends. Knowledge about HIV/AIDS was high (97%) comparing to other STIs. Most of the respondents (95.4%) were sexually active and 58.1% had sexual practice before age 18. Nearly two-third had sexual relationship with foreign women. The duration of working as a guide and sexual intercourse was found significantly associated ($p < 0.05$). Nearly two-third (65%) used condoms during the sex with foreign women and only 8% of the respondents believed that they would get HIV from their existing sexual practice. Although knowledge about sexual health issues among trekker guides is high, some misconception and myths still encourage them to perform unsafe sexual practices.

CONCLUSION

Most of the trekker guides have sexual relation with foreign women and irregular use of condoms was common among them. These findings suggest that there is an urgent need to revise the existing training curriculum and training package for trekking guides and implement appropriate health promotion interventions.

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PRELIMINARY RESULTS OF AN AIRPORT SURVEY OF TRAVELLERS: TRAVEL PATTERNS AND INFECTIOUS DISEASE RISKS

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OBJECTIVE

International travel of people has a profound effect on the global epidemiology of infectious diseases. Travellers are not only at personal risk of infection but can act as the vector by which infectious diseases can reach new populations, which can have consequences long after the period of travel. Data on travel patterns and traveller behaviour in relation to the transmission of infectious disease is scarce both within Australia and globally and is not reflective of the volume and widespread nature of modern international travel. A survey of departing passengers aims to describe and quantify travel patterns and traveller behaviour relevant to the importation and spread of infectious diseases into Australia.

METHOD

In August-September 2007, a survey of departing travellers from Sydney International Airport was conducted. The sampling design targeted flights to Asian destinations with passengers being randomly selected for participation. Data on socio-demographics, travel and contact patterns in the two weeks prior to and following departure were collected, as well as health seeking behaviours, vaccination and illness history and possible exposure to illness.

RESULT

Over 800 surveys were completed at Sydney International Airport by passengers departing on flights to Asian destinations. Preliminary analysis of the first 400 of these surveys captured data from persons aged between 18-81 years with 41% Australian citizens/residents. The main reasons for travel were for holiday (40%), visiting family or friends (26%) and business (14%) and 57% of travellers travelled alone. 8% of respondents reported having contact with a person ill with a fever in the past two weeks, with work colleagues and household family members the most likely contacts. 25% of respondents reported themselves to have symptoms of infection, most likely a sore throat, with 12% of respondents having seen a doctor in the previous two weeks for any reason and 58% in the past year. When asked about health-seeking behaviour related to this trip, one third of respondents reported seeking the advice from health professional and one third of respondents reported seeking other sources of travel health information.

CONCLUSION

The full survey of over 800 passengers departing Australia will also be supplemented by 180 surveys of passengers departing Thailand for Australia and will provide updated and useful data to describe the social and behavioural patterns of Australian travellers and visitors departing Australia. On the basis of the first 400 surveys analysed, the demographics of the sampled travellers are similar to those described in ABS. Additional data on disease risks and health-care seeking behaviour provides new insights into the health-related behaviours of the general travelling population.

INVESTIGATION OF FEBRILE PASSENGERS DETECTED BY INFRARED THERMAL SCANNING AT AN INTERNATIONAL AIRPORT

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OBJECTIVE

Fever detection using infrared thermal imaging has shown promise for improvement of biosecurity, particularly with regards to detection of dengue fever in travelers. North Queensland is susceptible to dengue outbreaks and there is interest in using this tool to lessen risk. Investigation of febrile passengers is currently only mandatory for suspected quarantinable diseases. We set out to in this study to examine whether voluntary participation in fever investigation was a practical alternative. The specific aim of the study was to determine the best approach for the evaluation of fever, detected by infrared thermal scanning, at an international airport.

METHOD

Arriving passengers with fever were divided into 3 groups comprising community evaluation by a general practitioner, with or without cost compensation, or evaluation at the airport by a health practitioner. Uptake of offered evaluations was measured, diagnoses were recorded, and region specific rates of fever measured. Observations were made on practical aspects of thermal screening.

RESULT

181,759 passengers were screened for fever over a six month period at the Cairns international airport, Queensland, Australia. Fever was identified in 118 (0.06%) of the arriving passengers and 76 were enrolled in the study. Only 19 of these passengers (25%) voluntarily underwent further evaluation. No differences were observed in the three approaches.

CONCLUSION

Public Health surveillance of febrile passengers arriving at an international airport should not rely on voluntary passenger participation for the detection of imported contagious diseases.

WHAT WOULD YOU LIKE TO ENJOY EATING IN JAPAN? SUSHI, SASHIMI, OR BEAR MEAT?

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In 2005, Japan received up to 7.5 million foreign visitors, of which 850 thousand (11.5%) were from the US and 230 thousand (3.1%) from the UK. Japan is one of the most developed countries in terms of health issues, with the lowest neonatal mortality rate and the highest life expectancy in the world. The Japanese way of food preparation is characteristic; making the most of raw materials on Japanese dishes is delightfully accepted and could be comparable with the Chinese well-prepared cuisine. Japanese people preferably consume raw foods such as Sushi, Sashimi, raw egg, and raw meat (chicken, beef, horse, and bear), and this may raise a concern among foreign visitors about the risk of contracting infectious diseases, especially parasitic diseases. Because of the strict regulation for food production in Japan, products from domestic animals are almost always safe, whilst those from wild animals may not always be. During this lecture, we will highlight the safety issues of products from wild animals in Japan, including freshwater and seawater fishes, the situation of several infectious diseases that may be of importance to foreign visitors, e.g., scrub typhus, and the vaccination issues for foreign visitors to Japan, e.g., those against measles and Japanese encephalitis. We will also talk on a Japanese research group that could be of significant help to not only Japanese people but foreign visitors if they have contracted a tropical or parasitic disease and need appropriate medical management in Japan.

Country in Focus 5 China/Japan

DESTINATION CHINA: KEEPING TRAVELERS HEALTHY

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China continues to attract more foreign visitors and expatriates each year. In 2006 alone there were 124 million inbound visitors to China. With its population of over 1.3 billion people and vast land area, China offers a variety of travel destinations, each with their own health concerns. This presentation will offer information about the different health issues for the traveler including the risks of travelers' diarrhea, respiratory illnesses, rabies, malaria and Japanese B Encephalitis.

What vaccines should you recommend for travelers? Should you be concerned about Rabies or Japanese B Encephalitis? What is the availability of health services in different areas of China and are medications safe? These are just some of the health issues that face the travel health practitioner. Case scenarios will be presented to highlight some of these health concerns and to add insight to the problems encountered by the different types of travelers to China.

Symposium 11 Health Issues for Children

INFANTS AND CHILDREN AT ALTITUDE: AIR TRAVEL AND ACUTE MOUNTAIN SICKNESS

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There are no known reports in the medical literature of healthy newborn infants experiencing medical consequences resulting from air travel. At the usual cabin atmospheric pressure of commercial jetliners the arterial blood oxygen saturation of healthy infants is about 92 to 94%, slightly higher than that of healthy older children and adults, a level that healthy infants appears to tolerate well. However, infants with histories of premature birth or perinatal cardiopulmonary problems – even infants otherwise asymptomatic – may desaturate significantly from these oxygen concentrations. Such infants should be medically cleared for air travel.

