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12-14 October 2012

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AMMA Annual Conference

Brisbane Convention and Exhibition Centre, Brisbane, Queensland

HANDBOOK

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On behalf of the Organising Committee of the Australian Military Medicine Association, I welcome you to the 2012 AMMA Conference at the Brisbane Convention and Exhibition Centre from 12 to 14th October.

The annual AMMA Conference is the most important annual gathering of health professionals who are involved in Military Medicine and Veterans' Health. At the 2012 conference there will be the over 300 delegates who will have the opportunity to share in the latest advances and issues in all the disciplines associated with management of trauma in combat and disaster situations, as well as broadening this to the long term health effects.

Papers read at previous Conferences have stimulated important discussion and brought to the fore new and stimulating developments that encompass a broad range of topics, including trauma surgery, mental health, health surveillance, operational health, research and ethics and many other streams.

This year our keynote speakers include, Dame Professor Carol Black who will be presenting on the concept of "fit to work". Dame Carol is well known to her Australian audience as she is regarded as a world leader in rehabilitation and Col Bob Hale from the US Army will be presenting on some the pioneering work in facial transplants and reconstruction. There are over 72 papers being read, demonstrating yet again the importance of this conference and the high quality work that is being done among the military and veterans' health communities.

This year we are endeavouring to improve the value to delegates at the conference with pre-conference workshops on Maxillofacial Battle Injuries presented by COL Robert Hale and Essential Military Musculoskeletal Rehabilitation and Sports Medicine facilitated by COL Anthony Delaney and we hope that many will take advantage of this opportunity.

Finally, the quality, value and success of this conference are due to the hard work of the Organising Committee ably led by Dr Nader Abou-Seif. On your behalf I offer them the Association's thanks and gratitude for yet another stunning conference.

We are also indebted to our commercial sponsors who continue to support us and whose contributions in no small way help to keep our conference fees reasonable.

I encourage all delegates to participate fully in this year's conference, to take the opportunity to hear about new and exciting advances in military and veterans' health issues and, to engage with your colleagues.

Dr Greg Mahoney
President, Australian Military Medicine Association


PROGRAM

PROGRAM

THURSDAY, 11 OCTOBER 2012

0830-1730	Registration Desk Open
AMMA WORKSHOPS	
0930-1330	Maxillofacial Battle Injuries – *COL Robert Hale (US)* - Room P6
0930-1715	Essential Musculoskeletal Rehabilitation and Sports Medicine – *Dr Tony Delaney* - Room P8

FRIDAY, 12 OCTOBER 2012

0730-1800	Registration Desk Open
0800-1730	Exhibition Open
0815-0830	Welcome and Opening – *Surgeon General ADF Reserves, AVM Hugh Bartholomeusz and President, AMMA - Dr Greg Mahoney*
0835-0905	Rear Admiral Graeme Shirtley Oration: Tissue Reconstruction in War and Peace - *AVM Hugh Bartholomeusz - SGDFR, AMMA Patron*
0910-1000	Keynote Speaker: *COL Robert Hale (US)* - Restorative Technology: A Military Medical Revolution to Address Severe Maxillofacial Injuries
1000-1030	Morning Refreshments – Trade Exhibition Area

1030-1230	**SESSION 1** **CLINICAL** **AUDITORIUM**	**SESSION 2** **MENTAL HEALTH** **P6**	**SESSION 3** **CLINICAL TRAINING** **P8**	**SESSION 4** **VETERANS' HEALTH** **P10**
1030-1050	Motion sickness desensitization: a review of ADF experience of 'success' *Adrian Smith*	Current Themes in Operational Mental Health *Maureen Montalban*	Development of a medical officer Pharmacology Training Package for the RAAF *Michael Lumsden-Steel*	Considerations in the dental treatment for Vietnam war veterans with PTSD *Norton Duckmanton*
1055-1115	Transfusion practice in critical care burns patients - lessons for the military *Anthony Holley*	Enhancing capability and resilience through Positive Psychology *Mark Mathieson*	Maintaining connectedness and skills in the geographically dispersed clinical workforce *James Ross*	The health and wellbeing of Australia's female Vietnam and contemporary veterans *Samantha Crompvoets*

1120-1140	Lumbar multifidus muscle size is associated with lower limb overuse injuries in military specialist trainees *Geoffrey Crowley*	Pre-deployment BattleSMART: The development and evolution of psychological resilience training for ADF personnel preparing for operations *Nicole Sadler and Maureen Montalban*	Northern Territory ADF Clinical Placement Program *Jessica Burton*	Cancer incidence and mortality in Australian Gulf War veterans *Jillian Ikin*
1145-1205	Penetrating Intracranial Injury caused by mud *Martin Christie*	RESET – Recognising Early Signs of Emerging Trauma: An indicated prevention program for PTSD *Stephen Rayner and Jane Nursey*	Reinvigorating CBRN Health Training for Defence Personnel- a new perspective - *Kylie Douglas*	Long-term disability among combat veterans: cohort study of Australian veterans from the Vietnam war *Philip Clarke*
1210-1230	Tendinopathies, Enthesophies, Overuse Injuries and Alphabet Soup. Where is the Science? *Tony Delaney*	Mild Traumatic Brain Injury (MTBI) in the Australian Defence Force: Results from the 2010 ADF Mental Health Prevalence and Wellbeing Dataset *Alexander McFarlane*	Care in Combat Training for Defence *Glenn Keys*	Risk and resilience in Australian military families *Annabel McGuire*
1230-1330	Lunch – Trade Exhibition Hall			
1330-1530	**SESSION 5** **ETHICS & LEGAL ASPECTS** **AUDITORIUM**	**SESSION 6** **MENTAL HEALTH** **P6**	**SESSION 7** **ACADEMIC TRAINING** **P8**	**SESSION 8** **MISCELLANEOUS** **P10**
1330-1350	When is it permitted to break medical in confidence? A discussion of the ethical issues for Defence medical staff in a case of codeine addiction *Michael Clements*	Suicidality in the Australian Defence Force: Results from the 2010 ADF Mental Health Prevalence and Wellbeing Dataset *Kate Fairweather-Schmidt*	Professional Development for Military Medical Officers; components towards the Diploma in Military Medicine *Jenny Firman*	The Effect of Centre-based Counselling for Veterans and Veterans' Families on Long Term Mental Health Outcomes *David Forbes*
1355-1415	Statements of Principles, process and challenges with translating epidemiology into legal instruments *Justine Ward*	Suicide Prevention in the ADF: Up skilling the mental health provider workforce *Carole Windley*	Aerospace medicine as a clinical specialty – an initiative to recognize 'specialists in aerospace medicine' *John Turner*	The Great War and the Brisbane Hospital *Cliff Pollard*

1420-1440	Credentialing and the law *Yolanda Kuruc*	Consequences of deployment to Timor-Leste for Australian military families *Annabel McGuire*	The ADF Chair of Military Medicine and Surgery *Michael Reade*	More than Malaria. The contribution of Australian Army Doctors to the science of Tropical Medicine in the two World Wars *Geoff Quail*
1445-1505	International Humanitarian Law / Law of Armed Conflict in relation to health personnel. Why do we still not understand? *David Thompson*	Telepsychiatry in the Australian Defence Force *Duncan Wallace*	Masters of Military Medicine – Enhancing Medical Officer Education & Training *Richard Mallet*	The Case of the Pelvic Digit *Peter Hurly*
1510-1530	The introduction of operational automated neuro-cognitive testing in the Australian Defence Force *Leonard Brennan*	Tobacco Use and Nicotine Dependence in the Australian Defence Force: Results from the 2010 ADF Mental Health Prevalence and Wellbeing Dataset *Miranda van Hooff*		
1530-1600	Afternoon Refreshments – Trade Exhibition Hall			
1600-1800	**SESSION 9: OPERATIONAL HEALTH - AUDITORIUM**			
1600-1620	Vom militarisches sanitats leistungen: on military health services - *John Turner \ Neil Westphalen \ Warren Harrex*			
1625-1645	Pilot Australian Defence Force Military Surgical Team at Royal Brisbane and Women's Hospital 2012 *Amanda Dines*			
1650-1710	Providing Effective Forward Surgery in Manoeuvre Warfighting – A Command Perspective *Mark Elliott*			
1715-1735	Controversies in trauma resuscitation: plasma-to-red cell ratios, platelets, tranexamic acid, and hypotensive resuscitation *Michael Reade*			
1740-1800	Frozen blood products: a solution for deployed health facilities? *Anthony Holley*			
1800	CLOSE			
1830-2030	**WELCOME RECEPTION** – TRADE EXHIBITION AREA			

SATURDAY, 13 OCTOBER 2012

0730-1730	Registration Desk Open
0800-1630	Exhibition Open
0815-0825	Welcome and Housekeeping
0830-0930	Keynote Speaker: *Prof. Dame Carol Black (UK)* - Work, Health and Wellbeing - National policy and collaboration
0935-1005	Conference Address: *Hon. Warren Snowdon MP* - Minister for Defence Science and Personnel
1005-1030	Morning Refreshments – Trade Exhibition Area

1030-1205	SESSION 10 REHABILITATION AUDITORIUM	SESSION 11 MENTAL HEALTH P6	SESSION 12 OPERATIONAL HEALTH P8	SESSION 13 HUMAN FACTORS P10	SESSION 14 GARRISON HEALTH P11
1030-1050	Rehabilitation and Recovery of Military Personnel with Serious Wounds, Injuries and Illnesses *Rowena English and Julie Wilson*	The health and wellbeing of ADF reservists: A review of the literature *Samantha Crompvoets*	Environmental Health Provision in Humanitarian Crisis *James Williams*	Results of the Army Colour Perception Study *John Parkes*	Defence medical office Attitude Survey: the ADF Medical Employment Classification Review (MECR) system – *Neil Westphalen*
1055-1115		The Wellbeing Toolbox: Findings of the evaluation of an online mental health and wellbeing resource *Kim Connolly and Jane Nursey*	Working Overseas - Medical Assistance and Evacuation *Mike Broady*	Exposure of aircrew to hand-held laser pointers: what are the risks? *Adrian Smith*	Nine months on: Expectation management, efficiencies and challenges for a frontline medical facility during Garrison Health Transition *Michael Clements*
1120-1140	Musculoskeletal conditions and psychological comorbidities in Australian Gulf War veterans *Helen Kelsall*	Help Seeking, Stigma and Barriers to Receiving Care in the ADF: The mediating role of mental health disorder *Stephanie Hodson*	Oral and maxillofacial surgery and the head and neck on United States Hospital ship Mercy. *John McHugh*	Soldier Load Carriage: A investigation of the load conditioning practices of the Australian Regular Army *Robin Orr*	GP Training for ADF Registrars – it can be done, and it can be fun *Felicity Gemmell-Smith*

1145-1205		Group Cognitive Behavioural Therapy Treatment for Service Related Posttraumatic Stress Disorder: Effectiveness, Sustainability and Repeatability *Andrew Khoo*	The effectiveness of civilian trauma centres and systems: lessons for the ADF *Michael Reade*	Recognition of hypoxia in a simulated flight environment *Adrian Smith*	

1205-1300 Lunch – Trade Exhibition Area Poster Presentations

1300-1440	**SESSION 15** **RAAF AUDITORIUM**	**SESSION 16** **MENTAL HEALTH** **P6**	**SESSION 17** **OPERATIONAL HEALTH** **P8**	**SESSION 18** **REHABILITATION** **P10**
1300-1320	RAAF Symposium	Relationship between ADF member's health, partner's health, and child health outcomes: Findings from the Timor-Leste Family Study on Australian families *Renee Anderson*	Evaluation of a Reintegration Presentation for Returning Australian Army Reservists *Geoffrey Orme*	Integral Leg Prosthesis. (Early results of the osseointegration group of Australia accelerated protocol) *Munjed Al-Muderis*
1325-1345		Reservist Deployment: Perceptions of Benefits and Costs by Families and Employers *James Kehoe*	Sick at Sea – RAN Medevac *Ross Mills*	Initiatives to promote successful rehabilitation outcomes and veteran wellness *Simon Graham*
1350-1410		The Perceived Impact of Military Life on Children *Carol Davy*	The Forces Command Soldier Recovery System *Richard Mallet*	
1415-1435		Unit cohesion, family and social support in relation to PTSD in veterans of deployments to the Gulf War, Iraq and Afghanistan: a systematic review *Breanna Wright*		

1435-1505	Afternoon Refreshments – Trade Exhibition Area
1505-1635	**SESSION 19: MILITARY HISTORY - AUDITORIUM**
1505-1525	The Magnificent Men Return! *Peter Hurly*
1530-1550	A woman at war: The life and times of Dr Phoebe Chapple MM, an Australian surgeon on the Western Front *Susan Neuhaus*
1550-1610	Endurance and Care: Australian Army Mobile Hospital teams in the Kokoda Campaign *Barry Reed*
1615-1635	Two different shadows: caring for Australian and American ex-POWs after World War II *Rosalind Hearder*
1635	CLOSE
1635-1730	**AMMA ANNUAL GENERAL MEETING** – Room P6
1830	Buses leave for Conference Dinner from BCEC
1900-2330	**CONFERENCE DINNER**

SUNDAY 14 OCTOBER 2012 - AUDITORIUM

0830-1300	Registration Open
0900-0905	Welcome and Housekeeping
0905-0940	Panel: A Research Higher Degree in the Military and Veterans' Context – Why, How, When, Where and So What Prof Dennis Shanks, Prof Michael Reade, Dr Peter Nasveld, Dr Annabel McGuire
0945-1045	Joint Health Command Update: RADM Robyn Walker, Mr. David Morton, CDRE Liz Rushbrook, AIRCDRE Tracy Smart
1050-1130	**AWARDS AND CLOSING**
	MORNING REFRESHMENTS

SOCIAL PROGRAM

WELCOME RECEPTION

TRADE EXHIBITION AREA, BRISBANE CONVENTION AND EXHIBITION CENTRE, PLAZA LEVEL, GREY STREET, SOUTHBANK

1830 - 2030, FRIDAY 12 OCTOBER

ADDITIONAL TICKETS - $80

A Welcome Reception will be held in the Trade Exhibition area at the Brisbane Convention and Exhibition Centre on Friday 14 October commencing at 1800. This will be a chance to catch up with colleagues after the first day and explore the trade exhibition stands further.

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AMMA 21ST BIRTHDAY CONFERENCE DINNER

GABBA (BRISBANE CRICKET GROUND)

1900 - 2330, SATURDAY 13 OCTOBER

The 21st Birthday Conference Dinner will commence at 1900 with pre dinner drinks and canapés. This promises to be a very special evening and should not be missed.

Buses will leave from the Brisbane Convention and Exhibition Centre (BCEC) at 1830 to go to the GABBA. This is a chance to let your hair down and kick up your heels. Buses will return to the BCEC at 2230 and 2330.

Attendance to this event is included in the full conference registration. Additional tickets may be purchased for $180 from the registration desk. If you have a full registration this is included in your delegate registration, however, if you are not attending please advise the AMMA Secretariat at registration.

DRESS - LOUNGE SUIT (TIE OPTIONAL), AFTER-FIVE WEAR


WORKSHOPS

MAXILLOFACIAL BATTLE INJURIES

PRESENTED BY COL ROBERT G HALE, DDS

COL Hale completed undergraduate studies at UCLA 1977 and earned his Doctoral 1981 and Postdoctoral Certificate in Oral and Maxillofacial Surgery 1989 at Emory University. He is Diplomate of the American Board of Oral and Maxillofacial Surgeons and Fellow, American Association of Oral and Maxillofacial Surgeons, American College of Oral and Maxillofacial Surgeons and International College of Dentists.

In 1977 COL Hale was commissioned 2LT US Army Reserves (HPSP recipient). His service includes Korea 1981-1982, Hawaii 1982-1985, 16 years in Reserves and combat tours in Kuwait and Afghanistan 2003-2004. COL Hale retired from private practice in Los Angeles 2005 to serve full time in the US Army. Appointments include Program Director, Oral and Maxillofacial Surgery, Brooke Army Medical Center, 2007-2009. In 2009 he took command of the US Army Dental and Trauma Research Detachment in San Antonio, Texas. He is also Director of Craniomaxillofacial Research at the US Army Institute of Surgical Research, Army Representative to the Armed Forces Institute of Regenerative Medicine and Consultant to the Surgeon General for Dental and Craniomaxillofacial Research.

COL Hale is published in numerous professional journals and has lectured extensively on craniomaxillofacial battle-injuries and regenerative medicine. He holds a teaching appointment at UCLA School of Dentistry since 1990 and Adjunct Professor, Uniformed Services University of the Health Sciences. COL Hale was awarded the "A" Proficiency Designator from the US Army Surgeon General to recognize professional expertise, leadership, and academic achievements; he is recipient of the Order of Military Medical Merit.