Air travel appears to be safe for infants experiencing upper respiratory infections, nasal allergies, and ear infections and for infants with ear aerating tubes. Feeding infants more frequently during flight than at other times does not prevent earaches or dehydration, and may be counterproductive. In flight dehydration is a myth. At cruising altitudes, air in the stomach and intestines expands by 20%, the result of lower atmospheric pressure. Encouraging infants to eat/suck unnecessarily adds more air, possibly causing discomfort.

As durations of non-stop flights increase, the physiology of air travel melts into that of acute mountain sickness. Infants and children with unknown and asymptomatic conditions – certain cardiopulmonary pathology and seizure disorders, for example – have had significant symptoms after 18 hours at mountain altitudes at which the atmospheric pressure corresponds to that in cruising aircraft.

Symposium 11 Health Issues for Children

MALARIA PREVENTION IN INDIGENOUS POPULATIONS

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¹ University of Melbourne, Australia

OBJECTIVE

To review current knowledge regarding the indications for, and efficacy and effectiveness of, preventive treatments for malaria in young children and pregnant women living in endemic areas, and to highlight important new preventive strategies currently under evaluation.

METHOD

I have combined a literature review, personal communications with members of the IPTi (intermittent preventive treatment in children) Consortium, and insights from membership of the Malaria in Pregnancy Consortium to provide an overview of different preventive strategies, and to summarise present evidence regarding the efficacy of measures under different settings.

RESULT

Several strategies are presently under evaluation for prevention of malaria in exposed populations. These include insecticide treated materials (ITNs, mainly bed nets); intermittent preventive treatment (administration of regular doses of antimalarials to pregnant women and children at high risk of malaria, through antenatal and immunization clinics); indoor residual spraying (IRS) and vaccines. The evidence supporting ITNs in countries with high levels of malaria transmission is strong, with benefit against malaria-specific and all-cause mortality in children demonstrated in Africa. Here, bed nets also increased birth weight and decreased pregnancy losses. Recently, free distribution of bed nets was shown to substantially reduce child mortality in Kenya, suggesting this to be the optimal method of distribution. In Asia, the evidence is less strong, due in part to different vector behaviour, lower transmission intensity, and a smaller number of studies performed.

IPTi, often with sulphadoxine pyrimethamine, or SP, is emerging as a useful preventive against malaria and anaemia in young children, with several studies showing 25-50% protection. In West Africa, seasonal IPT in school age children dramatically reduces clinical disease. Current studies are examining IPTi in PNG, and examining whether IPT after severe malarial anaemia can decrease mortality associated with this disease. Again, we do not know where IPTi might work in SE Asia. IPTp (in pregnancy) decreases anaemia and improves birth weight in Africa; SP is the only widely used drug, but would not be effective in SE Asia, although it should be in Oceania; studies examining SP IPTp are beginning in PNG and the Solomons. New combinations, including artemisinins, will be tested in the Malaria in Pregnancy Consortium.

Symposium 11 Health Issues for Children

IMMUNOASSAYS FOR THE DIAGNOSIS OF TUBERCULOSIS: A REPLACEMENT FOR THE TUBERCULIN SKIN TEST?

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3 Infectious Diseases & Microbiology Research Group, Murdoch Children's Research Institute

Improved methods for diagnosing both latent TB infection and active TB disease are urgently needed. Interferon gamma release assays (IGRAs) have emerged as potential replacements for the century old tuberculin skin test (TST). These blood tests are commercially available as the QuantiFERON-TB gold In-Tube assay and the T-SPOT.TB assay. These new immunoassays measure interferon gamma released by T cells in response to *Mycobacterium tuberculosis*-specific antigens. These assays have a number of potential advantages over the TST, including the avoidance of interference from previous BCG immunisation. Potential disadvantages include cost, the number of indeterminate tests reported in some studies, and the interpretation of results that are discordant with the TST.

Patients with a positive TST and a negative IGRA have been reported in several studies of latent TB infection, where there is no gold standard for reference. It is still uncertain whether discordance is attributable to IGRAs possessing a higher specificity (detecting false positive TSTs) or whether this is due to TSTs possessing a higher sensitivity (detecting false negative IGRAs). The interpretation of discordant results in clinical practice therefore remains problematic.

Finally, although IGRAs have been shown to have high sensitivity and specificity in adults there are few studies that have assessed their performance for the diagnosis of latent TB infection or TB disease specifically in children.

Travel Medicine Foundation 5 Travel Clinics

SURVEILLANCE AND RESEARCH

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1 The Nossal Institute for Global Health, University of Melbourne

2 NHMRC Centre for Clinical Research Excellence in Infectious Diseases, Victorian Infectious Diseases Service

Travel medicine practitioners increasingly contribute to epidemiological research into the causes, rates, and distribution of disease, through analysis of travellers' experiences of illness. The contributions of recent studies by individual units as well as of global collaborations such as GeoSentinel are presented and analysed in this paper.

The discipline of travel medicine can also make a unique and important contribution to the surveillance of infectious diseases around the world, to the early detection and tracking of outbreaks of disease, and to the global coordination that will be required if the world community is to cope with the threats posed by the combination of rapid air travel and emerging and evolving pathogens. This paper outlines recent developments in global surveillance, and explores ways that travel medicine might make an even greater contribution in the near future.

Of malaria vaccines, some (e.g. MSP1) are proving disappointing, but others, such as RTS-S, may provide worthwhile protection to young children. Several other candidates are entering trials.

In Southern Africa, there has been renewed interest in IRS, and it has contributed significantly to a dramatic fall in malaria cases in South Africa. Application can be resource intensive, and it may not be appropriate in much of this region, where much of the vector contact is out of doors and/or while people are awake.

CONCLUSION

Bed nets and intermittent preventive treatment appear to decrease malaria prevalence when used effectively, and ITNs can decrease child deaths from malaria in Africa. In some areas, IRS may also control disease, and some vaccines have promise. However, differences in vector behaviour and transmission intensity between Africa and the S E Asia/Oceania regions mean that one cannot readily extrapolate from one to the other. More research is needed to determine the optimal preventive strategies for pregnant women and young children within our region.

Travel Medicine Foundation 5 Travel Clinics

ESTABLISHING A TRAVEL MED CLINIC

S. Lau¹

¹ The Travel Doctor – TMVC Melbourne, Australia

The practice of travel medicine seeks to prevent illness and injuries occurring to travellers going abroad, and manages problems arising in travellers coming back from overseas.

The goal of running travel medicine clinics is to provide a comprehensive range of travel medicine services of an international standard, to both leisure/private and corporate/business travellers.