TIMES	SESSION	SESSION ACTIVITIES	MINUTES
0930	Morning Tea on Arrival		
1000-1100	Characteristics of battle injuries, causes of death, and examples of recent Revolutions of Military Medical Affairs borne out of 10 years of war. Advances in pre-hospital care Advances in Combat Hospital Care Advances in Comprehensive Hospital Care	Presentation with Powerpoint	60
1100-1145	Maxillofacial injury patterns from IEDs Stabilization techniques for fractures,lacerations, avulsions and burns in theatre Definitive treatment of local nationals	Presentation with Powerpoint Case studies presented	45
1145-1230	Level 5 comprehensive reconstructive care of maxillofacial battle injuries and limits of conventional care	Presentation with Powerpoint Case studies presented	45
1230-1300	Strategic research to mitigate the impact of dental disease in the deployed force	Presentation with Powerpoint	30
	Lunch		

The RACGP has endorsed and provided this workshop with Category 2 Points.

RACGPmembers wishing to receive points should collect the appropriate forms from the Registration Desk.

ESSENTIAL MUSCULOSKELETAL REHABILITATION AND SPORTS MEDICINE

PRESENTED BY DR TONY DELANEY

Dr Delaney conducts a specialist sports medicine practice at Narrabeen Sports Medicine Centre, Sydney Academy of Sport, Narrabeen.

He was the visiting senior specialist in sports and rehabilitation medicine to the Fleet Base East Medical Centre, HMAS Kuttabul and 1HSB, Holsworthy Military Area.

He was principal of the Medical Centre, Charlotte Pass, Snowy Mountains 1974-92 winter seasons. The practice is snowbound and provided acute trauma, radiology, emergency, general and sports medicine service Charlotte Pass Ski Patrol coordinated with Snowy Mountain Search and Rescue services.

His Special Interests are:

- Biomechanics, overuse and acute injuries of the spine, lower limb and upper limb.
- Human performance, physiology and medicine in the environments of heat, cold, high altitude and underwater.
- Military Medicine.

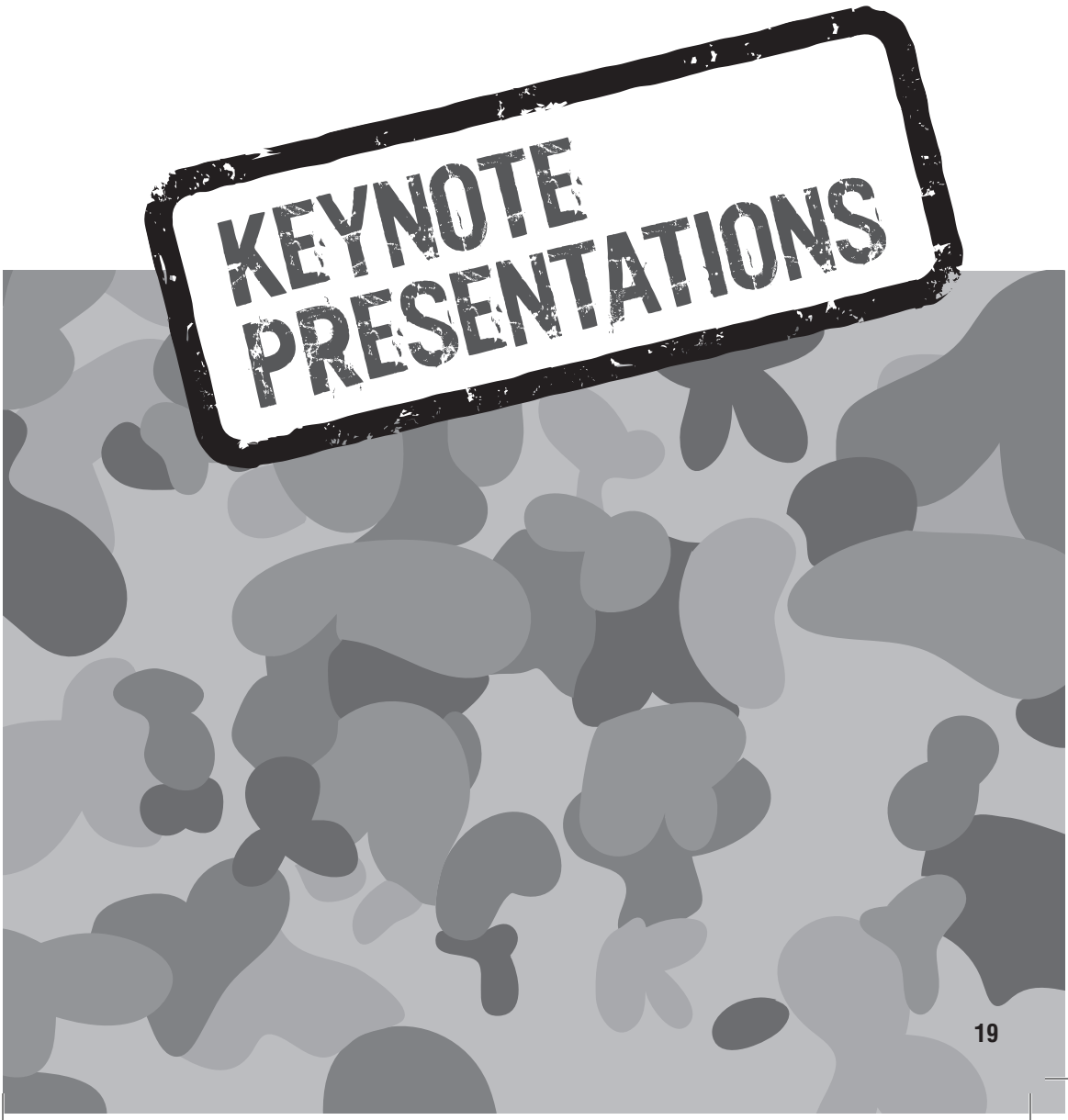
Additional Professional Activities:

- Physician, Olympic Athlete Provider Programme and NSW Institute of Sport.
- Clinical Associate (part-time) Faculty of Medicine, University of Sydney.
- Clinical Supervisor, University of NSW.
- Past Visiting Fellow, Sports Medicine Programs, University of NSW
- Councillor, 1995-6 Sports Medicine Australia.(NSW Branch)
- Education Committee Member,1995-96 Sports Medicine Australia (NSW Branch) .
- Training Supervisor, Postgraduate Programme, Australasian Australian College of Sports Physicians.
- State Training Coordinator ACSP 1997-98
- Member (past) Scientific Committee, Australian Yachting Federation.
- Past Team Physician-Australian National University Rugby Union Club
  - -Penrith Rugby Union Club
  - -Warringah Rugby Union Club
  - -Manly Rugby Union Club (Relieving)

- Doctor, Athlete Care, Sydney Olympic Games 2000.
- Medical Venue Manager (relieving) Rushcutters Bay Marina, Sydney Olympic Games 2000.
- Doctor, Athlete Care, Sydney Paralympic Games 2000
- Medical Director, Sydney Corporate Triathlon 1993-2006
- Team Doctor, Australian Ski Team, World Alpine Ski Championships St Anton, Tirol Austria 2001
- Australian Ski Team, World Alpine Ski Championships St Moritz, Switzerland 2003. Team Doctor
- Australian Rowing Team, 2008 U23 World Championships, Brandenburg, Germany Team Doctor
- World Masters Games Sydney 2009, Rowing , Cycling,- Athlete Care, Emergency Response Doctor
- Riverview Rowing Club, St Ignatius College, Club Doctor, Assistant Coach 2005-2010
- Medical Adviser, Rowing Australia

TIMES	SESSION	SESSION ACTIVITIES	MINUTES
0930	Morning Tea on Arrival		30
1000-1045	Principles of History and Diagnosis Acute and Overuse injuries Basic Biomechanics Rational use of Imaging	Presentation with Powerpoint	45
1045-1145	The Spine Anatomy, pain generating structures, Dermatomes, Myotomes Cervical Spine Thoracic Spine and Chest Wall Lumbosacral Spine and Low Back Pain	Demonstration and practice	60
1145-1215	Exercise Related Headaches	Presentation with Powerpoint	30
1215-1300	Case Demonstration - Upper Limb Thoracic outlet Syndromes (Pack and webbing set up) The Shoulder The Elbow Wrist and Hand	Demonstration and practice	45
1300-1400	Lunch		
1400-1500	Case Demonstration - Lower limb Exercise related Leg Pain Foot Pain Ankle Pain and the Difficult Ankle The Knee Hip and Groin Pain	Demonstration and practice	60
1500-1530	Afternoon tea		
1530-1630	Improvisation in the Field Taping, Injections, Orthotics Sports Nutrition	Demonstration and power point	60
1630-1715	Group Discussion: Predisposing activity Quiz Case study presentation Question and answer	Small group and large group discussion	45

A request to the RACGP for the program to be endorsed and provided with Category 1 points is currently awaiting confirmation. RACGP members wishing to receive points should collect the appropriate forms from the Registration Desk.


KEYNOTE
PRESENTATIONS

KEYNOTE SPEAKERS

COL ROBERT G HALE, DDS

DIRECTOR OF CRANIOMAXILLOFACIAL RESEARCH , US ARMY INSTITUTE OF RESEARCH, FORT SAM HOUSTON TX. COMMANDER, US ARMY DENTAL AND TRAUMA RESEARCH DETACHMENT, FORT SAM HOUSTON, TX

COL Hale completed undergraduate studies at UCLA 1977 and earned his Doctoral 1981 and Postdoctoral Certificate in Oral and Maxillofacial Surgery 1989 at Emory University. He is Diplomate of the American Board of Oral and Maxillofacial Surgeons and Fellow, American Association of Oral and Maxillofacial Surgeons, American College of Oral and Maxillofacial Surgeons and International College of Dentists.

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RESTORATIVE TECHNOLOGY: A MILITARY MEDICAL REVOLUTION TO ADDRESS SEVERE MAXILLOFACIAL INJURIES

Traditionally, battle injuries to the face have defined the limitations of maxillofacial reconstructive surgery. Reconstructive surgery developed throughout the last century uses autogenous tissue to replace missing or damaged body parts to varying degrees of anatomical and functional success. From autogenous grafts and flaps, and alloplastics inserted in between tissues, surgeons have developed reconstructive techniques to meet the challenges of face defects in a relatively slow evolutionary process all the way to the current state-of-the-art technology: the microvascular free flap transfer. Today, however, the focus of research is on development of Restorative Technologies to return complex

body structures to full form and function through Composite Tissue Allotransplantation and Regenerative Medicine. Indeed, the shift from Reconstructive to Restorative Technologies has been truly revolutionary and borne out of war.

WWI saw industrial nations use of exploding ordinance on the battlefield on a massive and destructive scale. To avoid certain death, opposing infantrymen dug trenches and fought with grenades and machine gun fire between volleys of rolling artillery. In essence the trenches served as the soldiers' body armor but engagement meant preferentially exposing the face and hands to enemy fire. Additionally, explosive rounds within the enclosed spaces of tanks, planes and ships led to increased burn casualties. The result was face battle injuries seen in large numbers in WWI.

Sir Harold Giles, disturbed by the volume of face injuries he saw while visiting France's Western Front, recognized the need for a specialized hospital unit to care for thousands of battle injured faces, injuries characterized by open wounds, comminuted fractures and burns. Through his efforts, in 1917 a hospital unit dedicated to maxillofacial reconstruction was opened in Sidcup, England. Experts in facial injury were drawn to this dedicated facility, which became a research incubator for reconstructive techniques to address the deformities of a multitude of casualties.

While reconstruction of face with skin grafts and flaps was not an especially novel technique, WWI produced large volumes of similarly injured patients. Consequentially, these procedures were refined and greatly improved at Sir Harold Giles' facility. Indeed, autogenous grafts and flaps innovated by surgeons of that era, although characterized by multiple surgical stages, donor site morbidity and limited esthetic and functional outcomes, are still valued procedures in the 21st century to treat many facial defects.

Over the past 100 years, the face of battle has not changed and unfortunately the frequency of facial injury appears to have significantly increased in the latest conflicts through the combination of improved survivability (body armor and advanced battlefield medicine) and the enemy's use of explosive devices. In the WWII, Korea and Vietnam wars, head and neck injuries occurred in 16-20% of cases but now over 30% of evacuated battle injured service members over the past 10 years present with head and neck injuries. The facial injuries are characteristically open wounds (60%), fractures (40%), burns (8.7%), or a combination of those injuries. The mechanism of facial injury is penetrating trauma in over 90% of cases, with explosive devices predominating.

Complex maxillofacial injuries caused by explosions are addressed by stabilizing the facial skeleton in a similar fashion as blunt trauma patients using titanium internal fixation devices unless the overlying soft tissue is burned or avulsed. In cases of severe soft tissue compromise, external fixation is often necessary until serial debridements, flaps and grafts can close the integument. Re-establishment of gross facial dimensions, occlusion and facial projection guide treatment at this phase. Comminuted fractures deemed non-repairable are debrided and bone replaced with primary grafts to the upper face, midface and condylar areas, provided soft tissue coverage is possible; primary bone grafts to

reconstruct mandibular body defects are typically avoided until the zone of soft tissue injury is demarcated, debrided and reconstructed with robust flaps.

Once the facial skeleton is reconstructed and wounds closed, re-evaluation of avulsed and damaged facial features is performed. A major limitation of conventional flap techniques, despite the development microvascular free flaps, is reconstruction of the central facial features due to the subtle changes in skin thickness, delicate contours, and varying projections that define facial subunits. Adding to the complexity of reconstruction is the highly functional perioral apparatus, to include the lips; not only are lips anatomically distinct in shape, tissue type and projection, reconstruction must provide anatomically correct muscle function for lip competence and speech production. Multiple surgeries and revisions characterize reconstruction of complex facial defects. In far too many cases, surgical fatigue, not surgical success, heralds the end of the reconstruction.

A major revolution in medical technologies occurred in November of 2005 when a team of surgeons in Amiens, France, led by Drs. Dubernard and Devauchelle, performed the world's first face allotransplantation to restore a young woman's entire lower face, to include the nasal tip, lips and chin. The case has been deemed an esthetic and functional success but controversial due to patient selection criteria (her injuries followed a suicide attempt) and the requirement for lifetime immunosuppression for a relatively non-life threatening disorder. Significantly, the allotransplant restored the face in one surgical step by replacing missing and damaged tissues with "like" tissue from a brain-dead, beating heart donor. Despite several early rejection episodes and post-transplant cytomegalovirus and fungal infections requiring intensive medical interventions, she is currently stable with no signs of rejection. The allotransplanted face appears normal and well-integrated, and sensory/motor function has returned to the lips.

To date, 17 other cases of face allotransplantation have been performed around the world. All of these patients had unacceptable results following multiple reconstructive attempts. All (surviving) patients have required immunosuppressants to maintain the transplanted tissue. A Chinese patient died after returning to his rural home and discontinuing immunosuppressant therapy. A burn patient treated with face and bilateral hand transplants developed a postoperative multi-drug resistant infection and died within a month of surgery. All other patients are reportedly progressing well after surgery although follow up is less than 3 years for the majority of patients.

The world's experience in face (and hand) allotransplantation has proven the technology is possible but it requires lifelong immunosuppressant therapy. Restoration of functional anatomy after allotransplant appears promising but the application of the present technology appears suitable for only the most severe cases of facial defect. As researchers develop predictable protocols to modulate the immune system, allotransplantation of composite tissues will undoubtedly become more acceptable but a limited pool of donors and lifetime expense of approximately one million dollars for each patient receiving an allotransplant has spurred science to develop a face through Regenerative Medicine technologies.

In 2007, then Secretary of Defense Robert Gates gave a directive to fund and develop clinical and rehabilitative research to better care for injured service members. The Department of Defense responded in 2008 by the creation of the Armed Forces Institute of Regenerative Medicine (AFIRM), a multi-institutional, interdisciplinary network working to develop advanced treatment options for severely wounded service members. AFIRM consists of two consortiums of 28 leading research institutions and over 200 scientists from all over the United States, working as partners with the US Army Institute for Surgical Research (ISR). AFIRM is managed and funded through the US Army Medical Research and Materiel Command, with additional funds from the US Navy (Office of Naval Research), the US Air Force (Office of the Surgeon General), the National Institutes of Health, the Veterans Administration, the Department of Defense (Health Affairs), and local public and private matching fund programs. Leveraged at over three hundred million dollars, AFIRM has a five year grant to develop regenerative medicine technologies and products with emphasis on burn repair, limb and digit salvage, craniofacial reconstruction, scarless wound healing and mitigation of compartment syndrome, all significant clinical problems shared by many service members injured in battle. Key to product development has been the early and continuous involvement of experts in the biomedical industries.

Just two years after the creation of AFIRM, clinical trials are soon to be launched at the ISR to test products: skin cell spray and engineered skin substitute for burns, a device to mechanically modulate scar formation, and adipose fat transfer to prevent and remodel scars. Face, hand and arm allotransplantations have been performed using novel immunomodulation therapy at other research institutions. Additional products in AFIRM's research pipeline include engineered muscle replacements, advanced degradable scaffolds for repair of bone defects, skin printing and copying technologies, regenerative nerve conduits, tissue-engineered cartilage for ears, novel drugs to reduce burn progression, limb and digit tissue regeneration and cellular therapy for treatment of compartment syndrome.

The military medical research organization has brought together experts from a wide range of scientific, clinical and industrial fields to create a fertile, multidisciplinary research environment. The clinical problems are made clear to the scientists, the pathway to translate research is made clear to the clinicians and the regulatory process is negotiated by industrial partners. This teamwork approach of a large number of scientists, clinicians and industries working synergistically to solve a defined set of difficult clinical problems is unprecedented. AFIRM's governance, oversight committee structure and competitive involvement of scientists is in itself a revolutionary process which promises to produce a revolutionary advancement of technologies to restore to full form and function to missing and damaged body parts.

Once again, war has greased the wheels of innovation. The face continues to be vulnerable on today's battlefields with injuries predominately caused by explosive devices. Body armor and advances in battlefield medicine has meant more casualties survive with crippling limb injuries and devastating face deformities. Reconstructive surgery, advanced

through the ages but accelerated during times of war, has met its match with blast injuries characterized by complex lacerations, avulsions, comminuted fractures and burns. Conventional reconstruction with autogenous grafts and flaps are inadequate in the most severe cases. Dozens of service members are candidates for face allotransplantation but the associated risks of lifetime immunosuppression dampens enthusiasm for that approach. Ultimately, research will provide "like" subunits of functional tissue to not only restore maxillofacial defects caused by battle injuries but restore defects from all causes. It remains to be seen if allotransplantation can be made more acceptable through immunomodulation research or whether the face can be restored to acceptable form and function through regenerative medicine technologies. In either case, the process has been, and will continue to be, revolutionary.

PROFESSOR DAME CAROL BLACK DBE, MD, FRCP, MACP, FMEDSCI

PROFESSOR DAME CAROL BLACK is Expert Adviser on Health and Work to the Department of Health (UK) and Consultant Adviser on Health to the Department of Works and Pensions (UK), Chairman of the Nuffield Trust, Chairman of the Governance Board of the Centre for Workforce Intelligence, President of the British Lung Foundation and Pro-Chancellor of the University of Bristol. She has just completed as co-chair an independent review for the government of sickness absence in the UK.

She is a past-President of the Royal College of Physicians and immediate past-President of the Academy of Medical Royal Colleges.The Centre she established at the Royal Free Hospital in London is internationally renowned for research and treatment of connective tissue diseases. Since the early 1990s she has worked at board level in a number of organisations, including the Royal Free Hospital Hampstead NHS Trust, the Health Foundation, the NHS Institute for Innovation and Improvement, and the Imperial College Healthcare Charity, and she has chaired the UK Health Honours Committee.

Dame Carol is a Trustee of the National Portrait Gallery, a member of the committee for the Queen's Awards for Voluntary Service, and on several national committees aiming to improve healthcare. She is a foreign affiliate of the US Institute of Medicine and has been awarded many honorary degrees and fellowships.

WORK, HEALTH AND WELLBEING - NATIONAL POLICY AND COLLABORATION

The lecture will be based on the following premises, for all of which there is good evidence: first that for most people of working age work - the right work- is good for their health and wellbeing; second, that for most people worklessness is harmful to health; and third that much sickness absence and inactivity follows common health conditions which, given the right support, are compatible with work (although sometimes with a different kind of work). There should be minimal delay in making an adequate assessment of an individual's capability to work. Last, despite our best efforts some people are too unwell or disabled to be able to work - their needs should be addressed promptly and adequately.

The lecture will examine the health of the working-age population and the groundswell we have seen in approaches to health at work since 2008. There has been increasing acknowledgement of the importance of the workplace in safeguarding and improving the physical and mental health of employees, and a concern to address the alterable factors associated with health inequalities. Recognition has also come of the impact of staff health and wellbeing upon business performance - and the nature and extent of reach of Occupational Health are also under the microscope.

The lecture will describe various national policy initiatives that have been taken in the UK since 2005, aiming at improving the health and wellbeing of the workforce. Many of these initiatives may have international interest.

CONFERENCE ADDRESS

HON WARREN SNOWDON MP, MINISTER FOR DEFENCE AND SCIENCE PERSONNEL

Warren Snowdon, Minister for Defence Science and Personnel is the federal member for Lingiari and was previously the member for Northern Territory, and has held these seats from 1987 to 1996 and from 1998 to the present.

Warren first moved to the Northern Territory in 1976 to work as a teacher after gaining a Diploma of Education from Murdoch University.He later moved to Alice Springs where he has lived for more than 30 years with his partner Elizabeth Verstappen. They have raised four children, Frances, Tom, Tessa and Jack in Central Australia.

Between 1978 and 1981 he worked as a researcher at the ANU's Centre for Resource and Environmental studies under the economist and Indigenous policy pioneer H.C. 'Nugget' Coombs. Warren co-authored several books on Indigenous culture and education with H.C. Coombs while Warren was working at the Centre.

Before being elected to Parliament in 1987, Warren was also a senior policy officer at the Central Land Council in Alice Springs.

Warren is an extremely active parliamentarian and has been a member of a number of parliamentary committees and sub-committees. He has served as Parliamentary Secretary to the Minister for Transport and Communications (1990-92), Parliamentary Secretary to the Minister for Employment, Education and Training (1992-96), Parliamentary Secretary to the Minister for Environment, Sport and Territories (1993-96) and Parliamentary Secretary (Territories) (1993-94).

In November 2007, Warren was appointed as the Minister for Defence Science and Personnel. Warren filled this Ministerial position until June 2009 when he was appointed Minister for Indigenous Health, Rural and Regional Health and Regional Services Delivery.

Following the 2010 election, Warren was appointed Minister for Veterans' Affairs, Minister for Defence Science and Personnel and Minister for Indigenous Health, Minister Assisting the Prime Minister on the Centenary of Anzac. He also has responsibility for Male Health.

REAR ADMIRAL GRAEME SPENCER SHIRTLEY AM RFD RANR

MB BS (NSW), DDR (SYD), FRANZCR

Rear Admiral Graeme Spencer Shirtley AM RFD RANR served as Surgeon General Australian Defence Force (SGADF) from 09 May 2005 to 03 July 2008. During that time, he was AMMA Patron, where he provided strong support for its development, aims and objectives.

Graeme was born in Epping NSW on 17 August 1950. He was educated at Beecroft Public School and Epping Boys High School, and studied medicine at the University of NSW.

Graeme was awarded a Diploma of Diagnostic Radiology from Sydney University in 1979 and his Fellowship from the Royal Australasian College of Radiologists (now the Royal Australian and New Zealand College of Radiologists) in 1980. He was in private practice in Sydney, where he developed his special interests in CT imaging, musculoskeletal imaging (particularly with ultrasound) and mammography.

In 1992, Graeme became a Visiting Fellow in MRI at the Barrows Neurological Institute in Phoenix Arizona, and at the MRI Institute Presbyterian Hospital in Pittsburgh Pennsylvania.

On the Service side, Graeme joined the Navy as a reserve junior sailor in 1969. Over the next six years, he was promoted through the ranks to Leading Seaman in the Reserve, while continuing his undergraduate medical studies.

On completing his medical degree, he was commissioned as a Lieutenant RANR. Graeme then progressed to Lieutenant-Commander in 1981, and to Commander in 1987. Following his promotion to Commander, Graeme became SMO of the Sydney Port Division. Graeme's seagoing service included the aircraft carriers Melbourne and Sydney, as well as Vendetta, Torrens, Stuart, Brisbane, Stalwart, Supply and Darwin. He also served ashore at Cerberus, Penguin, Kuttabul, Albatross, and Stirling, and in Canberra.

Graeme was appointed consultant radiologist to the Director General Naval Health Service in 1985, and to SGADF in 1990. He was a member of the SGADF Radiology Steering Group from 1985, and was appointed the inaugural chairman when it became the Medical Imaging Consultative Group in 2000.

Overseas, Graeme was a visiting lecturer to the Department of Radiology National Naval Medical Centre (NNMC) in Bethesda Maryland USA, guest lecturer at the Uniformed Services University of the Health Sciences (USUHS) in Washington DC in 1998, and was appointed USUHS Adjunct Assistant Professor of Radiology and Nuclear Medicine in 2002.

INAUGURAL RADM GRAEME SHIRTLEY ORATION

Graeme was promoted to Captain RANR on 31 December 1998 and appointed Director Health Reserves-Navy (DHR-N) the following day. In July 2000, he was appointed the inaugural chairman of the National Reserve Health Triumvirate. On 27 September 2002, Graeme was promoted to Commodore and appointed Assistant SGADF – Navy. In this role, he liaised with State Departments of Health to establish strategic alliances with the teaching hospitals to increase the experience of Permanent Forces doctors, nurses and medics in trauma management.

On 09 May 2005, Graeme was promoted to Rear Admiral and appointed SGADF. As such he was the first Navy medical officer to become SGADF since that position was established in the early 1980's, the first to achieve the rank of Rear Admiral RANR, and the first to achieve the rank of Rear Admiral since Geoff Bayliss (DGNHS 1987-1990).

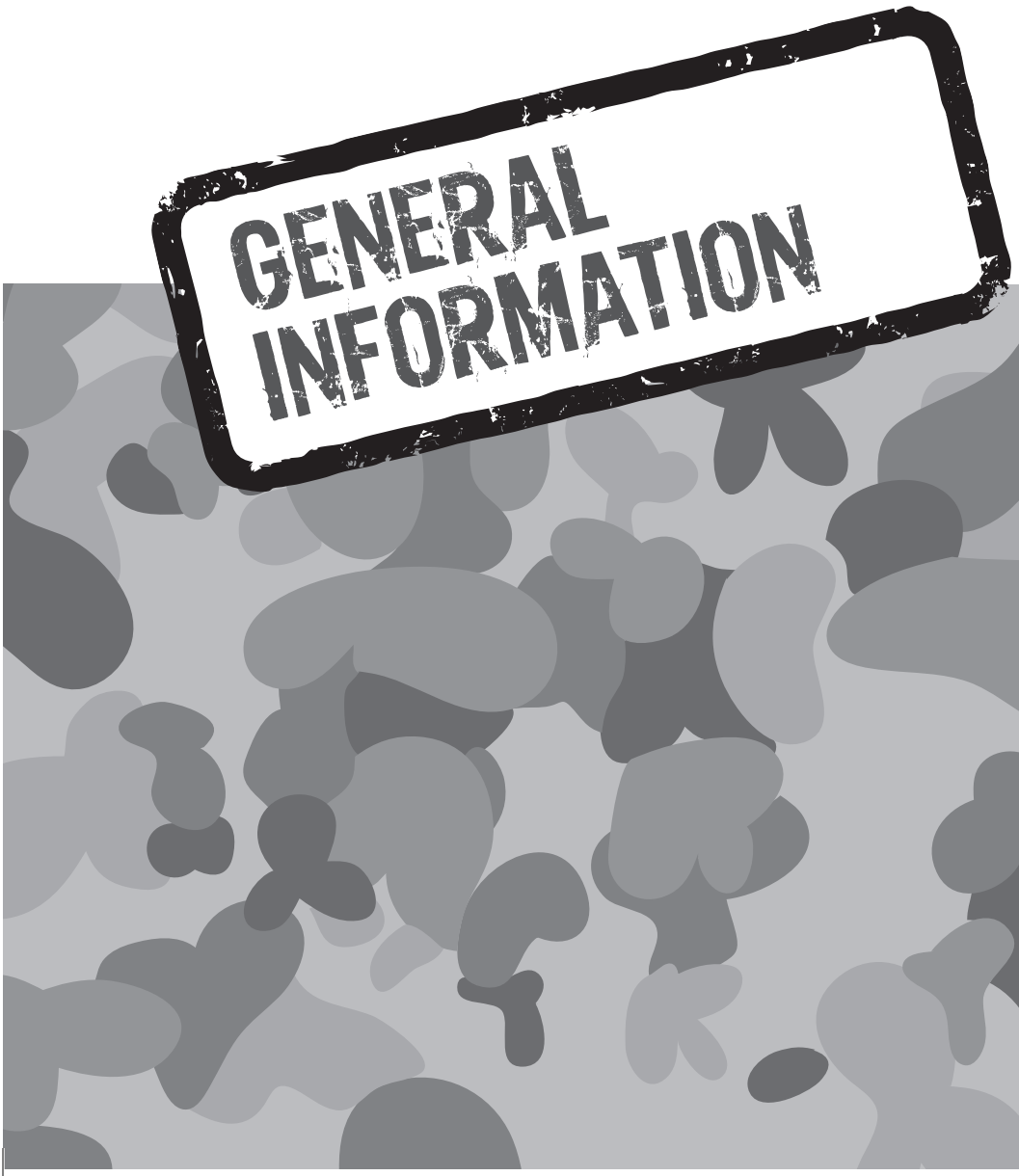
On 04 July 2008, with the restructure of the senior ADF health leadership, Graeme was appointed Surgeon General Defence Health Reserves until 31 December 2008. He was appointed a Member of the Order of Australia in the Military Division in the Australia Day 2011 Honours List, for his exceptional performance of duties as a RANR medical officer.

After his term as Surgeon General, Graeme decided not to return to full time radiology practice but to relax a little, pursue his sporting interests and spend more time with his family. Tragically, these plans were curtailed by the onset of a brain tumour in March 2010. He underwent surgery and made a good recovery; however, he died on 27 March 2012 after its expected recurrence.

INAUGURAL REAR ADMIRAL GRAEME SHIRTLEY ORATION: TISSUE RECONSTRUCTION IN WAR AND PEACE

AVM HUGH BARTHOLOMEUSZ, AM, SGADFR

Air Vice Marshal Hugh Bartholomeusz was appointed Director General Air Force Health Reserves and promoted to Air Commodore in September 2007. In November 2011, Dr Bartholomeusz was promoted to Air Vice-Marshal and he assumed the role of Surgeon General Australian Defence Force Reserves on 1 December 2011. He is the current Patron of the Australian Military Medicine Association (AMMA).


GENERAL
INFORMATION

ACCOMMODATION

If you have any queries relating to your accommodation booking, please see the staff at the registration desk, or alternatively the staff at your hotel.

Your credit card details have been transferred to the hotel you have selected – please confirm this on check in with your hotel. If you have arrived 24 hours later than your indicated arrival day you may find that you have forfeited your deposit.

ADDITIONAL TICKETS: CONFERENCE SOCIAL PROGRAM

The Welcome Reception and Conference Dinner are included in each full conference registration. Additional tickets for these two events may still be available at a cost of $80 for the Welcome Reception and $180 for the Conference Dinner.

AMMA ANNUAL GENERAL MEETING

The AMMA General Meeting will be held in Room P6 at 1630hrs on Saturday 13 October.

AMMA AWARDS

WEARY DUNLOP AWARD - $750

The Australian Military Medicine Association is committed to supporting military medicine, and as a result, present the Weary Dunlop Award for the best original presentation given at the annual Conference. The award is open to all presenters at the Conference and is named in honour of Sir Edward "Weary" Dunlop, who passed away in 1993.

The award prize is $750 and publication of the paper in the association's journal Journal of Military and Veterans' Health. It is open to all presenters, whether or not they are members of AMMA and must be an original presentation to which they have intellectual property rights.Medicine

PATRON'S PRIZE - $250

The Patron's Prize will be awarded to the AMMA Member with the best article published in a peer reviewed journal. It must be a health related article and published within the past financial year (1 July 2011 – 30 June 2012). Members must submit their article for consideration to the AMMA Secretariat secretariat@amma.asn.au by 31 July 2012.

JOURNAL EDITOR'S PRIZE - $750

The award for the best paper published in the Journal of Military and Veterans' Health within a 12 month period will be judged and presented by the Chief Editor.

JMVH NEW AUTHOR PRIZE - $500

The award for the best paper published within a 12 month period by an author who has not previously published in the Journal of Military and Veterans' Health will be judged and presented by the Chief Editor.

JMVH BEST VETERAN PAPER - $1500

sponsored by Repat Foundation Inc.

The Repat Foundation

Healthy Veterans, Healthy Communities

The Veterans Paper Prize is awarded by the Editorial Board of The Journal of Military and Veterans' Health for the best original paper on veterans' health published in each volume of the Journal (constituting the issues published in each financial year). The Editorial Board will determine the criteria and method for determining the award of the Prize.

An original paper is one that is published in any of the following Sections of JMVH:

Original Papers; Short Communications; Case Studies; Review Articles; History.

Membership of the Association is not a requirement for the granting of the Award.

AMMA MERCHANDISE

AMMA Merchandise will be available for purchase at the Conference Registration Registration desk . Items for sale include caps, cufflinks, pens, polo shirts and jackets and ties.

BANKING

Banking hours in Brisbane are Monday to Friday 9.30am – 4.00pm. Banks are closed on weekends. There are ATMS to be found throughout the conference centre.

CATERING

All catering will be served within the Trade Exhibition area located in the Plaza Foyer.

CONFERENCE APP

A conference APP will be available prior to and after the conference. This is available for downloading for IPADs, IAPPs and androids. Once downloaded alerts will be provided as the APP is updated. This is a password protected APP and only available to conference delegates. Delegates have been provided with the password two weeks prior to the Conference. If you have not received the password please see the Registration desk for access.