Our task includes, but does not limit to, A) professional pre-travel health preparation and promotion of healthy and safe travel; B) provision of standardised and customised medical kits for individual and corporate travellers to facilitate self treatment of travel related illnesses whilst overseas, disseminate up to date electronic international health alerts, facilitate access to overseas travel medicine professionals as required; C) post-travel care for illnesses contracted overseas and/or screening of tropical diseases upon return. We work in cooperation with national and international health care providers, academic institutions, the travel industry and the media. Moreover, we should advocate and facilitate education, service, and research activities in the field of travel medicine.

Running a successful travel clinic requires a long term commitment of a team of professional colleagues. The team includes travel medicine physicians, practice nurses, and practice managers. We shall look at the profiles of such individuals, and how they may effectively coordinate their tasks. We would explore the resources and equipments we utilize on a daily basis.

Very importantly, we also need to run a commercially viable professional practice. We would look at the general principles of achieving this goal.

Travel Medicine Foundation 5 Travel Clinics

A DESTINATION TRAVEL CLINIC

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OBJECTIVE

Participants will learn about the requisites of a destination travel clinic. They will learn about dealing with pre-travel issues including immunizations, malaria prophylaxis, general health and safety advice to prepare travelers before they leave home or the country of travel. Issues regarding availability and sourcing where in-country resources are inadequate, language and cultural issues will also be dealt with during this session. Participants will learn about resources needed to provide medical care of sick travelers and expatriates. This will also include when and how medical evacuation and repatriation are carried out by a destination clinic such as the CIWEC Clinic in Kathmandu. Participants will learn briefly about how a destination clinic with limited resources can conduct medical research.

METHOD

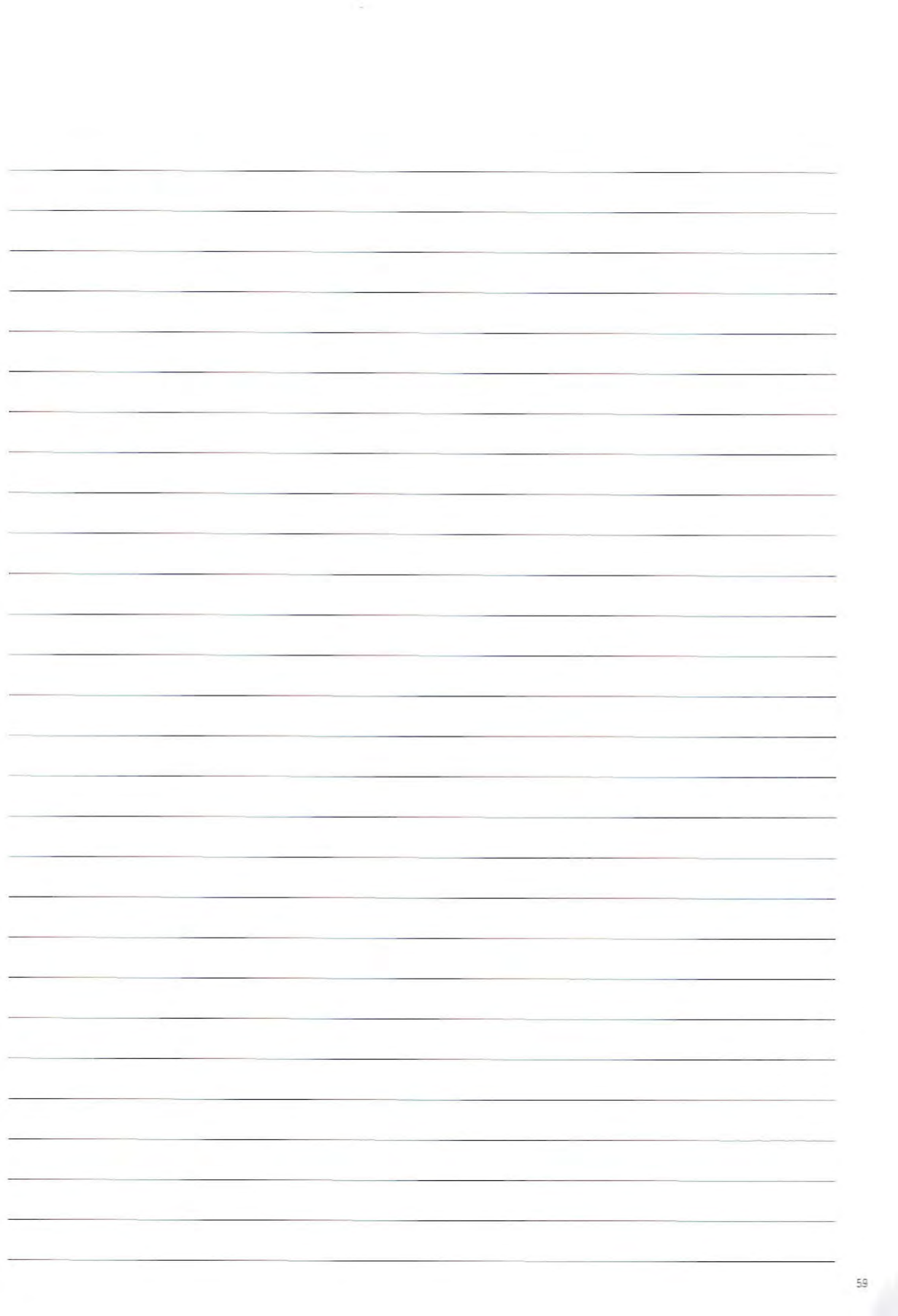
Lecture as power point presentations and case scenario based discussions

RESULT

Participants should be well versed with requisites of a destination travel clinic and be able to set up a destination travel clinic themselves to deal with pre-travel, during travel and post travel issues in travelers.

CONCLUSION

A destination clinic will most likely be taking care of travelers to and from that country and also be taking care of expatriates who reside in that country. Scope of work will encompass pre-travel, during travel and post travel issues as outlined in the objective section. Availability of adequate resources and sourcing in terms of supply of vaccines and other items; marketing, medical translation, dealing with insurance companies on an international level are important issues for a destination clinic. Having a reliable laboratory service is essential to providing good medical care and can generate good income for a destination clinic. A destination clinic should have a list of very reliable referral and network base consisting of the best specialists or hospitals locally and in the region.



Poster Board 1

HEINEKEN AND THE BEIJING OLYMPICS

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OBJECTIVES

To illustrate the benefits of a Health Risk Matrix qualifying the health risks to the impact of people, reputation and/or financial consequences

To show highlights of the Health Risk Assessment as well the control and containment of identified risks will be presented.

To share learnings and experiences with other parties.

METHOD

Heineken is a Netherlands based multinational beer producer who has since the 1992 Summer Olympics been in charge with organising a hospitality venue for the Dutch Olympic team, their supporters and overseas visitors.