CONFERENCE NAME BADGES

All delegates and exhibitors will be provided with a name badge, which must be worn at all times within the conference venue. Your name badge will give you access to all events that are part of your registration or that you have purchased.

CONTINUING PROFESSIONAL DEVELOPMENT

AMMA has been approved by the following organisations for CPD

RACGP

The program has been endorsed by the RACGP and provided with Category 2 Points. RACGP Members will be required to sign a form and provide their membership no at the registration desk. They will need to collect a program and evaluation form for lodging with registration on completion of their attendance at the conference.

RCNA

The conference has been endorsed by the Royal College of Nursing, Australia according to approved criteria.

ACRRM

The conference has been endorsed by the Australian College of Rural and Remote Medicine according to approved criteria.

DISCLAIMER

The 2012 AMMA Conference reserves the right to amend or alter any advertised details relating to dates, program and speakers if necessary, without notice, as a result of circumstances beyond their control. All attempts have been made to keep any changes to an absolute minimum.

DRESS CODE

The AMMA Conference is a civilian event and therefore military dress is not compulsory. Dress throughout the day is smart casual along with the Welcome Reception. However, if you have been sponsored by Defence to attend the conference you should contact your superior officer as to what you are required to wear. The Conference Dinner is formal, after five wear is appropriate with jacket (tie optional) for men.

INTERNET AND WI-FI

Wi-Fi will be available to delegates. Please see Registration for the password for access.

MOBILE PHONES AND PAGERS

As a courtesy to other delegates, please ensure that all mobile phones and pagers are turned off or are in silent mode during all sessions and social functions.

REGISTRATION

Registration opening and closing times are as follows:

Thursday 11 October	0830-1730
Friday 12 October	0730-1800
Saturday 13 October	0730-1730
Sunday 14 October	0830-1300

SMOKING

The Brisbane Convention and Exhibition Centre is a non smoking area.

PARKING

The Centre provides undercover parking for 1500 vehicles, with direct lift access to the Centre's convention and exhibition facilities.

For faster exit at our car parks and for the convenience of our patrons, the Centre has installed a new automated parking system which allows you to enter and exit the car park using your credit card. The fast pay initiative works by inserting your credit card on entry, then again on exit through the automated exit lanes. This makes exiting the car parks an easier, faster process.

- 24 hour undercover parking
- On site Car Park Manager
- Visa, Mastercard and cash are accepted at exit booths

Rates:

0-6 Hours	$15.00
6-7 Hours	$17.00
7-8 Hours	$19.00
8-9 Hours	$21.00
Over 9 *(up to 24 Hours max)*	$25.00
Early Bird *(enter before 9am, exit between 3pm-6pm Mon-Fri only)*	$12.00

POSTER PRESENTATION

Staff at the Registration Desk will direct you to the display boards. Please use strong double sided tape or both sides of the Velcro to hang the poster. Authors should be available on Saturday 13 October at lunch time (1205-1300) to discuss the poster with delegates.

SPEAKERS

Speakers are asked to load their presentations onto the conference laptop in the Speakers Prep Room AT LEAST three hours before they are due to present – this may mean the day before your presentation. An audio visual technician will be available throughout the conference. Please see the Registration Desk for further information.

SPEAKERS PREPARATION ROOM

The Speakers Preparation room is located on the Concord Level of the BCEC. Computer and audio visual equipment is available for speakers wishing to review or change their presentations. The Speakers Preparation Room will be open at the same times as the Registration Desk.

SPECIAL DIETS

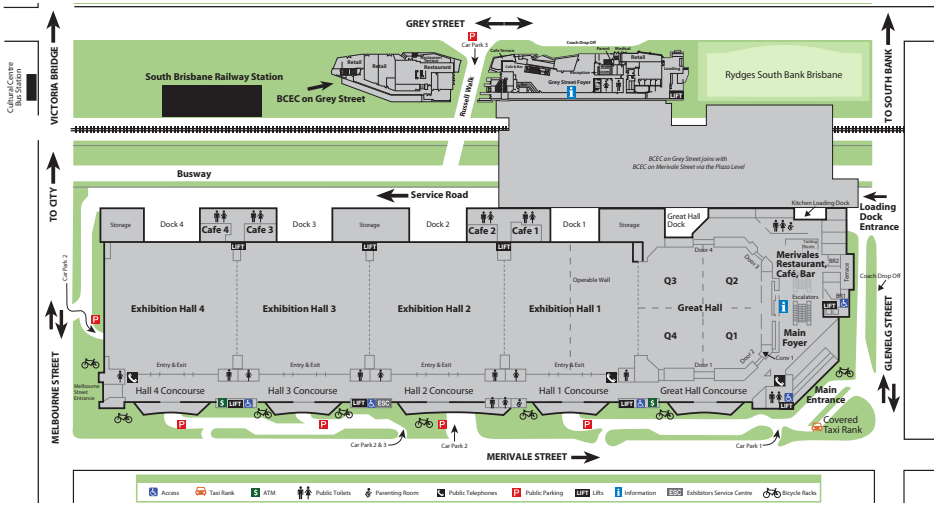
The BCEC has been advised of any special diet preferences you have indicated on your registration form. Please indicate this to the catering staff - they will be happy to assist in providing you with your appropriate food.

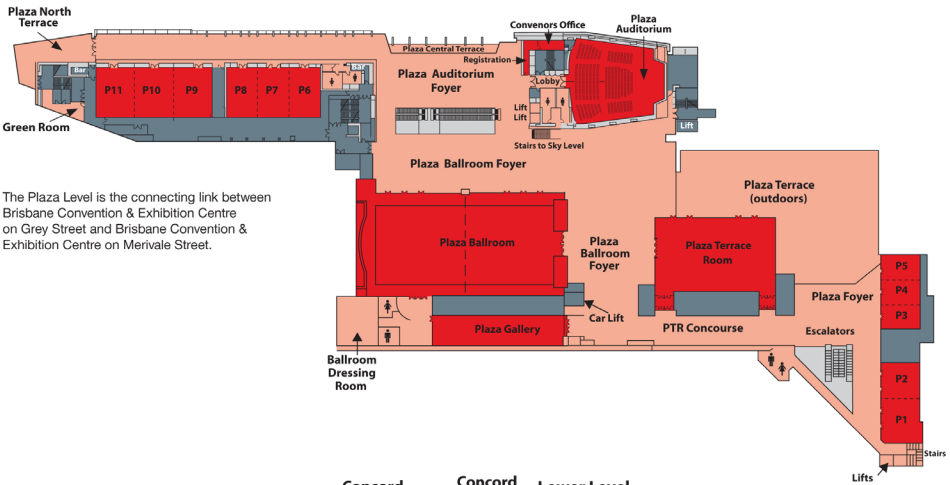
CONFERENCE VENUE MAP

Index

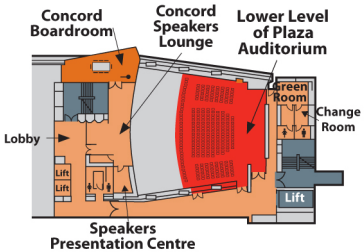
1. Abbey Apartments
2. Brisbane Marriott Hotel
3. Central Dockside Apartments
4. Central Hillcrest Apartments
5. Central Summit Apartments
6. Diana Plaza Hotel
7. Emporium Hotel Brisbane
8. Hilton Brisbane
9. Holiday Inn Brisbane
10. Hotel George Williams
11. Hotel Grand Chancellor
12. Hotel Ibis Brisbane
13. Hotel Urban Brisbane
14. iStay River City
15. M on Mary
16. MacArthur Chambers
17. Mantra on Queen
18. Marque Hotel Brisbane
19. Mantra South Bank
20. Mater Hill Place Motel
21. Medina Executive
22. Mercure Hotel
23. Metro Hotel Tower Mill
24. Novotel Brisbane
25. Oaks Aurora
26. Oaks Casino Towers
27. Oaks Charlotte Towers
28. Oaks Felix
29. Oaks Festival Towers
30. Oaks Lexicon
31. Oaks 212 Margaret
32. Park Regis North Quay
33. Portal Hotel
34. Quality Hotel The Inchcolm
35. Quay West Suites
36. Quest Bridgewater Apartments
37. Quest on Story Bridge
38. Quest River Park Central
39. Quest Spring Hill
40. Rendezvous Hotel Brisbane
41. Ridge on Leichhardt
42. Riverside Hotel South Bank
43. Rothbury on Ann
44. Royal Albert Hotel
45. Royal on the Park
46. Rydges South Bank
47. Sebel and Citigate King George Square
48. Sebel Suites
49. Sofitel Brisbane Central
50. South Central
51. Stamford Plaza
52. The Chifley at Lennons Hotel
53. The Limes Hotel
54. The Point Brisbane
55. Treasury Heritage Hotel
56. Watermark Hotel Brisbane
57. Site of proposed 5 Star Hotel

CONFERENCE VENUE MAP





The Plaza Level is the connecting link between Brisbane Convention & Exhibition Centre on Grey Street and Brisbane Convention & Exhibition Centre on Merivale Street.



NOTES


SPONSORS &
EXHIBITORS

SPONSORS

AMMA would like to thank the following sponsors for their support

PRINCIPAL SPONSOR & WELCOME RECEPTION SPONSOR

ASPEN MEDICAL

Aspen Medical is a privately owned global healthcare solutions provider. Aspen Medical was established to provide the highest quality healthcare in environments that are remote, challenging and under-resourced.

Aspen Medical has the capabilities and experience to deliver healthcare solutions in complex environments throughout the Pacific region, South East Asia, America, the Middle East, and the United Kingdom.

This is satisfied through a unique combination of flexible teams of health practitioners, including doctors, nurses and paramedics, combined with mobile medical facilities and highly refined medical processes and procedures. This project management model gives Aspen Medical the ability to deliver an expanding number of health services around the world.

www.aspenmedical.com.au

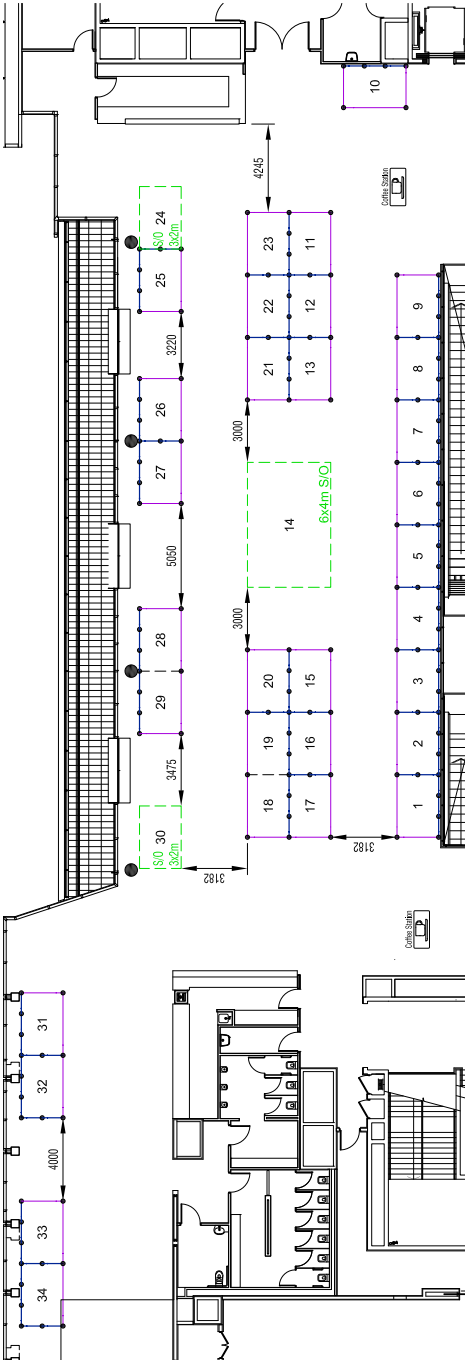
NAME BADGE SPONSOR

MARSHALL LAND SYSTEMS

Marshall Land Systems is a Prime Systems Integrator specialising in world class Deployable Health Systems enabling the best possible patient outcomes. We provide modular and scalable Medical Treatment Facilities from Role 1 to Role 3 including, if required, any medical equipment required for full turn-key solutions. Our solutions can be hard or soft walled shelters, or frequently a hybrid of both types. Individual modules such as CT Scanners, Operating Theatres and Intensive Care Units can also be integrated into existing facilities. Other capabilities include casualty loading systems and complete integrated ambulance solutions. We also provide through-life support, including on deployed operations.

www.marshall-ls.com

TRADE EXHIBITION MAP



1 Medline
2 Centre for Military & Veterans Health (CMVH)
3 iNova Pharmaceuticals
4 iNova Pharmaceuticals
5 Prometheus Medical
6 Mental Health, Psychology & Rehabilitation Branch
7 Karl Storz Endoscopy
8 Marshall SV
9 Maquet
10 Mayo Healthcare
11 Defence Health
12 Taleb Medical
13 Department of Veterans Affairs
14 Laerdal
15 Zoll Medical
16 Vorotek
17 Verathon Medical
18 Aspen Medical
19 Aspen Medical
20 Rymed Pty Ltd
21 International SOS
22 Chart Australia BioMedical
23 Cellestis
24 LMA PacMed
25 Smiths Medical
26 Pelican Australia
27 Novagenex
28 Ferno Australia
29 Ferno Australia
30 APL Healthcare
31 Mediquip
32 BD
33 Medical + Optical
34 Implox

TRADE EXHIBITORS

AMMA would like to thank the following exhibitors for their support

TRADE BOOTH 1

MEDLINE

Medline is the largest privately held provider of medical products and services in the United States, now with a direct presence in Australia. We are the fastest growing manufacturer and distributor of medical and surgical products globally, supplying hospitals.

We pride ourselves on the high quality of our products and as an industry leader in many product categories such as, surgical gloves, masks, clippers, custom procedure packs, drapes, gowns, suction systems and wound drains, we believe we are well placed to not only meet the clinical needs of our customers, but to partner with them in order to achieve mutually beneficial business relationships.

www.medline.com

TRADE BOOTH 2

CENTRE FOR MILITARY & VETERANS HEALTH (CMVH)

CMVH is an internationally unique collaboration between The University of Queensland, The University of Adelaide and Charles Darwin University to improve lifelong health management for Defence, veterans and future personnel.

CMVH strengthened our international reputation as the pre-eminent provider of military and veterans' health research, professional development and communications in the Asia-Pacific.

CMVH is the preferred health research provider for the Australian Defence Force, conducts studies for the Department of Veterans' Affairs, and also undertakes independently funded research.

CMVH provides lifelong health management. CMVH is dedicated to improving the health and wellbeing of past and present Defence personnel. By investigating a wide range of physical and mental health issues, we help build military capability and enhance the cognitive wellbeing of Defence personnel and veterans.

CMVH develops tomorrow's professionals through our internationally-renowned training. We aim to enhance Defence health standards and increase the employability and retention of its personnel. CMVH is committed to continually enhance the way we communicate with our key stakeholders.

www.cmvh.org.au

TRADE BOOTH 3 & 4

INOVA PHARMACEUTICALS

iNova Pharmaceuticals – A Valeant Company is an Australian operated pharmaceutical company with leading consumer healthcare and specialty prescription brands.

"We are committed to improving human health and well being by providing valued pharmaceutical products and services to patients and consumers."

iNova Pharmaceuticals has a broad portfolio of market leading brands in weight loss, dermatology, cough and cold, sun care, therapeutic skincare and cosmetics. Our broad product range comes from a heritage of many years of innovation and, more recently, in-licensed products. iNova Pharmaceuticals products are prescribed by specialist healthcare providers and general practitioners and supported by pharmacy recommendation.

Our OTC brands include:

Skincare brands Dermaveen®, Dr. LeWinns® and Revitanail®

Cough, Cold and Allergy brands DifflamTM, Duro TussTM, Nyal®, ZepAllergyTM and Rinar®

Suncare brands Hamilton®, Invisible Zinc®, Reef and UV Triplegard.
Our Prescription brands include drugs in weight management, dermatology, pain management, neurology and sexual health.

www.inovapharma.com

TRADE BOOTH 5

PROMETHEUS MEDICAL

Prometheus provides an extensive range of specialist medical equipment and consultancy based on our clinical expertise in pre-hospital trauma care, major incident and disaster management, combat casualty care, primary care and remote medicine.

With a track-record for sourcing, design, assessment and delivery, Prometheus can assemble the best medical supplies and latest equipment. Our specialist team has expertise in providing medical support under the most challenging circumstances. We pride ourselves in tailoring the best solution for our clients and our internationally respected medical consultants are waiting to provide cutting-edge advice, modelled to your exact requirements.

www.prometheusmed.com.au

TRADE EXHIBITORS

TRADE BOOTH 6

MENTAL HEALTH, PSYCHOLOGY & REHABILITATION BRANCH

MHP&R Branch is a multidisciplinary organisation responsible for the development, interpretation and evaluation of all clinical and professional governance frameworks, standards of care and health personnel training, policies, procedures and programs of care related to mental health, psychology and rehabilitation.

Vision

Optimise mental health and wellbeing of ADF members and their families.

Mission

To provide policy, programs and systems that strengthen resilience and enhance recovery.

Branch Structure

The Branch structure has been designed to best meet the VCDF strategic objective of optimal health, wellbeing and personal effectiveness through a continuum of prevention, early intervention, treatment and rehabilitation

www.defence.gov.au/health

TRADE BOOTH 7

KARL STORZ ENDOSCOPY

Since its beginnings in 1945, KARL STORZ has established itself worldwide as an international and highly regarded company in the production and sale of the highest quality medical instruments and devices.

We will be proudly exhibiting the KARL STORZ Total Airway Management Solution. This includes a range of airway management products such as our Intubation Fiberscopes and Bonfils Endoscopes for difficult intubations.

Also highlighted will be our C-MAC video laryngoscope which includes blades sizes from neonate to adult. We will also be showcasing our C-CAM, NEW C-MAC Pocket Monitor, NEW single use blades and NEW flexible video endoscope.

www.karlstorz.com

TRADE BOOTH 8

MARSHALL LAND SYSTEMS

Marshall Land Systems is a Prime Systems Integrator specialising in world class Deployable Health Systems enabling the best possible patient outcomes. We provide modular and scalable Medical Treatment Facilities from Role 1 to Role 3 including, if required, any medical equipment required for full turn-key solutions. Our solutions can be hard or soft walled shelters, or frequently a hybrid of both types. Individual modules such as CT Scanners, Operating Theatres and Intensive Care Units can also be integrated into existing facilities. Other capabilities include casualty loading systems and complete integrated ambulance solutions. We also provide through-life support, including on deployed operations.

www.marshall-ls.com

TRADE BOOTH 9

MAQUET

As a trusted partner for hospitals and clinicians since 1838, Maquet is a global leader in medical systems that advance surgical interventions, cardiovascular procedures and critical care. Maquet develops and designs innovative products and therapeutic applications to improve outcomes and quality of life for patients. The company focuses on the operating room, hybrid OR/cathlab, intensive care unit, and patient transport within acute care hospitals.

MAQUET has three specialty Divisions:

- Surgical Workplaces – Equipment for surgical workplaces
- Critical Care – Anaesthesia system and workstations for intensive care
- Cardiovascular – Medical devices, equipment and instruments for counterpulsation therapy, cardiac and vascular surgery

www.maquet.com

TRADE EXHIBITORS

TRADE BOOTH 10

MAYO HEALTHCARE

MAYO HEALTHCARE is one of the largest privately owned medical device distributors in Australia. Our Vision is to provide quality service and products to the Australian healthcare market and to ensure that products and services supplied exhibit the highest possible standards in the industry.

We specialise in the exclusive distribution of products for:

- Cardio-Vascular
- Respiratory
- Non-Invasive Ventilation
- Education Services

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TRADE BOOTH 11

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Since 1953 Defence Health has provided outstanding service and valuable health insurance to the Defence community.

Being a not-for-profit organisation, our focus is on maximising benefits for our members. We do not have to pay dividends to shareholders or income tax to the government.

Approximately 90% of contributions are returned to our members as benefits and we operate on one of the lowest cost structures in the industry. That's why Defence Health continually outperforms most other health funds.

Membership is open to all current and former members of the ADF, employees of the Department of Defence, contractors to Defence and their extended family members.

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Taleb Medical primarily provides One-Stop-Ventilation-shop for equipment and Consumables (Masks & Ventilation Hoods) used across all areas of the respiratory care spectrum including Neonatal to Adult, Invasive and Non-Invasive, Stand alone CPAP/BIPAP, Dedicated & or Combined Ventilators for Homecare, Sleepcare (OSA), ICU, MRI, HDU, A&E, CT, Physio, Transport, Disaster and/or Mass Casualty Preparedness units & M.A.S.H. We also provide best-in-class Niche products including The World's most capable & robust hand held Capnograph /Oximeter and Cardiac Science Defibrillators etc….

For Instant Solutions to all your Sleep & Homecare Ventilation Needs Call 03 9330 4940 for demo and/or trial.

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DEPARTMENT OF VETERANS AFFAIRS (DVA)

DVA's mission is to support those who serve or have served in defence of our nation and to commemorate their service and sacrifice. One way DVA provides support is by delivering a range of health care and rehabilitation services to eligible veterans and their families.

The DVA booth will showcase information to assist medical providers to access DVA services on behalf of the veteran community.

Address: DVA has offices in each state and territory
Phone: DVA provider enquiries:
Ph: 1300 550 457 (metro)
Ph: 1800 550 457 (regional)
Email: providerpartnering@dva.gov.au

www.dva.gov.au

TRADE BOOTH 14

LAERDAL

Laerdal, one of the world's leading providers of Healthcare Solutions, is dedicated to helping save lives with products and services for Simulation, Airway Management, Immobilisation, Basic Life Support, Advanced Life Support, Patient Care, Self-Directed Learning, and Medical Education. Laerdal is pleased to serve all healthcare providers and educators, from the lay rescuer to the medical professionals. Laerdal operates sales and support offices in 23 countries worldwide, and with the head office located in Stavanger, Norway. For more information, visit www.laerdal.com or call 1800-331-565.

www.laerdal.com

TRADE BOOTH 15

ZOLL MEDICAL

ZOLL Medical develops and markets medical devices and software solutions that help advance emergency care and casualty survivability. With products for defibrillation and monitoring, circulation, data management, fluid resuscitation, and therapeutic temperature management, ZOLL provides a comprehensive set of technologies to treat casualties needing critical care.

ZOLL also has a long history with Military organisations around the world. Products such as the M Series CCT, PropaqM and PropaqMD, Power Infuser, and AED Pro have been used in the military environment for many years. ZOLL products can be integrated into the Deployable Health System and will increase casualty survivability, and provide a reliable continuum of care along the evacuation system. Use of the products by the ADF can also enhance seamless interoperability with US military medical support being provided to the ADFs.

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VOROTEK
experience. knowledge. performance

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VOROTEK

Vorotek was founded in 1971 by Australian ENT surgeon Dr John Vorrath.

For almost forty years Dr Vorrath has been developing and manufacturing fully integrated optical systems with illumination.

His aim has always been to provide users with products that greatly enhance their capability for examination, instrumentation and procedures.

Now over 95% of Australian ENT surgeons use the Vorotek O Scope (converged binocular optical system with LED illumination).

In 2009 Vorotek launched the Vorotek L Scope, incorporating fully integrated loupes and brilliant LED illumination.

The L and O Scopes are head worn, lightweight and durable, operating off a battery pack which provides 10 hours of on-time.

www.vorotek.com.au

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TRADE BOOTH 17

VERATHON MEDICAL

Verathon's GlideScope® Ranger is a portable, rugged and shockproof video laryngoscope that offers a consistently clear view of the airway, enabling quick intubation and is of particular use for patients with traumatised/complex and routine airways. Widely deployed in hospitals, EMS and military medicine settings, the GlideScope® Ranger Video Laryngoscope is highly dependable in an array of field conditions and has recently been granted airworthiness certification from the US Army for use by military healthcare professionals.

www.verathon.com

TRADE EXHIBITORS

TRADE BOOTH 18 & 19

ASPEN MEDICAL

Aspen Medical is a privately owned global healthcare solutions provider. Aspen Medical was established to provide the highest quality healthcare in environments that are remote, challenging and under-resourced.

Aspen Medical has the capabilities and experience to deliver healthcare solutions in complex environments throughout the Pacific region, South East Asia, America, the Middle East, and the United Kingdom.

This is satisfied through a unique combination of flexible teams of health practitioners, including doctors, nurses and paramedics, combined with mobile medical facilities and highly refined medical processes and procedures. This project management model gives Aspen Medical the ability to deliver an expanding number of health services around the world.

www.aspenmedical.com.au

TRADE BOOTH 20

RYMED

Rymed Pty. Ltd., distributes medical/ surgical equipment.

Our Medical Division is focused in Trauma Care Products, including the Impact Transport Ventilators, Progetti Portable Defibrillators and Summit Ear Popper, for the non-surgical treatment of Otitis Media, Aerotitis/Barotitis and Eustachian Tube Dysfunction caused by rapid change in air pressure.

Our Surgical Division handles a range of Erbe Electrosurgical products, including HF surgical diathermy for field hospitals.

To facilitate a seamless operation, our Warehousing, Shipping, Admin, Technical Service, Sales and Marketing departments are housed in the same facility. Our Tech Support team maintain test documentation, compliant to CE and Australian standards.

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TRADE BOOTH 21

INTERNATIONAL SOS

International SOS is the world's leading medical & security services company operating from over 700 sites in 70 countries with 10,000 employees, led by 1,100 physicians and 200 security specialists. Our global services include medical and risk planning, preventative programs, in-country expertise and emergency response for travelers, expatriates and their dependents of over 70 percent of the Fortune 500 companies.

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TRADE BOOTH 22

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Contact: Mark McKechnie
Chart Australia BioMedical Pty Ltd
Ph: 02 9749 4333
Mob: 0432 388 200

www.chartindustries.com

Cellestis, a QIAGEN Company

TRADE BOOTH 23

CELLESTIS, A QIAGEN COMPANY

Cellestis, a QIAGEN® Company develops and markets the QuantiFERON®-TB Gold In-Tube (QFT®), an innovative whole-blood test that measures the cell-mediated immune response of tuberculosis (TB) infected individuals. Approved by the FDA—and CE marked — QFT is a modern replacement of the tuberculin skin test (TST), provides clinicians with an accurate, confident and efficient tool for the diagnosis of TB infection.

www.cellestis.com

LMA™ LMA PacMed

TRADE BOOTH 24

LMA PACMED

LMA PacMed specialises in innovative Airway Management devices, and offers products for Anaesthesia, Emergency, ICU, CCU, ENT, Operating Theatres, Speech Pathology and Laryngectomy. Our pre-hospital & military portfolio features laryngeal masks, intranasal drug delivery, patient warming & video laryngoscopy devices.

Since the development of the first Laryngeal mask over 20 years ago LMA PacMed has been the exclusive distributor of LMATM products for Australia and New Zealand.

Through professionalism and integrity it is our passion to become the supplier of choice in each therapy area we support, and to be recognized for our unparalleled standard of education and customer service.

www.lmapacmed.com

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TRADE BOOTH 25

SMITHS MEDICAL

Smiths Medical is a leading global provider of medical devices for hospital, emergency, home and specialist environments.

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By listening to clinicians Smiths Medical continually provides the equipment, service and expertise you should expect whilst consistently delivering value, safety, quality and performance

Smiths Medical offers some of the most respected and easily recognisable brands: Portex™, Medex™, CADD™, Deltec™, Level 1™Pneupac™, Wallace™, Jelco™, and Medfusion™.

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PELICAN™

TRADE BOOTH 26

PELICAN AUSTRALIA

Pelican Products, Inc. is the global leader in design and manufacture of both high-performance case solutions and advanced portable lighting systems. Their products are used by professionals in the most demanding markets including firefighters, police, defense / military, aerospace, entertainment, industrial and consumer. Pelican products are designed and built to last a lifetime.

www.pelicanaustralia.com

TRADE EXHIBITORS

TRADE BOOTH 27

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Novagenex is an Australian owned sports nutrition company specialising in performance energy, recovery and general well being. Our team involves experts in nutrition and sports science, all Novagenex products are scientifically researched and have been tested by sports scientists under a variety of environmental conditions.

At Novagenex we believe that understanding how one's body works and providing it with the nutrition it requires will lead to greater performance. Only natural ingredients are used that will reward the effort put into being active.

Our range is simple to use, easy to understand and great tasting. Special care is taken to ensure that all our products are formulated without any additives, artificial colours, flavours and sweeteners.

So whether you are an elite athlete or just enjoy some form of exercise, Novagenex sports nutrition will help you enjoy your favourite activity more with the benefits you will receive from using our products.

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TRADE BOOTH 28 & 29

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Ferno Australia serves those who serve. Over 50 years ago, Ferno developed the first one-man stretcher. We've been offering cutting-edge products ever since. No one can predict when emergencies will happen, but Ferno can help you prepare for it with the broadest range of tried and true gear offered in Australia.

At AMMA 2012 we'll be showcasing efficient, durable yet lightweight gear from Ferno's military division plus other high performance new products. If you're interested in inventive, outside-the-square solutions that work, visit us on Stands 28 – 29.

www.ferno.com.au

TRADE BOOTH 30

APL HEALTHCARE

APL Healthcare's founder, a former MICA Flight Paramedic has been an Australian distributor for the NASCO & Simulaids range of training aids since 1994, an agent for First Care Products – ('Israeli Bandage' – World's-Best) since 2007, becoming a distributor in 2012, along with others such as Medsource International and Aero Health.

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TRADE BOOTH 31

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Our partnership with CAE Healthcare/Meti Learning was seen as a natural progression and the relationship has been developing rapidly from day one. CAE's superior quality, highly technical range of Patient and Surgical simulators fit firmly within our product portfolio.

www.mediquip.com.au

TRADE BOOTH 32

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BD is a leading global medical technology company that develops, manufactures and sells medical devices, instrument systems and reagents. The Company is dedicated to improving people's health throughout the world. BD ANZ has been a major supplier to the Australian and NZ Healthcare Market for the past 28 years. BD Medical offers a range of products including conventional and safety needles and syringes, sharps disposal systems, ophthalmic surgical instruments, anaesthesia specialty needles, critical care monitoring devices, infusion cannulae and accessories.

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MEDICAL + OPTICAL

Medical + Optical Instruments (Australia) Pty is a quality specialist provider to the Health Care market, with sales and service offices throughout Australia and New Zealand. Our four Divisions work together to ensure that we provide the best products and service to meet our customers individual needs

Our core product range includes medical equipment in the form of operating theatre lights and pendants, cranio maxillofacial implants, orthopaedic implants for upper and lower extremities, electrosurgical products and instruments for most disciplines, instrument tracking and CSSD products.

Medical + Optical are committed to exceeding expectations of our customers by providing high quality products and exceptional service.

www.medopt.com.au

TRADE BOOTH 34

IMPLOX

Established in 1989, implox Pty Ltd is a successful Australian distributor of equipment and consumables to the healthcare market.

We specialise as a single source supplier of quality goods for all areas of health care. Our product portfolios include :

- Intensive and Critical Care
- Peri-Operative Care
- Anaesthesia
- Airway Management
- Emergency Health Care
- Resuscitation and defibrillation
- Healthcare Education and Training
- Medical Gas and Suction
- Rescue and Extrication
- Respiratory Care and Assessment
- Patient Monitoring and Assessment

Our aim is to exceed the needs and expectations of our customers in a professional and ethical manner.

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NOTES


ABSTRACT
PRESENTATIONS

MOTION SICKNESS DESENSITISATION: A REVIEW OF ADF EXPERIENCE OF 'SUCCESS'

ADRIAN SMITH, SONU QURASHI

Adrian Smith is a Specialist in Aerospace Medicine and research medical officer with the RAAF Institute of Aviation Medicine and HQ Forces Command.

Sonu Qurashi is a 4th year medical student at University of Adelaide who completed this project under the supervision of Dr Smith.

Motion sickness is a well-known phenomenon in aviation, predominantly amongst student pilots early in their flying training. As with many other air forces, the Royal Australian Air Force runs a motion sickness desensitization programme, comprising a 3-week course of repeated cross-coupled coriolis stimulation followed by a series of in-flight desensitisation maneouvres. Progression through the cross-coupled stimulation phase with increasing rpm is determined by subjective comfort and vertigo time. Similar programmes around the world have reported 'success' rates between 70-90%; the AVMED desensitization programme claims a success rate of 91%. However, in reviewing different MSD programmes, the lack of an accepted definition of 'sucess' made it difficult to compare one programme with another. 'Success' can be defined as: completing the MSD protocol, returning to flying training, successfully completing basic flying training, or successful operational converison onto a front-line aircraft. During the period 1997-2011, AVMED had perfomed 33 MSD courses on 30 aircrew. Of the 33 sessions, only 16 (48%) fully met the criteria for successful completion of the protocol, with another 13 (39%) being considered partial success and encouraged to return to flying, giving a notional 'success' rate between 48% and 87%. However, of the 20 student pilots followed up by interview, only 10 (50%) completed basic flying training, although the extent to which their failure was attributed to motion sickness could not be determined. Of the pilots who completed their flying training, 75% describe persistent operationally-significant motion sickness. This presentation will explore some of the reasons identified that can explain why so many people who passed the MSD protocol were unable to complete flying training, including interuption to flying training and infrequent provocative flying. Finally, this presentation will discuss an improvement to the way MSD candidates are followed up and managed when they return to flying, and improvements in the communication between the flying instructors and AVMED in determining the extent to which motion sickness persists in student pilots despite them having undergone MSD, and the extent to which this may contribute to failure in flying training.