Health issues related with organising such a main event were until recently never systematically addressed

To address this a Health Risk Matrix and a standard Health Risk Assessment, an audit tool identifying health risks in major, intermediate and low health risks were used

CONCLUSIONS

All health risks have been identified resulting in medical resource allocation at the venue during the event

Some very specific identified risks need additional attention e.g. smog issue, number of positive Hep B carriers identified in China, rabies

Co operation with local health care providers, preferably in a protocolised way is an exigency

All crew need to receive a comprehensive briefing on local health aspects and will be vaccinated

RESULTS

Heinekens' approach has attracted the interest and co operation of all major Olympic sponsors, the Dutch Olympic Committee and local health care providers

Health can be addressed as any other business issue

The benefits of having on site medical services at hand is fully accepted by management

For the 2008 Summer Olympics in Beijing Health issues are fully integrated in the project set up and roll out.

Poster Board 2

HISTOPATHOLOGICAL FEATURES OF THE KIDNEY IN PLASMODIUM FALCIPARUM MALARIA

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3 Department of Tropical Pathology

4 Mahidol Oxford Research Unit, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand

BACKGROUND

Acute renal failure (ARF) is a common feature of severe *Plasmodium falciparum* malaria. The pathological basis of ARF in falciparum malaria is not well characterized.

METHODS

An autopsy based clinicopathological correlation was performed examining pathological changes in the kidney of 84 patients who died from severe falciparum malaria using light microscopy, transmission electron microscopy (TEM) and double labeling immunofluorescence microscopy. This detailed the histopathological features of *P. falciparum* malaria in the kidney and correlated these with the clinical features of renal function and other complications of severe malaria before death. Parasitized red blood cell (PRBC) sequestration and host leukocyte phenotypes were quantitated, and the release of cytokines and hypoxia inducible factors were examined.

RESULTS

Acute tubular damage was common in this group but no evidence of glomerular basement membrane immune complex deposition was seen. We found evidence of PRBC sequestration in glomerular and peritubular capillaries, significantly associated with acute renal failure ($p < 0.02$). Immunohistochemistry showed a significant increase in endocapillary CD68+ve monocytes ($P < 0.05$) and marked tubulointerstitial host leukocyte responses in malaria patients compared to controls. No evidence was found for monocyte secretion of the proinflammatory cytokines TNF- α , IFN- γ , IL-6, and IL-10 was seen.

CONCLUSION

These results demonstrated that the major pathological feature of falciparum malaria associated acute renal failure was acute tubular injury rather than glomerulonephritis. The significant increase in host monocytes and sequestration of PRBC indicate potential mechanism underlying the pathogenesis of acute tubular injury in these patients, although this is likely to be multifactorial.

Poster Board 3

CURRENT PROBLEMS OF JAPANESE TRAVELERS ON TRAVELERS' VACCINES

K. Ouchi¹ and The Research Group for Improvement on Vaccination to Japanese Overseas Travelers granted by Health and Labor Sciences Research Grants on Emerging and Re-emerging Infectious Diseases

¹ Kawasaki Medical School

OBJECTIVE

The objectives of this research is to evaluate current problems of Japanese travelers on travelers' vaccines.

METHOD

We investigated surveillance data of reported cases in the Japanese infection control law and took a questionnaire survey of 4,005 people, that is 646 outpatients of the clinics in Japan Society outside Japan and 3,359 participants for Japan International Cooperation Agency and Japan Round Doctor Health Consultation Plan. We also took another questionnaire survey for universities and companies in Japan.

RESULT

Our research revealed that many Japanese travelers have got sick due to vaccine preventable diseases such as cholera, typhoid fever, hepatitis A (HVA), and hepatitis B (HVB), based on the surveillance data and the data of a questionnaire survey for 4,005 people. Among 4,005, 6.8% have ever caught 11 vaccine preventable diseases outside Japan. Tetanus has been immunized in 69%, HVB in 66%, HVA in 65%, rabies in 55%, Japanese encephalitis in 34%, typhoid fever in 16%, respectively. However they are tend to be more conscious about vaccine preventable diseases than ordinary Japanese people.

Only 41 (17.6%) of 254 universities corresponded education and consultation about information of foreign countries and immunization to dispatched person although 233 (91.7%) of 254 universities in Japan dispatch their staffs and students to foreign countries. Thirty seven (14.6%) universities experienced vaccine preventable diseases among their dispatched staffs and students.

According to a total of 511 companies in Japan which dispatch staffs to foreign countries, HVA has been immunized to dispatched staffs in only 299 (51.3%) companies, HVB in 262 (51.3%), tetanus in 255 (49.9%), rabies in 113 (31.1%), respectively. Immunization has been done for long stay staffs in 302 (59.1%) companies, for their families in 299 (58.5%), and less frequently for short stay staffs in 180 (35.2%). 242 (47.4%) companies experienced vaccine preventable diseases among their dispatched staffs.

Although Ministry of Health and Labor in Japan recommended to install vaccine center, only 23 (37.1%) vaccine centers have been installed in 47 prefectures and 15 government ordinance cities.

CONCLUSION

Japanese overseas travelers to developing countries need more immunization. We need more enlightenment to Japanese citizens and fill up vaccine centers and travel clinics.

Poster Board 4

STATE OF INFORMATION OF TOURISTS STAYING IN TICK BORNE ENCEPHALITIS (TBE) AND LYME BORRELIOSIS (LB) ENDEMIC AREA

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OBJECTIVE

TBE and LB are transmitted by infected ticks (*Ixodes ricinus*). The diseases are endemic in Central and Northern part of Slovenia with highest morbidity rate from May to October.

In the past five years average number of 261 cases of TBE occurred. In 2003 morbidity rate of TBE was 13,6/100 000 inhabitants and was the third highest among 13 European countries.

In the last five years from 3524 to 4461 cases of LB were reported each year and the morbidity rate varied from 176,2 to 223,5/100 000 inhabitants.

The aim of prospective study was to collect data from tourists staying in TBE and LB endemic area regarding their knowledge about the both diseases and protective measures to avoid them.

METHOD

From beginning of August to the end of September 2007 prospective study was conducted among tourist staying in TBE and LB endemic area. In that case tourists staying in two hotels in the middle of forestry region of mountain Pohorje were asked to fulfill questionnaire. According to their nationality questionnaire was performed in Slovenian, English and German language.

RESULT

From beginning of August to the end of September 268 questionnaire were collected. 196 of 268 respondents were Slovenians and 72 were tourists from seven European countries and USA. 61,4 % were male. Average age of respondents was 42,3 years.

Among 196 Slovenian tourists 131 live in urban areas, which are generally non endemic and 65 tourists come from rural areas, which are generally endemic. From 72 foreign tourists 42 came from areas known as endemic and 30 from non endemic areas. 96,6% of Slovenian residents (71,5% of foreign tourists) had information, that ticks transmit TBE and LB. 72,9% Slovenians and only 21,4% of foreign tourists knew, that they are spending their holidays in TBE and LB endemic region. 93,2% of Slovenians and 64,5% of foreign tourists have knowledge how to protect themselves against tick bite. Only 18,6% of Slovenian tourists (5,2% of foreign tourists) were vaccinated against TBE.

CONCLUSION

Staying in TBE and LB endemic areas without using protective measures represent risk of getting the disease. The most effective measure to avoid TBE is vaccination, while the risk of tick bite can be reduced by using repellents, wearing protective clothes and practicing self-examination after returning from tick habitats.