TRANSFUSION PRACTICE IN CRITICAL CARE BURNS PATIENTS – LESSONS FOR THE MILITARY

CMDR ANTHONY HOLLEY, MR NICK MCKEOUGH RN, LTCOL MICHAEL READE

Anthony is a dual qualified intensivist and emergency physician working at Royal Brisbane and Women's Hospital as a senior staff specialist. He is a senior lecturer with

the University of Queensland Medical School and Chairman of Australia New Zealand Intensive Care Society, Queensland. Anthony was the recipient of the Matthew Davey Award that facilitated study at the Netherlands Military Blood Bank. He serves as a representative for the National Blood Authority Critical Care Expert Group. Anthony has deployed on a number of occasions including to Angola, Bougainville, East Timor, The South Pacific, The Persian Gulf and most recently to Afghanistan.

Introduction: There are no guidelines specifically directed to inform transfusion strategies in serious burn injury patients. This study was designed to describe the transfusion practice and evaluate the effects of transfusion on seriously burned patients. The study setting was a large university tertiary hospital intensive care unit, which is the only referral centre for burns injury in the state.

Methods: All burns patients admitted to a tertiary hospital referral centre intensive care over a 40 month period (9 December 2008 to 30 April 2012) were retrospectively identified. The patients were stratified on the bases of body surface area burned. The total number of blood product transfusions provided throughout the patient's admission was determined, including the number of units of blood transfused in and out of the operating theatre. Transfusion triggers were identified as active burn bleeding, active bleeding from "non burn" source, absolute haemoglobin level, and prophylactic transfusion prior to an invasive procedure or correction of coagulopathy (as diagnosed by International Normalised Ratio > 1.5 and Activated Partial Thromboplastin Time > 60 seconds). Outcome measurements included mortality, number of infections (diagnosed by the commencement of antibiotics), and length of stay, duration of mechanical ventilation, acute kidney injury and number of surgical procedures.

Results: 158 burns patients were identified during the study period with a mean age of 41.6 years. The distribution according to burn surface area (BSA%) included 26 (0-9%), 21 (10-19%), 34 (20-29%), 23 (30-39%), 14 (40-49%), 10 (50-59%), 5 (60-69%), 1 (70%-79%), 10 (80-89%), 4 (90-100%) with 10 patients admitted with isolated airway burns. The mean APACHE II score was 17 +/- 7.5 with an average length of ICU stay of 10.99 days and a median length of stay of 5.95 days. The ICU mortality was 8.22%, but adjusted for "an intention to cure" was 0.63%. The mean number of transfusion episodes per patient for the duration of their ICU admission was 4.8 episodes (CI 1.66 95%). Most transfusions were performed in the intensive care unit as opposed to the operating theatre (3:1). The most frequent indication for transfusion were absolute haemoglobin correction, with prophylactic transfusion prior to an invasive procedure the next most common indication. Active bleeding from burn and "non burn" sites also constituted important indications. The mean INR triggering fresh frozen plasma transfusion was 1.6 +/- 0.92 (95%). The mean haemoglobin transfusion threshold was 89.1 +/- 25 g/dl and the mean platelet transfusion trigger was 66 x 109/L +/- 63.

Conclusion: The most common indication for transfusion was anaemia. Practice was

however highly variable. There also exists an association between units transfused and the number of infectious episodes, duration of stay, and duration of mechanical ventilation in patients with major burns, even after adjusting for burn severity. We were unable to demonstrate an association between the number of transfusions and mortality. Guidelines need to be established to inform rationale transfusion strategies for all blood product transfusions in the burn injury population.

LUMBAR MULTIFIDUS MUSCLE SIZE IS ASSOCIATED WITH LOWER LIMB OVERUSE INJURIES IN MILITARY SPECIALIST TRAINEES

MR GEOFFREY CROWLEY, DR MARK CREABY, MS SHARNE NEILL, PROF JULIE HIDES, DR MELINDA SMITH

Geoff is Senior Physiotherapist at the Amberley Health Centre, RAAF Base Amberley, Queensland.

Introduction: Lower limb overuse injuries are a significant cause of lost training time in military recruits. Recent studies in other active populations provide evidence that the lumbopelvic and hip muscles may be associated with lower limb injuries. For example, decreased size of the lumbar multifidus muscle was predictive of lower limb injuries in football players and deficits in control of the trunk have been shown to be predictive of knee injuries in athletes. Similarly, a deficit in hip muscle strength has been associated with occurrence of lower limb injuries in college athletes. An important function of the lumbopelvic and hip muscles is effective load transfer and distribution of forces along the kinetic chain. Therefore the lumbopelvic and hip muscles play an important role in weight bearing activities. Given the relationship between lumbopelvic muscles, hip muscles and lower limb injuries reported in other active populations, the aim of this study was to compare lumbopelvic muscle size and hip muscle strength in military specialist trainees with and without a history of lower limb overuse injury.

Methods: Twenty-two male RAAF recruits participated in this study. All recruits successfully completed the 16-week RAAF basic training course. Injury history during the basic training course was established from military records. Participants were classified as either having sustained a lower limb overuse injury during basic training (LLOI), or not sustaining any injury during basic training (CTRL). Participants that sustained upper limb, trunk or acute injuries were excluded from this study. Bilateral ultrasound images of lumbar multifidus & quadratus lumborum were captured and measured to determine muscle cross sectional area (CSA, cm2). Maximal isometric strength tests of hip abduction and external rotation were also performed. Strength was reported as rotational force per. kilogram of bodyweight (Nm.Kg). Participants were uninjured at the time of testing and all measures were taken prior to the commencement of Air-Ground-Defence specialist training. Independent t-tests were used to compare differences between the previously injured leg in the LLOI group and right leg in the CTRL group; an Alpha level of 0.05 was set.

Results: Age, height and weight were similar in the LLOI and CTRL groups ($p>0.05$). The CSA of lumbar multifidus was significantly greater in the CTRL group

(9.41 ± 1.39 cm2) compared with the LLOI group (7.40 ± 0.48 cm2), p = 0.01. Conversely, there was no difference observed in the CSA of quadratus lumborum between groups (CTRL=7.23 ± 1.47 cm2; LLOI=6.30 ± 1.22 cm2), p = 0.26. No differences in hip abduction and hip external rotation strength were observed between the groups (p = 0.69 and 0.93 respectively).

Discussion: This study provides preliminary evidence that the CSA of the lumbar multifidus muscle is associated with lower limb overuse injuries during basic training. Given that decreased CSA of lumbar multifidus has been implicated in injury development in other populations, it would be prudent to screen for small lumbar multifidus CSA in injured recruits and consider targeted treatment of this muscle where appropriate. Future studies could assess whether an intervention program aimed at increasing the size of the lumbar multifidus muscle would reduce the likelihood of developing a lower limb overuse injury in Defence members.

PENETRATING INTRACRANIAL INJURY CAUSED BY MUD

DR MARTIN CHRISTIE, M.B.CH.B., DIP. OBS., F.R.A.C.S.

Martin trained in medicine initially in Rhodesia, and served as a Captain in the Rhodesian Army Medical Corps during his National Service during the early phases of enemy incursions. He then moved to Papua New Guinea, where he worked as a General Medical Officer for two years. This was followed firstly, by training in General Surgery and subsequently Neurosurgery, both in Dunedin, New Zealand. His later career included periods in the Republic of Kiribati, in Cambridge, UK, and Auckland, NZ. This was succeeded by eight years in Saudi Arabia, spanning both Gulf Wars, with exposure to casualties, as well as providing neurosurgical care for patients from the Bosnian conflict, and patients transferred to Saudi Arabia from the civil war in Yemen. He moved to Coventry, UK, working as a consultant neurosurgeon in the NHS. He has served four tours of duty in Afghanistan as neurosurgeon to the NATO coalition, after retiring from the NHS. More recently he has instructed military doctors in the new state of Southern Sudan. Recently retired, he lives in Sydney.

The proliferation of explosive devices cached beneath the earth leads to predictable patterns of injury. In the explosion multiple metallic fragments are sprayed out, together with the overlying soil and its various components. Among the consequences for persons near to such detonations is the penetration of the body by these soil components as a result of the kinetic energy imparted to them from the explosion. The velocity and mass of the individual particles have a direct bearing on the damage sustained in human tissue during the abrupt process of stopping so that a piece of gravel travelling at speed will do more harm than a grain of sand.

A case was recently encountered during the current conflict in Afghanistan, where it appears that the explosion resulting from an improvised explosive device (IED) triggered by a pressure plate, caused a clod of overlying mud to possess sufficient penetrating power to fracture the skull and enter the cranial cavity. The emergency surgical treatment and difficulties in

recognition of this injury are described. The rarity of this mechanism of injury is in contrast to the patterns of injury usually sustained in such incidents. Expeditious intervention is crucial in dealing with this type of contamination in the intracranial extradural space and serves to emphasise the importance of placing neurosurgeons amongst the personnel closest to the battlefield.

TENDINOPATHIES, ENTHESOPHIES, OVERUSE INJURIES AND ALPHABET SOUP. WHERE IS THE SCIENCE?

TONY DELANEY

Dr Delaney conducts a specialist sports medicine practice at Narrabeen Sports Medicine Centre, Sydney Academy of Sport, Narrabeen.

He was the visiting senior specialist in sports and rehabilitation medicine to the Fleet Base East Medical Centre, HMAS Kuttabul and 1HSB, Holsworthy Military Area.

He was principal of the Medical Centre, Charlotte Pass, Snowy Mountains 1974-92 winter seasons. The practice is snowbound and provided acute trauma, radiology, emergency, general and sports medicine service Charlotte Pass Ski Patrol coordinated with Snowy Mountain Search and Rescue services.

His Special Interests are:

- *Biomechanics, overuse and acute injuries of the spine, lower limb and upper limb.*
- *Human performance, physiology and medicine in the environments of heat, cold, high altitude and underwater.*

Military Medicine.

How do we decipher Corticosteroid injections, Plasma rich protein, Autologous blood injection. Nitric Oxide patches, Low Intensity Pulsed Ultrasound, Extracorporeal Shock Wave Therapy ,Faradics, Interferential, Acupuncture, Dry needling for treatment of chronic and acute overuse injuries. The scary thing is that most modalities are a waste of time and money. The clinician who addresses the biomechanical causes of these syndromes will achieve optimum results. This presentation will provide a summary of current best practice for tennis elbow, shoulder impingement, patellar and Achilles tendinosis, plantar fasciosis. All of the things that frustrate you in clinical practice in Military Medicine.

CURRENT THEMES IN OPERATIONAL MENTAL HEALTH

MAUREEN MONTALBAN

MAJ Maureen Montalban is currently the Officer Commanding of the 1st Psychology Unit, Sydney Detachment. She joined the Regular Army in 2004 as a psychology officer and throughout her career has worked in research, assessment, counselling, training and operational psychology. MAJ Montalban has deployed in support of ADF personnel to Operation CATALYST, Operation ASTUTE, Operation ANODE and Operation SLIPPER. She is currently in her final year of her Master of Psychology (Health).

This presentation will cover the key operational mental health themes from all areas of operation through discussion of both the questionnaire data obtained through the Return to Australia Psychological Screens (RtAPS) and Special Screens; as well as through referrals on operations, command liaison and early intervention activities. These screening tools and interventions not only assist with the mental health surveillance of the workforce, they also provide a mechanism for identifying groups who may be at high risk of exposure to stress or trauma. The ongoing work with groups identified as being "at risk", including specific interventions to assist with mental well-being, will be discussed.

ENHANCING CAPABILITY AND RESILIENCE THROUGH POSITIVE PSYCHOLOGY

MARK MATHIESON (MAJOR – ARMY RESERVE)

Mark is a registered Psychologist and currently serving Major in the Army Reserve – Australian Army Psychology Corps.

Mark has experienced a broad variety of roles within the industrial psychology sphere and has served the ADF for over 15 years including six years supporting Special Forces and numerous deployments. Mark has designed, managed and successfully achieved outcomes on diverse and complex civilian projects including green-field LNG sites in Papua New Guinea, mining companies across Australia and in Laos and Timor Leste, utility companies, NGO's and with individuals and organisations working in the sustainability sector.

The last decade has seen a rapid growth in the field of Positive Psychology, including the application of Positive Psychology frameworks and tools in the areas of education, employment and individual psychotherapy. Outcomes in these areas have shown a remarkable capacity to build both excellence in performance, but also robustness and resilience in individuals who are provided with the tools and knowledge to buffer against the demands of difficult times. Many organisations are now turning to proactive models of intervention in order to 'front load' individuals and teams with resilience and a capacity to cope. Whilst the natural assumption may be that building resilience is simply the removal or reduction of existing stressors or an enhancement of an individual's capacity to move themselves from negative functioning back to 'normal

functioning' when times are bad , Positive Psychology theory and research suggests that a different set of variables need to be developed if individuals are to move towards 'maximal functioning'. In this interesting and though provoking presentation, Mark will outline the basis and theoretical models underpinning Positive Psychology and how they can be applied to build resilience and coping capacity in individuals within the ADF and Veterans communities. Based on his 15 years of experience in working with individuals and organisations selecting, deploying and returning people from isolated and remote environments including the ADF in general, on operations, Special Forces Selection Courses and the Australian National Antarctic Research Expedition, Mark will use real life examples of how Positive Psychology can significantly enhance capacity, protect against negative mental health outcomes and ultimately – enhance capability.

PRE-DEPLOYMENT BATTLESMART: THE DEVELOPMENT AND EVOLUTION OF PSYCHOLOGICAL RESILIENCE TRAINING FOR ADF PERSONNEL PREPARING FOR OPERATIONS

NICOLE SADLER

COL Nicole Sadler is currently the Director Strategic and Operational Mental Health within Joint Health Command. COL Sadler joined the Regular Army in 1994 as a psychology officer and throughout her career has worked in recruitment, assessment, counselling, training, policy development and operational psychology. She was the Commanding Officer of 1st Psychology Unit Jan 10-Aug 12. COL Sadler has deployed in support of ADF personnel to Operation BEL ISI, Operation SUMATRA ASSIST, Operation CATALYST, Operation ASTUTE and Operation SLIPPER. She completed the Australian Command and Staff Course in 2004 and was awarded a Master of Psychology (Clinical) degree in 2005.

Following the Dunt Review and the Government's 2007 commitment to a Mental Health Lifecycle Package for ADF personnel, the ADF commenced rolling out a comprehensive whole of career resilience training program named BattleSMART (Self Management and Resilience Training) in 2009. BattleSMART is a modularised educational program that operates across the ADF, teaching resilience training at key points throughout a member's career. It is a preventive program designed to build psychological resilience by teaching ADF personnel to test and adjust their physical, cognitive, emotional and behavioural reactions to stressful situations as required, to optimise their performance.

The pre-deployment BattleSMART component was developed by staff from the Directorate of Strategic and Operational Mental Health, Joint Health Command and 1st Psychology Unit and was first trialled in 2010. Pre-deployment BattleSMART focuses on the specific challenges likely to be faced leading up to and during deployment, and promotes both individual and collective optimal performance through the enhancement of individual coping. Training delivery is a combination of instructor led theory presentation and practical exercises, and the results of recent evaluations conducted with soldiers preparing for Operation SLIPPER have been very positive. This presentation will outline the development and evolution of

pre-deployment BattleSMART, the program content, evaluation outcomes, and the mechanisms for continuously reviewing and updating the content to ensure relevant information is presented to ADF personnel as they prepare for the different Areas of Operations.

RESET – RECOGNISING EARLY SIGNS OF EMERGING TRAUMA: AN INDICATED PREVENTION PROGRAM FOR PTSD

DR STEPHEN RAYNER & MS JANE NURSEY

Stephen Rayner is contracted to Joint Health Command as Programs Manager at the ADF Centre for Mental Health in Sydney. He is a clinical psychologist with over 20 years experience working for Defence as a public servant, contractor and Naval Officer and has published several papers and a book chapters on military mental health.

Jane Nursey is a Senior Clinical Specialist at the Australian Centre for Posttraumatic Mental Health (ACPMH). She is a Clinical Neuropsychologist with over 20 years experience working in public and private health and mental health services. This includes many years experience in delivering PTSD treatment programs for Veterans, current serving members, emergency services personnel and members of the community. Her work at ACPMH involves the translation of research findings into evidence based policy and service development advice as well as the training of clinicians in evidence based practice for the treatment of trauma related mental health disorders.