Our study shows, that effort to inform tourists about risks to get TBE or LB while staying in the endemic areas should be strengthened, especially for tourists coming from non endemic areas.

Poster Board 5

TRENDS IN ANTIMALARIAL PRESCRIPTIONS IN AUSTRALIA 2002-2005

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OBJECTIVES

The aim of this study was to investigate the trends in prescription of antimalarial drugs recommended for chemoprophylaxis in Australia from 2002-2005.

METHODS

In 2007, data was extracted from the online Australian Statistics on Medicines reports published by the Pharmaceutical Benefits Advisory Committee, Drug Utilization Committee, on antimalarials used in Australia for the period 2002-2005.

RESULTS

Doxycycline probably remains the malaria chemoprophylaxis of choice prescribed for Australians visiting multiple drug resistant malarious areas. Over the past 15 years, there has been marked drop in the prescription of less useful antifolate drugs, such as pyrimethamine-containing antimalarial drugs. There has also been a reduction in the number of prescriptions for chloroquine and proguanil, although the downward trend in prescriptions of mefloquine appears to have arrested and has trended upwards. The number of prescriptions for atovaquone and proguanil has been increasing dramatically, particularly since inclusion of this combination antimalarial in the prevailing Australian guidelines. Artemether plus lumefantrine combination is now available, but it is used in relatively small quantities.

CONCLUSIONS

The prescription of the antimalarials proguanil, chloroquine and the pyrimethamine containing compounds has been steadily reducing in number. Prescription of mefloquine trended upwards during 2002-2005, following a period of reducing prescriptions. The atovaquone plus proguanil combination has increased dramatically in use. Trends in antimalarial use may be influenced by a number of factors, including the availability of antimalarials, increasing resistance, the issuing of updated guidelines for malaria chemoprophylaxis, and continuing education.

Poster Board 6

KNOWLEDGE, ATTITUDES AND PRACTICES AMONG FOREIGN BACKPACKERS TOWARDS MALARIA RISK IN SOUTHEAST ASIA

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2 Faculty of Travel Medicine, Royal College of Physicians and Surgeons of Glasgow, UK

OBJECTIVE

Malaria is still prevalent in Southeast Asia where large numbers of backpackers visited each year. This study aimed to assess the knowledge, attitude and practices among foreign backpackers towards malaria risk in Southeast Asia.

METHOD

Questionnaires were administered to foreign backpackers in Bangkok, Thailand. They were asked about their general background, their attitude to malaria risk and their preventive measure against malaria. Their knowledge about malaria was assessed by ten true-false questions in the questionnaires.

RESULT

In total, 434 questionnaires were evaluated. Fifty-five percent of travellers were male and the median age was 28 years old. The main reason for travel was tourism (91%). Almost all travellers (94%) aware the risk of malaria. 22% of them would take antimalarial prophylaxis, 33% would use measure against mosquito bite, but nearly 40% had 'no prevention' at all. Mean knowledge score was only 5.52 of 10. Most backpackers (92%) knew that malaria is a serious disease and sometime fatal, 74% knew that some travellers could develop malaria after they return. However, up to 35% believed that taking dirty food could lead to malaria infection. And 49% believed that malaria could be 100% prevented by antimalarial medication. In backpackers who had traveled in the forest (n=65), only 54% use insect repellent regularly. Among those who had taken antimalarial prophylaxis, nearly 30% had stopped the medication prematurely.

CONCLUSION

Although most backpackers perceive the risk of malaria in Southeast Asia, they have some misunderstandings about malaria and tend to comply poorly with mosquito bite prevention and chemoprophylactic strategies.

poster abstracts

Poster Board 7

THE ROYAL COLLEGE OF NURSING OF THE UNITED KINGDOM (RCN UK) TRAVEL HEALTH FORUM

C. Driver¹, A. Grieve¹, L. Boyne¹, A. Jordan¹, D. Parsons¹, J. Skeet¹, C. Tracey¹

1 RCN Travel Health Forum

Travel Medicine in the United Kingdom is a nurse-led specialty, with services provided mainly in Primary Care, but also in Occupational Health (Industry and the NHS), Armed Services, schools, universities, independent clinics and charitable organisations.

The Royal College of Nursing (RCN) is a professional body for nurses, within which there are 75 Forums supporting the spectrum of specialist areas of practice. Currently membership of the Travel Health Forum (THF) is 5,309 with seven elected nurse members forming the Steering Committee. They have a shared objective to support nurses in the field, to disseminate knowledge, promote education and best standards of practice and influence related National Policies. The poster describes some of the methods used to do this, including the 24 page Newsletter produced biannually, an informative website and well established annual conference. The THF was involved with the organisation and scientific programme for the Northern European Conference on Travel Medicine (NECTM) in Edinburgh in 2006 and similarly with the NECTM2 planned for Helsinki in 2008. The committee acts as a professional source of expert opinion to the RCN and advises on policy and accreditation matters when approached. At RCN Congress the forum gets involved in debates relevant to travel health and supports the RCN international agenda. The forum collaborates with the British Travel Health Association and other RCN forums where fields of practice cross. The Guidance for Practice Document produced in 2005 was the first of its kind available to describe minimum standards of practice for nurses working in the field. Competencies encompassing the skills and expertise required to manage and advise travellers, to promote best practice in patient centred care and to contribute to the health outcomes in UK travellers were developed and published in 2007. The Faculty of Travel Medicine (FTM) established in 2006 at the Royal College of Physicians and Surgeons of Glasgow (RCPSG) was the first Medical College to admit nurses.

Poster Board 8

AUSTRALASIAN FACULTY OF TRAVEL MEDICINE: ACTIVITIES OF A PROFESSIONAL ORGANISATION PROMOTING HEALTHY TRAVEL

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BACKGROUND

The Australian Faculty of Travel Medicine (FTM), was established in 2000 by The Australasian College of Tropical Medicine (ACTM). It aims to provide professional representation for those working in travel medicine in Australasia.

METHODS

The poster describes the major activities of the FTM which include: Faculty membership accreditation to Fellowship level; networking and scientific meetings of the Faculty; publications; development of policies in travel medicine; advocacy and public awareness; representation on external committees related to travel medicine; and a website.

RESULTS

The FTM publishes a feature newsletter, the Travel Medicine Briefcase, twice per year, which is sent to all members of the FTM and the ACTM, as a supplement to the ACTM Bulletin. It has a secretariat supported by the ACTM based at the Australian Medical Association in Brisbane, Australia (email: actm@tropmed.org). The FTM has developed a website: <http://www.tropmed.org/travel/index.html>, where information on the Faculty is provided, and it also hosts information for the New Zealand Society of Travel Medicine. Content and links to the website continue to be enhanced. Membership applications are accepted from doctors, nurses and other appropriate health professionals. The membership requirements for Fellowship are fairly stringent concerning the need for an applicant to be considered a reference person in travel health. There is some flexibility in the academic qualifications required; however a named postgraduate qualification in travel medicine is preferred. The FTM accepts the CTH designation of the International Society of Travel Medicine as an approved examination, as an option to an academic qualification required for Fellowship. The FTM publishes a textbook, now in its 3rd revised edition, through the ACTM, which is called the Primer of Travel Medicine. The FTM is also represented on the Australian Travel Health Advisory Group (URL: <http://www.welltogo.com.au>) and also contributes to scientific meetings, such as the Asia Pacific International Conference on Travel Medicine.