The ADF has recognised a gap in the provision of a comprehensive program of interventions for Posttraumatic Stress Disorder (PTSD); and the ADF recognises that ADF personnel are at increased risk of developing PTSD due to the nature of military service. While there are recognised general and targeted prevention strategies, and treatment for diagnosed disorders, there exists a gap for indicated prevention strategies – those targeting people who have early and detectable indicators foreshadowing emerging PTSD, but who do not yet have a diagnosable disorder. Indicated prevention strategies have been applied to depression and anxiety, but there is limited acceptance of this type of intervention for PTSD. The ADF, in collaboration with the Australian Centre for Posttraumatic Mental Health has developed an intervention program to intervene with ADF members with emerging, but not yet diagnosable, PTSD. The program aims to increase resilience to PTSD, to manage existing and potential symptoms of PTSD, reduce the likelihood of progression to disorder, and improve quality of life. The program is evidence-informed and based on existing practice guidelines. The program has been piloted recently, and this paper will describe the development of the program and report on preliminary evaluation data from the pilot program

MILD TRAUMATIC BRAIN INJURY (MTBI) IN THE AUSTRALIAN DEFENCE FORCE: RESULTS FROM THE 2010 ADF MENTAL HEALTH PREVALENCE AND WELLBEING DATASET

ALEXANDER MCFARLANE

Professor Alexander McFarlane currently the Head of the University of Adelaide Centre for Traumatic Stress Studies and is

chief investigator on the Mental Health Prevalence Study. He qualified in Medicine in 1976 with Honours and completed his specialist training in Psychiatry in 1980. In 1990 he was awarded the degree of Doctor of Medicine based on his longitudinal research into the aftermath of the Ash Wednesday Bushfires in South Australia. Subsequently he became an international expert in the field of the impact of disasters and posttraumatic stress disorder (PTSD). He has published over 250 articles and chapters in various refereed journals and has co-edited three books. He currently holds the rank of Group Captain in the RAAF specialist reserve. In 2011 he received the Officer of the Order of Australia award in the Australia Day Honours List. The award recognises outstanding contributions to medical research in the field of psychiatry, particularly posttraumatic stress disorders, to veterans' mental health management, and as an author.

The occurrence of mild traumatic brain injury (mTBI) has attracted much attention in the research literature, as well as public domains (such as the media), in recent years. This has emerged due to a suspected increase in mTBI, thought to be the result of increased use of explosive devices in combat in the last decade. Accurate prevalence estimates of MTBI are extremely difficult to ascertain given the non-specific nature of post-concussive symptoms, measurement issues (to determine the degree of combat exposure), variation in deployment length as well as cultural differences such as compensation practices and healthcare systems across countries. Understanding mTBI in the context of deployment is important owing to the implications for healthcare provision, deployability status and compensation for affected veterans. As such, there is a distinct lack of epidemiological estimates of mTBI in military populations, including the Australian Defence Force that needs to be addressed. This presentation will examine the lifetime prevalence of self-reported head injury in a representative sample of the ADF. Mechanisms of injury, frequency of reported post-injury symptoms, differences between deployed and non-deployed groups, and relationships between injury and various psychiatric disorders will also be explored.

DEVELOPMENT OF A MEDICAL OFFICER PHARMACOLOGY TRAINING PACKAGE FOR THE RAAF – UPDATE

SQNLDR MICHAEL LUMSDEN-STEEL

SQNLDR Michael Lumsden-Steel is an EX APF RAAF Medical Officer and now RAAFSR whilst undertaking anaesthetic training on the Tasmanian Anaesthetic Training Rotational Scheme.

Dr Michael Lumsden-Steel will present an update on the development a medical officer pharmacology training package for the Air Force.

MAINTAINING CONNECTEDNESS AND SKILLS IN THE GEOGRAPHICALLY DISPERSED CLINICAL WORKFORCE

JAMES ROSS, MEREDITH LEONARD

Dr James Ross is the Medical Director of Aspen Medical, based in Canberra. He is a Fellow of Occupational and environmental Medicine, Public Health Medicine and Aerospace Medicine, and the current President of the Australasian Faculty of Occupational and Environmental Medicine of the RACP. He is the foundation president of AMMA 1991-1995. He had 26 years in the permanent Air force, and is currently Group Captain in the RAAF specialist reserve.

As a major private health service provider, with clinical staff located across all Australian states and territories and internationally, Aspen Medical is committed to providing its geographically dispersed clinical workforce with the support and resources to provide consistently high quality health care services. Operating in remote locations does provide challenges to ensuring the health professionals maintain a connection with their employer, and their processes, and of maintaining clinical currency within the workforce.

Aspen Medical has developed and implemented a web based solution to address such challenges. Through this platform staff can access company polices, resources, and training opportunities. This solution has been well received by staff. However, such a system does raise is own challenges from which lessons must be leant in order to progress forwards. User accessibility and technical ability have proven to be the greatest hurdles.

The prioritisation of training resource development can become overwhelming. In the first instance, Aspen Medical has chosen to focus its training development energies around priority areas as identified by the Australian Commission on Quality and Safety in Healthcare. Recognised knowledge deficits or skill gaps and demand form customers have also been considered in developing a company training development plan. Examples are Clinical Practice Guideline understanding and assessment; drug calculations, common medication errors and hand hygiene.

One of the great successes of this system has been the centralisation of training records and the ability to ensure the standardised delivery of training across all sectors of our geographically dispersed workforce. This is also essential in permitting compliance with Registered training Organisation certification, and with obtaining CPD points from organisations such as RACGP.

This presentation will demonstrate the current capabilities of the system, planned improvements and lessons from Aspen's experience in establishing such a system

NORTHERN TERRITORY ADF CLINICAL PLACEMENT PROGRAM

JESSICA BURTON AND BRONTE DOUGLAS

Jessica Burton spent 8 years in the RAAF as a Nursing Officer posted to 1ATHS in Amberley and 3EHS Detachment Darwin. She transferred to the Active Reserves in 2010 to be able to clinically up skill in the Intensive Care environment and has since completed her Graduate Certificate in Critical Care Nursing. She was employed by the National Critical Care and Trauma Response Centre, delegated by the NT Department of Health, in 2011 to create and organise the NT ADF Clinical Placement Program.

The Northern Territory has traditionally had a good relationship with the Australian Defence Force (ADF) and this is fostered in many forms. Since 1999 the Northern Territory Department of Health (NT DoH) and ADF has had a Memorandum of Agreement (MOA) in place, which includes the ability to place ADF Health Personnel in a NT DoH facility on clinical placement. In 2011 a variation to the MOA was signed between the two parties and in May 2011 the NT DoH created the ADF Clinical Facilitator position; to be managed daily by the National Critical Care and Trauma Response Centre (NCCTRC). The position was created as a Nursing Level 4 (Nursing Educator Level) at 0.4FTE; the requirement was to be filled by a NT DoH member who had working knowledge of both NT DoH and ADF Health. This ensured the person was able to understand the requirements of and appropriately converse with NT DoH Managers and ADF Managers.

Since the creation of the ADF Clinical Facilitator position the responsibilities have included:

- Creating, organising and facilitating Clinical Placements for all ADF Health Personnel within NT DoH facilities.

Secondary Duties include:

- Fostering and maintaining good working relationships with NT DoH clinical areas.
- Seeking and creating opportunities for ADF Health personnel in clinical areas, education and other forms of training.
- Become a point of contact regarding all things ADF within the NT DoH.

Creation of the Clinical Placements

The NT ADF Clinical Placement Program was initially modelled off the Princess Alexandra Hospital rotations to Royal Darwin Hospital. The model deems ADF members supernumerary to the clinical areas numbers, however take a (patient) load once orientated and confident. Since the commencement of the program we have had Medical Officers, Nursing Officers, Medical Technicians and a Pharmacist conduct Clinical Placements. The areas have included Operating Theatre (including Anaesthetics), Emergency, Intensive Care/High Dependency, Cardiac Care, Acute Surgical (including Burns), General Surgical and Acute/General Medical.

The following Lessons have been learnt since the commencement of the placements:

- The ADF need an appropriate Clinical Uniform for placements
- Appropriate recalling of personnel
- Appropriate lengths of placements
- Infection Control – feeding information back into the ADF Health system
- Clinical area placement caveats – including Endorsed Enrolled Nurses

Future Ideas

- Planning a Predeployment Clinical Placement Stream – The clientele issues, clinical cases and language barriers are similar to what ADF personnel will experience on deployment or humanitarian missions.
- Clinical Placements for interstate ADF Health Personnel
- Provide Postgraduate Training for ADF Health Personnel

Overall, the ADF Clinical Placement Program has been very well received within NT DoH facilities.

REINVIGORATING CBRN HEALTH TRAINING FOR DEFENCE PERSONNEL- A NEW PERSPECTIVE

KYLIE DOUGLAS

Kylie Douglas is currently the Training Development officer for the Directorate of Workforce Development and Training at Joint Health Command. She is involved in a number of Joint Health training initiatives including the CBRN Health Course, Military Anaesthetics Course and the training requirements for the new Garrison Health Services contract. In addition Kylie is the Defence liaison officer for the Community Services and Health Industry Skills Council. Ms. Douglas has been working in Defence for the last fifteen years and previously served as a RAAF Officer. In that capacity she was involved in the establishment of the ADF Medics training continuum, the ongoing AME training requirements for ADF health personnel and the establishment of the Military Critical Care AME Team (MCAT) course. She has both clinical and operational health experience and holds a Diploma of Training and Assessment Systems in addition to a Masters of International Public Health.

Chemical,Biological, Radiological and Nuclear (CBRN) health concerns from an ADF perspective have evolved considerably since the proliferation of chemical defence weapons in WWII. Whilst the modern day threat of CBRN weaponry is arguably low, the need for Defence health personnel to be prepared for casualties with CBRN related injuries is steadily climbing. Whole Of Government responses to global crises sees our health personnel involved in numerous CBRN type incidents, such as Fukushima, whilst at home the clean up from WWII chemical munition dumps continues. How we prepare our health professionals to work in challenging conditions, recognize broad symptomatology, provide advice to commanders on public health concerns and work effectively with multiple stakeholders is paramount to a successful mission.

In the last five years competing Defence priorities has resulted in the demise of corporate knowledge surrounding CBRN health related medicine and broader CBRN awareness across Defence. The Services in recognizing this shortfall are reinvigorating

CBRN capability with Joint Health Command (JHC), Special Operations Engineer Regiment (SOER) and the Army Logistic Training Centre (ALTC) re-establishing CBRN health specific training for our personnel.

This presentation will examine the broader Defence initiatives in relation to CBRN capability and explore the challenges for health personnel in meeting both individual and collective needs. To do this, the training and outcomes of the CBRN Health course pilot conducted at SOER in September will be discussed along with the current direction of CBRN health globally

CARE IN COMBAT TRAINING FOR DEFENCE

GLENN KEYS

Glenn Keys is the CEO and Managing Director of Aspen Medical. Glenn's career covers a broad range of businesses, from start-up's to US multi-nationals. After a distinguished career in the Australian Army, where he covered a range of tasks, from test flying to engineering and logistics support for Army aircraft, Glenn was responsible for the establishment of a number of new businesses, either as start-ups or as new business units in global corporations. Glenn has led Aspen Medical from its founding just over nine years ago to today when Aspen Medical is a substantial international business with a presence in the Asia, the Pacific, USA, Canada, Papua New Guinea, Timor Leste, the Middle East, Australia and the United Kingdom. Glenn also has a strong sense of community involvement, working closely with organisations such as the ACT Down Syndrome Association, BLITS and the Special Olympics ACT Region.

Outlines the background for the course, and development of key curriculum points, including decision to include tourniquet as a method of increasing survival at the sacrifice of the limb. Outlines staff selection, including decisions to use only staff who have seen service under fire in areas of deployment. Covers equipment selection, and notes requirement for equipment that can meet the demands of the training environment. Covers expansion of the course to include PMV's and environmental effects to increase realism of course. Finally outlines areas of continual development of the course to increase effectiveness in a changing combat environment, including eliciting feedback on return from deployments.

CONSIDERATIONS IN THE DENTAL TREATMENT FOR VIETNAM WAR VETERANS WITH PTSD

ADJ. A/PROF NORTON DUCKMANTON, OAM

Prof. Duckmanton is a Prosthodontist at Sydney Dental Hospital treating mostly DVA patients with implant supported prostheses. He is also teaching in the Prosthodontics specialty programme within Sydney University. Upon graduation he conducted practice as a dentist for 10 years when he entered the Faculty of Dentistry, retiring 25 years later. He served during that time as a visiting Professor in Prosthodontics at North Western University Dental School in Chicago on two occasions. He was flying as a Navigator in WWII in the SWPA. He was a member of the RAAF Reserve from 1947 to 1982 retiring as a Consultant in Prosthodontics with the rank of Group Captain.

Dental treatment for Vietnam Veterans is complicated by many factors; some of which are parafunctional muscle activity and nocturnal bruxing; which leads to facture of restorations and tooth structure and masticatory muscle spasm, pain and dysfunction.

A reduction in salivary flow, as a side effect from the prescription of anti depressant medication predisposes accelerated recurrent marginal caries attack, and a reduction in the pain tolerance of the soft tissues. Alcohol and drug abuse, expressions of anger, low self esteem and breakdown of family relationships often leads to a poor compliance in home care instructions.

A multidisciplinary team composing the patient's physician, psychiatrist, clinical psychologist, social worker and dentist is considered to be an ideal composition.

An aggressive oral hygiene and caries preventive program should be initiated at the outset, as a protection from new

And recurrent caries and from periodontal health breakdown. The use of specially designed trays for the administration of remineralising and cariostatic medicaments is also desirable.

An initial soft mouth guard/splint to limit the effect of bruxism while treatment is in progress is recommended.

Restorations and prosthodontics appliances should be of a robust and simple design in order to withstand the loads generated by nocturnal and diurnal muscle prarafunction and bruxism. These appliances are also simple to maintain and repair.

The use of multiple full coverage crowns to prevent tooth and restoration fracture may be subject to marginal recurrent caries where compliance of a strict oral hygiene is low, and in such cases should be prescribed with caution.

The provision of a protective occlusal splint is necessary at the completion of treatment, to protect the dentition and restorations from the effects of parafunctional activity and bruxism. Where there is wide spread periodontal bone loss, active caries and low compliance of oral hygiene instructions, it can be predicted that tooth loss with be accelerated as time progresses. It is suggested that a regular maxillary complete denture opposing a mandibular complete overdenture, supported and retained by two implants, would be an appropriate final restoration, which has

proved to be an effective means of providing an oral restoration requiring only simple, regular maintenance.

THE HEALTH AND WELLBEING OF AUSTRALIA'S FEMALE VIETNAM AND CONTEMPORARY VETERANS

SAMANTHA CROMPVOETS, PHD

Dr Samantha Crompvoets, BSC (hons) Melb PhD ANU, is a Sociologist and Research Fellow in the ANU Medical school. Dr Crompvoets is Chief Investigator on a number of DVA and Defence funded projects examining issues of gender, workforce, identity, culture, health and wellbeing. Her current projects include examining the health and wellbeing of female veterans, and the history, identity and wellbeing of ADF reservists. Other research in particular includes an analysis of the free text responses in the recent ADF census and reserve attitude survey, compiling a history of the Defence Reserves Association and analysing the marketing and recruitment campaigns aimed at Reserves since Federation.

This paper presents the findings from a three year DVA funded study into the health and wellbeing of female veterans. Empirical data was collected through face to face interviews with 90 veterans and stakeholders in female veterans' health and care. Participants gave complex accounts of their experiences of deployment, broader military career and life since discharging from the ADF. This complexity has been summarised and translated into evidence for action to improve the health and wellbeing of all female veterans. This presentation will overview barriers to accessing existing support services for female veterans, gaps in available and appropriate information, resources and DVA policies for female veterans, and gaps in knowledge of female veterans that impact health and wellbeing and service provision.

CANCER INCIDENCE AND MORTALITY IN AUSTRALIAN GULF WAR VETERANS

DR JILLIAN IKIN, MS STELLA-MAY GWINI, DR HELEN KELSALL, MS BREANNA WRIGHT, PROF MALCOLM SIM

Dr Jillian Ikin is a Research Fellow at the Monash Centre for Occupational and Environmental Health, Department of Epidemiology & Preventive Medicine, Monash University. She was an investigator on the baseline Australian Gulf War Veterans' Health Study 2001-2003, the Korean War Veterans' Health Study 2005 and is again an investigator on the current Follow Up Health Study of the Gulf War veterans and their military comparison group. Dr Ikin completed her PhD on war stressors and mental health outcomes in the Australian Gulf War and Korean War study cohorts.

Background: A previous linkage study of Australian Gulf War Veterans (GWVs) found no statistically significant excess of cancer up to the end of 1998 or mortality up to the end of 2000, although the numbers of deaths and cancers were small. In 2012 we have repeated the cancer and mortality linkage for the same study cohort.

Aims: The analyses aimed to investigate whether veterans of the 1991 GW have an excess risk of death or of developing cancer compared with a military comparison group (CG) and compared with the Australian general population.

Methods: The study cohort of 1,871 GWVs and 2,923 CG members was linked to the National Death Index and Australian Cancer Database. The observation period was 1st January 1991 to 30th of November 2007 for mortality and 1st January 1991 to 31st of December 2008 for cancer incidence. Australian general population data was used to calculate the expected numbers of deaths or cancers in each year of follow up, and these were compared with the cohort observed numbers to calculate standardized incidence and mortality rates (SIR and SMRs). The rate of death or cancer in the GWVs was compared with that in the CG using rate ratios (RR) adjusted for service type, rank at the time of the GW deployment and age.