CONCLUSIONS

The FTM provides a useful platform and recognition for those professionals working in travel medicine in Australasia. The FTM is also making a useful contribution to the support of the field of travel medicine. Promotion of membership remains one of the FTM's major activities.

Poster Board 9

THE TASMANIAN EXPEDITION MEDICINE PROGRAM: TRAVEL MEDICINE TRAINING FOR TOMORROW'S GPS

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Registrars in the Australian General Practice Training system are encouraged to undertake Special Skills Posts in order to develop areas of special expertise. The Expedition Medicine Program was set up two years ago by General Practice Training Tasmania (Tasmania's Regional Training Provider that is responsible for the training of Registrars) to provide Registrars with an opportunity to develop skills in travel medicine and wilderness or expedition medicine. It is the first program in Australia to provide training in these fields.

Registrars undertake a six month post based in a travel medicine clinic. Placements are currently available in Hobart and Canberra.

The Registrars follows an on-line curriculum and workbook that is supported by regular tutorials from an experienced travel medicine specialist. In addition Registrars may choose other clinical activities and courses based on their interests and needs. This has included completing a Certificate in Travel Medicine, a diving medicine course, continuing mainstream general practice, up-skilling in emergency medicine, and teaching on Remote Area First Aid courses.

All Registrars attend one or more short courses in Expedition Medicine that provides opportunities to develop practical skills in field medicine.

This paper focuses on the practicalities of setting up and running a travel medicine post from the perspective of the travel physician, the Registrar, and the Regional Training Provider.

Poster Board 10

ABSENCE OF AVIAN INFLUENZA A (H5N1) INFECTION IN JAPANESE TRAVELERS: AN EXPERIENCE AT THE LARGEST TRAVEL CLINIC IN TOKYO

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OBJECTIVE

Avian influenza A (H5N1) has become endemic among birds throughout Asia and sporadic human cases have been occurring. Travelers may play a role to disseminate this infection to other areas in the world. The WHO suspected H5N1 case definition includes acute respiratory illness and a history of close contact with poultry in an area where H5N1 infection in birds has been reported. It remains uncertain that the definition is appropriate for travelers returning from H5N1-affected countries. We prospectively observed to elucidate the epidemiology of influenza in Japanese travelers.

METHOD

Febriile returning travelers with respiratory symptoms, who showed at the Travel Clinic, International Medical Center of Japan, Tokyo, from April 2007 until October 2007, received a rapid antigen test for influenza A and B (ESPLINE® INFLUENZA A&B-N, Fujirebio, Inc., Japan). In cases with positive influenza A by the rapid test and cases with pneumonia, if symptoms developed within 7 days after leaving the affected areas with confirmed cases of H5N1 avian influenza declared by WHO, nasal and throat swabs were sent to the Research Institute, International Medical Center of Japan for further investigation including influenza virus subtypes by RT-PCR and gene sequencing.

RESULTS

There were 169 returning travelers seen at our clinic during the period. Fourteen (8%) patients had fever and respiratory symptoms simultaneously. Five (3%) patients (case-patients), who appeared from July until September, were positive for influenza A by the rapid antigen test and 1 patient returning from India had pneumonia. All the countries the case-patients visited were H5N1-affected: China (2), Vietnam (2), and Laos (1). Symptoms developed during travel in 1 case-patient and within 2 days after leaving H5N1-affected countries in 4 case-patients. None of the case-patients had exposure to poultry during travel. All the samples from the case-patients were negative for H5 and are receiving further analyses. One had a H3N2 isolate which was similar to human influenza A virus strain found outside Japan in 2007. In 3 case-patients, influenza was considered to be transmitted to family members and close friends. There was no epidemic of influenza including H5N1 avian influenza in Tokyo during this period. None of the case-patients received influenza vaccination in the previous year.

CONCLUSION

Travelers are still at low risk of acquiring avian influenza A (H5N1) infection. However, human influenza is a common infectious disease in travelers returning from China and Southeast Asia from July until September. It is easily transmitted to close contacts and has a major impact on public health. Continuous surveillance for influenza in travelers returning from abroad is desperately needed and evaluation of patients with suspected H5N1 infection should be changed accordingly.

Poster Board 11

WHERE YOU WERE BORN MATTERS: THE PREVALENCE AND RISK FACTORS FOR SEXUALLY TRANSMITTED INFECTIONS/HIV FOR LOCAL, MIGRANT AND OVERSEAS FEMALE SEX WORKERS IN HONG KONG

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OBJECTIVE

Sex workers have long been considered as reservoirs and vectors of sexually transmitted infections (STIs) in the community. In Hong Kong, a large proportion of female sex workers (FSWs) are new migrants or illegal overseas workers. This study aimed to find out the prevalence of STIs and HIV among the local, migrant and overseas of FSW and to identify the risk behaviours concerning sexual health

METHOD

Community FSWs were recruited from the outreach team of a non-governmental organisation between 2005 to 2007. Details on their lifestyle and risky behaviour were recorded, together with the cervical smear and blood tests for various STIs and HIV were taken.

RESULT

503 FSWs were screened. 361 (71.8%) of them were new immigrants, 97 (19.3%) were local FSWs and 45 (8.9%) were overseas FSWs. The overall prevalence of hepatitis B surface antigen, syphilis, gonorrhoea, chlamydia, and HIV were 8.5%, 1.8%, 1.8%, 4.4%, and 0.2% respectively. Many more non-local FSWs worked on the street (91.1%), comparing with the other two groups (local: 4.1% and new immigrants: 2.8%). Syphilis (8.9%; Monte Carlo test $p = 0.01$) and gonorrhoea (6.7%; Monte Carlo test $p = 0.02$) were more prevalent among non-local FSWs than local and new migrant FSWs. Non-local FSW were also less likely to have had gynaecological examination and PAP smear tests, but more likely to always use condom when having oral sex with clients.

CONCLUSION

In the interest of public health it is important to identify different STI pattern among different groups of FSWs and, a coherent policy and target specific approach is required to effectively control the spread of STI/ HIV in the community.

Poster Board 12

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

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OBJECTIVE

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.

METHOD

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.

RESULT

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 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.

CONCLUSION

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.

Poster Board 13

HEALTH AND LIFESTYLE OF NEPALESE MIGRANTS IN THE UNITED KINGDOM

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OBJECTIVES

The health status and lifestyle of migrants is often poorer than that of the general population of their host countries. The Nepalese represent a relative small, but growing, immigrant community in the UK, about whom very little is known in terms of public health. Therefore, our study examined the health and lifestyle of Nepalese migrants in the UK.

METHODS

A cross-sectional survey of Nepalese migrants in UK was conducted in early 2007 using a postal, self-administered questionnaire in England and Scotland (n=312), and telephone interviews in Wales (n=15). Data were analyzed to find out an association between socio-economic and lifestyle factors. A multivariate logistic regression was applied to find out independent effect of personal factors on health status.

RESULTS

The majority of respondents were male (75%), aged between 30 and 45 (66%), married or had a civil partner (83%), had university education (47%) and an annual family income (69%) ranging from £5,035 to £33,300. More than one third (39%) of the respondents have lived in the UK for 1 to 5 years and approximately half (46%) were longer-term residents. Most (95%) were registered with a family doctor, but only 38% with a dentist. A low proportion (14%) of respondents smoked but more than half (61%) consumed alcohol. More than half (57%) did not do regular exercises and nearly one fourth (23%) of respondents rated their health as poor. Self-reported 'good' health status of the respondents was independently associated with immigration status and doing regular exercise.

CONCLUSION

The self-reported health status and lifestyle, health seeking behaviour of Nepalese people who are residing in UK appears to be good. However, the overall regular exercise and dentist registration was rather poor. Health promotion, especially aimed at Nepalese migrants could help encourage them to exercise regularly and assist them to register with dentist.

Poster Board 14

CHEMOPROPHYLAXIS OF MALARIA AMONG TAIWANESE INTERNATIONAL TRAVELLERS

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BACKGROUND

Malaria, a protozoan infectious disease transmitted by Anopheles mosquito, is still endemic in most tropical/subtropical areas and causes 300-500 millions infections and 1 million deaths annually worldwide. The eradication of malaria has been maintained for more than 40 years in Taiwan and patients mostly acquired it when having trips in endemic areas. Using personal protection measures and chemoprophylaxis are two main methods for malaria prevention.

METHODS

To understand the basic information, compliance and side effects of people asking for malaria chemoprophylaxis, we evaluated patients who visited our travel clinic in a year (2006-2007) by questionnaire. Their knowledge, attitude and practice will also be analyzed to know where to strengthen on malaria prevention.

RESULTS

Among 211 finished questionnaires, most people are middle-aged adults (age: 20-49: 70%) and the Male/female ratio is 64/36. Top three common travel areas are west Africa, east Africa and south of America (40%, 38%, 9%) and the frequent purpose for travel are working and group trip (55%, 23%) and the average length of trip is 15 days. The most common source of information of malaria prevention is from physicians, CDC website and travel agency (35%, 29% and 27%). About chemoprophylaxis, people concern the convenience of drug usage mostly (85%). About 30% people admitted that they had missed dose more than one a week. The most common reason is due to failure to remember but not due to side effect. 37% users complained having mild to moderate side effects (most are mild). Mefloquine-users have the highest frequency (45%). The most common three side effects are dizziness, diarrhea, and nausea. People mostly understand the risk of malaria and perceive the need for prevention, however, fewer of them implement really.

CONCLUSIONS

This study is the first study in Taiwan to outline the malaria chemoprophylaxis of international travelers. People concern the convenience of taking chemoprophylaxis and the main reason of missing dose is forgetting it. Nearly 40% people complained that they had discomfort after taking chemoprophylaxis although mostly were mild. We should increase the communication with travel agency and physicians to strengthen the knowledge of malaria prevention, broaden the service of travel clinic service and consider the need of another more convenient and less side effect drug to diminish the barrier of chemoprophylaxis.

Poster Board 15

TO BCG OR NOT TO BCG? PREVENTING TRAVEL-ASSOCIATED TUBERCULOSIS IN CHILDREN

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OBJECTIVE

Global tourism is increasing rapidly: in the first three months of 2007 tourist arrivals rose by more than 6% worldwide. The highest increase in arrivals was recorded in South Asia (12%), Southeast Asia (9%) and Northeast Asia (9%). The high prevalence of tuberculosis (TB) in most of the countries in these regions represents a potential threat to travellers' health. The risk of an individual traveller acquiring TB depends on several factors that include the age of the traveller, the local TB prevalence, the duration of travel and the degree of contact with the local population. Children are at particular risk of severe disease following exposure to TB and may benefit most from BCG immunisation.

CASE REPORTS

We describe three non-BCG immunised children that presented with travel-associated TB disease. None of the children had obtained pre-travel medical advice. Based on current Australian immunisation guidelines BCG immunisation would have been recommended for only one of the three children.

REVIEW OF LITERATURE AND DISCUSSION

We compared national and international recommendations and guidelines for the prevention of travel-associated TB. Current recommendations, and in particular the use of pre-travel BCG immunisation in children, are inconsistent and controversial. Depending on which guidelines had been used, none, one or all of these children should have been given BCG immunisation that might have prevented their disease. The wide variation in recommendations reflects the absence of data on the effectiveness of BCG for travel-associated TB. The paucity of studies highlights that travel-associated TB is a neglected area.

CONCLUSION

Until evidence becomes available on which to base rational guidelines, we believe that a safe and practical strategy is to maintain a low threshold for recommending BCG immunisation for travelling children, particularly those under five years of age. Our practice is to recommend BCG immunisation for any child with at least two of the following three risk factors: (i) age $\leq$ 12 months; (ii) travel to a high risk country (defined as annual TB incidence $\geq$ 100 per 100,000); and (iii) duration of travel $\geq$ six weeks.

Poster Board 16

TOURISM IN THE NAME OF RELIGION: EXPERIENCES FOR TAMIL NADU

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BACKGROUND

Millions of people travel from one part of India to the other for religious purposes, but few of them take up recreational activities.

OBJECTIVE

To find out the pattern of illness encountered while on travel and to elicit the measures that can be adopted to overcome illnesses.

MATERIAL & METHODS

A total of 50 low income group members participated in a religious tour organized by their leader, after planning over a period of six months to travel to 20 different religious destinations in a hired bus within seven days. The data on their stay, food, water consumed, health issues and illnesses experienced was collected. The data was analyzed by simple descriptive statistics.

RESULTS

All of them were males and their ages ranged from 18 to 70 years. They shared a common hall for stay and used their own bedding material. They consumed hotel food and water provided to them. They did not take any special measures to look into water supply except few who purchased sterilized water. Most of them experienced neck and back pain. Among them, five had viral fever, four suffered with respiratory infection, three experienced hypoglycemic spells and one injured. They treated themselves with drugs purchased from medical shop over the counter.

COMMENTS

None of them discussed with their leader or health care provider before starting their journey or even during illness. Neither the leader nor the teammates knew what to do, how to proceed or whom to contact when an illness struck them. As group leaders have control over their team, they should be motivated and trained on hygiene, health and concepts of managing common health issues before hand. People should be advised to consult their physicians for general health check up and informed on taking short term health insurance before they start journey.

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TRAVEL-RELATED HEALTH PROBLEMS: A ONE YEAR STUDY IN TOKYO

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INTRODUCTION

In spite of increasing frequency of international travels, there are few epidemiologic data on travel-related health problem in Japan.

We attempted to analyze these problems in travelers who returned to Japan by accessing the records of those who visited the travel clinic, International Medical Center of Japan (IMCJ).

METHODS

We retrospectively collected data on returning travelers who visited the travel clinic at IMCJ during the period December 2006 through November 2007 with any health problems. A total of 239 patients were included in this study. (124 men and 115 women)

RESULTS

Reasons for travel included leisure (n = 117, 48.9%), business (n = 59, 24.6%), volunteering (n = 24, 10.0%), researches (n = 19, 7.9%), and visiting friends and relatives (n = 20, 8.3%).

The most visited destination was southeast Asia (n = 104, 43.5%), the second was south Asia (n = 51, 21.3%), the third was Africa (n = 41, 17.1%), and the fourth was east Asia (N = 21, 8.7%).

The leading cause of traveler's health problems was acute diarrhea (n = 80, 33.4%), followed by systemic febrile illness (n = 55, 23.0%), acute respiratory infections (n = 33, 13.8%), animal bite (n = 26, 10.8%), and dermatologic disorders (n = 9, 3.7%).

Systemic febrile illness included 10 dengue fever and 9 malaria patients. Seven influenza was included acute respiratory infections.

CONCLUSIONS

The most common travel-related health problem was acute diarrhea. Three-fourths of the patients returned from Asia. Spectrum of disease in our study are consistent with other reports such as the GeoSentinel surveillance data.

Poster Board 18

DIAMOND DREAMS: WORKING IN EXPLORATION

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INTRODUCTION

De Beers family of companies participates in the global diamond value chain from exploration to retail. Each link poses unique challenges to travel and occupational health; none more so than exploration. Diamonds often occur in isolated, inhospitable parts of the world from the tropics to the arctic; desolated sand dunes to beneath the sea. Health practitioners caring for those exploring and developing mine sites in these areas are faced with the full spectrum of delivering travel medicine services in an occupational health context: infectious diseases, physical extremes, occupational exposures, safety, psychosocial issues and medical care.

METHOD

The De Beers exploration and mine development activities in tropical and coastal Africa, Canada, and off shore are contrasted to show the similarities and differences in needs for occupational hygiene and medical services to prevent illness and provide health care in remote sites. Unique challenges facing diamond exploration teams are included.

RESULT

Endemic diseases such as malaria pose a major problem in the tropics and occasional outbreaks such as Ebola affect operations. Cold, heat, and underwater exposure affect exploration teams but have low impact due to the preventive focus of health care. Evacuations are primarily precipitated by existing medical conditions and occasionally injuries.

CONCLUSION

Exploration for diamonds covers a range of travel medicine challenges. De Beers focuses on preventive care by pre-deployment preparation of the exploration and mine development teams, ongoing surveillance in the field, management update on factors such as outbreaks and prophylaxis, and provision of on-site medical care and evacuation facilities.

Poster Board 19

MULTIPLE ROLES OF THE MEDICAL DEVICE IDENTIFICATION CARD IN FACILITATING INTERNATIONAL TRAVEL

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OBJECTIVE

To illustrate the multiple roles of a Medical Device Identification Card (MDIC) in facilitating international travel. To prove that the MDIC does more than provide proof of medically necessary metallic implants when passing through security checkpoints.

METHOD

Direct observation through the course of years of international travel to a variety of countries.

RESULT

The MDIC was not only used to explain positive magnetometer responses at security checkpoints, but it was used successfully to prove the need to transport controlled substances (e.g. narcotic pain medications) across international borders on multiple occasions.

CONCLUSION

The Medical Device Identification Card was successful in speeding a traveler through multiple security checkpoints despite having metallic spinal implants and hundreds of doses of narcotic pain medication. The latter success illustrates a new reason for doctors to issue MDICs to patients that travel extensively. Further, it points to the need for a common MDIC standard throughout the world as well as needed improvements in the security of such a document.

Poster Board 20

CHIKUN WHAT?? ADVICE FOR AUSTRALIAN TRAVELLERS

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AIMS

To increase awareness of Chikungunya virus (CHKV) infection among travel medicine practitioners, with the aim of (a) providing appropriate advice to travellers to high risk areas, and (b) diagnosing potential CHKV infections in returned travellers.

BACKGROUND

Since 2005, unprecedented numbers of CHKV infections have occurred around the world. A large outbreak occurred in the Indian Ocean Islands in 2005-6, affecting about 270,000 people on Réunion Island, almost 40% of its population. Since 2006, an outbreak has been spreading across India, with millions of people affected. Other parts of Asia and Africa have also reported outbreaks.

Imported CHKV cases have been recorded in Australia, Europe, USA, Japan, Hong Kong, and Latin America. Thousands of European travellers were infected during the Indian Ocean outbreak, and for the first time in history, local transmission of CHKV virus was reported in Europe this year. Almost 300 local infections were recorded this summer in Italy, following importation of the virus. Many Australians travel to areas currently experiencing large outbreaks, and are therefore at risk of infection.

RECOMMENDATIONS

Travel medicine practitioners should keep informed about the severity and distribution of current outbreaks of CHKV around the world, so as to (a) educate travellers about mosquito avoidance measures, and (b) increase their own vigilance for possible infections in returned travellers. All travellers to relevant areas should be educated and advised to seek medical attention if they develop symptoms suggestive of the infection. Although treatment is mainly supportive, serious complications can occur.

DISCUSSION

In the presence of a competent mosquito vector, returning viraemic travellers may seed an outbreak, as occurred in Italy. Research to assess the extent of competent vectors for CHKV in Australia may therefore be warranted.

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THE DISEASE PROFILE FOR EXPATRIATES WORKING AT AN AUSTRALIAN MINE DEVELOPMENT PROJECT IN SENEGAL, WEST-AFRICA

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INTRODUCTION

An Australian based company is involved in the development of an open pit gold mine in Sabodala, Senegal and a zircon production plant at Diogo, Senegal. The Sabodala Gold Project, is located 650km east of the capital Dakar and Diogo approximately 170 km north of the capital on the Grand Cote. Expatriates reside in the exploration camps as well as in Dakar. The on site clinics at both mines takes care of more than 200 employees as well as continuing community health care programs for the local population in the nearby villages.

METHOD

The monthly statistics and individual clinical records from the Sabodala and Diogo site clinics were reviewed to establish a disease and injury profile for expatriates. The spectrum of diseases and injuries are presented and the reasons for evacuation to a more appropriate medical facility to establish a diagnosis or for surgical intervention analysed.

RESULT

Although endemic diseases such as malaria pose a major problem in non-immune expatriates, the reason for evacuation to Dakar or abroad involve a much broader spectrum of disease and injury. Family members with pre-existing or chronic conditions that cannot be managed locally become a major reason for evacuation. Regional facilities are often not sufficient to treat underlying conditions which necessitates further evacuation.

CONCLUSION

Appropriate pre-deployment medical screening and preparation of expatriates heading for West Africa must exclude pre-existing conditions that may pose a threat to the health and well being of the expatriate and include health education regarding infectious and parasitic disease.