Results: There were 42 deaths in the GWV group and 51 in the CG. The all-cause SMR was 83 (95% CI 62-113) for the GWVs and 64 (95% CI 49-84) for the CG, with neither finding statistically significantly different to the general population. There was no statistically significant excess of all-cause mortality in GWVs compared with the CG, with a RR of 127 (95% CI 85-192).The SMR for external causes of deaths was 74 (95% CI 46-121) for GWVs and 63 (95% CI 41-97) for the CG, not statistically significantly different from the general population in either group. The GWVs had a greater risk of deaths from external causes (RR= 117 95% CI 61-224) although this was also not statistically significant. The SIR for all malignant neoplasms in the GWVs was 99 (95% CI 76-133) and for the CG the SIR was 83 (95% CI 65-107). When compared with the CG, the rate of all malignant neoplasms among the GWVs was not significantly different to that of the CG group (RR 116 95% CI 80-167).

Conclusion: As of the end of 2008 for cancer and the end of 2007 for deaths, the results for Australian GWVs are not statistically different from those in the general community or the military CG. There was insufficient numbers to permit analyses of specific causes of death or specific cancer types. However, the cohort is still young and the number of person years low, indicating the need to follow this cohort into the future

LONG-TERM DISABILITY AMONG COMBAT VETERANS: COHORT STUDY OF AUSTRALIAN VETERANS FROM THE VIETNAM WAR

PROF PHILIP CLARKE, PROF BOB GREGORY, PROF JOSHUA SALOMON

Professor Philip Clarke holds the chair of health economics at School of Population Health at University of Melbourne. He has had previous appointments at Oxford University and the University of Sydney While a Research Fellow at the University of Oxford he was involved in the economic analysis of the United Kingdom Prospective Diabetes Study (UKPDS), a landmark trial of policies to improve the management of people with Type 2 diabetes. He has also undertaken commissioned research for the Department of Veterans' Affairs on the long-term health and health costs of war veterans.

Background: Recent combat operations have involved large numbers of military personnel. As long-term health effects among returning veterans are difficult to predict, an examination of disability among veterans from previous conflicts may assist in understanding the potential lifetime consequences of deployment.

Methods: We conducted a study of long-term outcomes among 60,228 Australian military personnel deployed between 1962 and 1975 during the Vietnam War. Probabilistic record linkage methods matched 51,528 individuals with up to 50 years of administrative data from the Australian Department of Veterans' Affairs. An additional 1,534 Vietnam Veterans could be identified in the administrative data. We assessed trends in physician-assessed disability claims by cause, and examined differences by service branch, rank, age and duration of deployment.

Results: The steepest rise in the incidence of disability was observed around 25 years after deployment. By Jan 2011, 69.7% (95% CI 69.6% to 70.1%) of Vietnam veterans had at least one war-related disability claim. Many made multiple claims with the leading causes being eye and ear disorders (48.0%) mental health conditions (47.9%) and musculoskeletal and connective tissue disorders (18.4%). Only 6.7% claims were classified as injuries. Compared with army personnel serving less than 100 days, those with service of more than one year in Vietnam were 2.5 (95% CI 2.2 to 2.7) times more likely to have a mental health disability and 2.3 (95% CI 2.1 to 2.5) times more likely to have other forms of disability.

Conclusions: Multiple types of war-related disability are common among Australian Vietnam veterans, and the likelihood of a disability claim is associated with war service history. If similar patterns follow in more recent conflicts, substantial additional resources will be needed to prevent and treat long-term health conditions among veterans.

RISK AND RESILIENCE IN AUSTRALIAN MILITARY FAMILIES

DR ANNABEL MCGUIRE, MS CATHERINE RUNGE, DR RENEE ANDERSON, MS KATRINA BREDHAUER, PROFESSOR ANNETTE DOBSON, A/PROF PETER NASVELD

Dr Annabel McGuire joined the Centre for Military and Veterans' Health (CMVH) in January 2007 as a Research Fellow within the Deployment Health Surveillance Program. Currently, she is the Chief Investigator on the Timor-Leste Family Study. During her time with CMVH, Annabel has been co-recipient of four Defence and DVA grants, produced six peer-reviewed journal articles and more than 20 reports to Defence & DVA. Annabel has been co-author of 25 conference presentations, presenting nine of these.

Risk factors are conditions or variables associated with a lower likelihood of positive outcomes and a higher likelihood of negative or socially undesirable outcomes. Protective factors have the reverse effect: they enhance the likelihood of positive outcomes and lessen the likelihood of negative consequences from exposure to risk [1]. The same factor may be either risk or protective. Resilience is about responding and adapting to crises and adversity, and recovering and growing from these experiences [2]. Individual strengths, family strengths and community supports all play a role in resilient families [3].

The Australian Department of Veterans' Affairs funded a large cross-sectional quantitative study as part of the larger Family Study Program. Responses were collected from Australian veterans and partners (N>4,000) using validated

measures of physical (SF-12), mental (K10, SF-12, PCL-C), family (FACES-IV) and child (SDQ) health. Data on risk and protective factors was also collected including measures on how people cope (BriefCOPE), the social support they access (DUSOCS), intimate partner violence (WAST) and their overall relationship satisfaction (QRI).

The presentation will investigate potential risk and protective factors associated with the physical, mental, and family health of partners and children including family functioning, coping, social support, quality of relationship, and intimate partner violence. Risk and protective factors may exacerbate or ameliorate effects associated with military life for partners and children. The findings support aspects of prior research particularly from the United States and provide new insights on the health and wellbeing of Australian military families and their family dynamics. Factors associated with risk and resilience for military families may be amenable to policy and practice interventions.

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WHEN IS IT PERMITTED TO BREAK MEDICAL IN CONFIDENCE? A DISCUSSION OF THE ETHICAL ISSUES FOR DEFENCE MEDICAL STAFF IN A CASE OF CODEINE ADDICTION

SQNLDR MICHAEL CLEMENTS

SQNLDR Clements is the Health Centre Manager at Townsville Health Centre at RAAF Base Townsville. Since completing the Graduate Medical Scheme at University of Sydney with initial training at Royal Prince Alfred Hospital in Sydney and in Geraldton, WA, he was posted to RAAF Base Tindal and then to the United Kingdom for the Diploma in Aviation Medicine. After a short period as the Officer in Charge of the 1 EHS Detachment at Townsville he was posted to his current position in Joint Health Command. Current research interests include Occupational medicine and Medical administration.

Codeine addiction is a commonly occurring substance use disorder in the Australian general population that is facilitated by the easy access to over the counter preparations. Despite the increasing regulation in which pharmacists are allowed to dispense the medication, the medical literature is growing about the impact of the addictions with life threatening gastrointestinal disease, renal failure, anaemia and severe hypokalaemia. In this case study what had initially appeared to be a diagnostic conundrum of life threatening anaemia on a background of gastric erosions later revealed itself as a substance use disorder.

The diagnosis and rehabilitation plan required careful balancing of the needs of the individual and the needs of the Commonwealth. In this particular case, we found that medical advice and management alone was insufficient to generate a change in behaviour, and the inclusion of the member's chain of command was crucial to the patient engaging in the therapeutic process. The way that the matter has been handled in a medical, administrative and disciplinary sense have revealed a complex but compassionate, positive and patient centered approach that reveals values in the best traditions of the ADF.

The frontline medical officer must maintain a high degree of suspicion of codeine addiction when managing patients with some of the non-specific co-morbidities of this substance use disorder. Once suspected or revealed, the complex interaction that is required between the medical officer and the chain of command needs to be well thought out and planned in order to provide the best outcomes for the patient and the Commonwealth.

STATEMENTS OF PRINCIPLES, PROCESS AND CHALLENGES WITH TRANSLATING EPIDEMIOLOGY INTO LEGAL INSTRUMENTS.

JUSTINE WARD, PAUL MURDOCH, NICK SAUNDERS

Justine Ward is a public health physician and Principal Medical Officer of the Repatration Medical Authority Secretariat.

Since 1994 the system for establishing liability for compensation for most military service in Australia has been based on Statements of Principles (SoPs). SoPs are legal instruments which set out the factors that must exist to cause a particular kind of disease, injury or death that could be

related to eligible service, based on sound medical-scientific evidence (SMSE). Decision-makers determining claims from individuals cannot accept a claim unless it meets at least one factor, and associated 'dose'. The SoPs are determined by the Repatriation Medical Authority (RMA). The RMA consists of five practitioners eminent in the field of medical science, supported by a secretariat. SoPs are determined by assessing the SMSE for evidence of a causal association between potential risk factors and a given disease. Up to the end of the 2011 financial year, the RMA had produced 1833 instruments covering 304 conditions. Conditions covered are wide ranging in nature and include chronic diseases, infections, psychiatric conditions, injuries, overuse syndromes and cancers.

The legislation requires that the condition meet the Veterans' Entitlements Act 1986 (VEA) definition of "disease" and that the RMA assess causation using published peer-reviewed evidence and standard epidemiological criteria. The latter are based on the Bradford-Hill criteria, and include temporality, strength of association, observation of a dose-response effect, biological plausibility, consistency with other evidence, and absence of alternative explanations for an association (chance, bias or confounding). Consideration of the quality of the published evidence is an important part of the critical appraisal process. The assessment of the evidence is complicated by the fact that there are two standards of proof, reasonable hypothesis (RH) and balance of probabilities (BoP). For the RH standard, the SMSE has to indicate or point to a reasonable hypothesis of a causal association between the factor and disease. For the BoP standard, the SMSE has to show that it is more probable than not that the factor is causally related to the disease. While the same body of SMSE is used for each disease, the factors and related doses may vary between the 2 SOPs.

In experimental conditions factors other than the association of interest can be controlled, but epidemiology by its nature is an imperfect science, using data from free-ranging human beings. This paper will give examples of associations which are more difficult to assess for various reasons, including those which are of particular interest to veterans.

Problems with the evidence include lack of information concerning the association in question, poor exposure assessment, mismatch between the evidence and popular beliefs, reverse causation, recall bias, variable disease definitions and poor control for confounding. A wealth of new data on genetic risk factors is being generated, and the challenge of applying information on genetic risk factors to SoPs will also be discussed.

CREDENTIALING AND THE LAW

MS YOLANDA KURUC

The process of credentialing health professionals is more than a tedious rubber-stamping process but rather an unparalleled opportunity to effect patient safety. Credentialing is described in the 2004 Australian Council on Safety and Quality Council (now the 'Commission') publication 'Standard for Credentialing and Defining the Scope of Clinical Practice as the 'formal process used to verify the

qualifications, experience professional standing and other relevant professional attributes of medical practitioners for the purpose of forming a view about their competence, performance and professional suitability to provide safe, high quality health care services within specific organisational environments'.

Rigorous and robust credentialing processes can protect patients from potentially avoidable harm. The enquires into the notorious appointments of Dr Graeme Reeves and Dr Jayant Patel provide valuable insight into what expectations patients may reasonably have of the credentialing processes of health care facilities. The failings by the responsible personnel to adequately assess the qualifications and experience of these two doctors, and the inadequate response to 'red flags' in the doctors' applications for employment, is described in the Davies and 2008 'Garling Report' into the circumstances surrounding the appointment of Dr Graeme Reeves. This paper exams the duties owed by health care facilities to patients in relation to credentialing the health professionals.

INTERNATIONAL HUMANITARIAN LAW / LAW OF ARMED CONFLICT IN RELATION TO HEALTH PERSONNEL. WHY DO WE STILL NOT UNDERSTAND?

DAVID THOMPSON

LCDR David Thompson RANR, is a Reserve General Practitioner. He has recently transferred from Army Reserve to RANR. His operational service includes 2 deployments to Afghanistan: 1stly, as part of the forward rotary-wing aero-medical evacuation team, Kandahar; and 2ndly as the Regimental Medical Officer (RMO) to Reconstruction Task Force 3, Tarin Kowt. He has also deployed as RMO to the Force Level Logistic Asset 5, Kuwait and as MO, Resuscitation Team, Timor Leste.

David works as a Contract Health Practitioner to the ADF at Kuttabul Hlth Centre, and the ADF Ward, St Vincent's Hospital.

He is married with a 7-yr old daughter and 3-yr old son. He has a particular interest in the complexity of 'medico-legal-ethical' issues encountered by health personnel on operational service.

Introduction: Was this not presented at last year's conference? Why again? It is an issue of importance and so will be discussed once more. As the educationalist states: "Only by repeating the lesson will the idea be reinforced."

At the 2011 AMMA Conference examples of medico/legal/ethical dilemmas during an armed conflict were discussed. The rules by which we decide how to act when confronted by such dilemmas are known as 'International Humanitarian Law' (IHL). IHL is as relevant today as it has ever been. IHL is clear in relation to how health personnel should act during armed conflicts. To act counter to IHL places the health provider in an unethical and potentially unlawful position. This paper will describe attitudes to IHL by ADF personnel.

Background: IHL, or the 'Law of Armed Conflict', is the special branch of law governing situations of armed conflict, i.e. war. The main purpose of IHL is to mitigate the suffering caused by war. It regulates the conduct of parties to an armed conflict and provides protection to those most affected. It governs the behaviour and conduct of

both combatants and non-combatants. Within IHL there are specific rules relating to health personnel.

IHL has been gradually formulated over the years and its main advocate is the International Committee of the Red Cross. IHL stems from both customary international law and international conferences and treaties, in particular the 1949 Geneva Conventions and the 1977 Additional Protocols.

The Australian parliament has incorporated IHL into domestic law. It is binding on all Australian citizens.

Comments: This presentation will draw on discussions with, and examples raised by, various ADF personnel. It will illustrate whether IHL is understood and whether it is felt to be of importance. Examples are shown where ADF personnel are confronted with real-life situations and must decide on the appropriate medico/ethical/ legal route to follow. In a number of cases the answers are surprising. Opinions are expressed by a wide range of personnel: From the private medic to senior health personnel; from the infantry junior leader to the combatant commander; from logisticians to legal officers. It becomes clear that this issue raises differing opinions: Some personnel understand IHL, abide by it and fight for it. However, others demonstrate a poor knowledge of IHL and neglect it. Others argue against IHL, and some even scorn it.

The speaker will reiterate that these rules are explicit. IHL provides rules and guidance on how health personnel are to act. As a senior IHL lawyer commented: "When it is most difficult to apply/follow (IHL) ...that is when it is most needed".

The reason why ADF personnel have differing views on IHL will be explored. Why are we not getting it right? How can we get it right? Strong leadership is required to ensure all ADF personnel act ethically. Leaders have a responsibility not just to their soldiers, sailors and airmen but to the nation to ensure that International and Australian laws are adhered to.

Conclusion: This talk will illustrate that some ADF Mbrs disregard IHL in relation to Hlth personnel. To act counter to the rules of IHL places the ADF Mbr on the 'slippery slope' of declining moral and ethical standards and into potentially dire consequences. This affects not just the individual Mbr but the Defence Force and nation as a whole.

THE INTRODUCTION OF OPERATIONAL AUTOMATED NEURO-COGNITIVE TESTING IN THE AUSTRALIAN DEFENCE FORCE

COL LEONARD BRENNAN

COL Brennan joined the Australian Regular Army in 1986, he graduated from the University of Newcastle in 1989 and his posting highlights include Regimental Medical Officer 3rd Battalion Royal Australian Regiment, Officer Commanding 1st Parachute Surgical Team and Commanding Officer 1st Health Support Battalion. He also has extensive staff experience including HQ 3rd Brigade, HQ Land Command, HQ Training Command-Army, HQ Joint Operations Command and his current appointment as Director Army Health, Army HQ. COL Brennan has had operational service in Papua New Guinea, East Timor, Solomon Islands and the Middle East Area of Operations. He is a specialist general practitioner and medical administrator and an adjunct associate

professor with the University of Queensland.

Research question: Can an automated neuro-cognitive test like Cogstate SportTM (Cogstate) be a useful adjunct to the management of minor traumatic brain injury (mTBI) in the operational environment?

Background & literature review: mTBI associated with an improvised explosive device (IED) blast exposure is considered a signature injury from the recent Iraq and Afghanistan conflicts. The use of a post-blast neuro-cognitive test is not new, with the US Military Acute Concussion Assessment (MACE) being widely used. The Automated Neuropsychological Assessment Metrics (ANAMS) is routinely used pre and post deployment but is not routinely used in the acute management of mTBI on operations. In 2011 it was determined that all ADF personnel deployed or deploying to Afghanistan were to have a base-line Cogstate.

Study Design/Methods: The baseline and after-injury Cogstate SportTM database was analysed and matched against operational blast registers and clinical records to assess compliance with ADF policy on the use of Cogstate Sport post blast.

Results: The ADF achieved base line testing in 99% personnel deployed in Afghanistan by 31 Dec 2011. In 2012, after-injury cogstate testing has been incorporated into the assessment and management of all ADF members with a significant blast exposure. Cogstate testing has demonstrated significant, reversible short term neuro-cognitive impairment and subtle post-blast symptoms that were not clinically apparent. The most current results will be presented.

Discussion: Cogstate provides facilitates a more sensitive assessment of post-blast symptoms and neuro-cognitive function compared to clinical examination or MACE alone. The key limitation, access to the internet is likely to be less of a problem on future operations.

SUICIDALITY IN THE AUSTRALIAN DEFENCE FORCE: RESULTS FROM THE 2010 ADF MENTAL HEALTH PREVALENCE AND WELLBEING DATASET

DR MIRANDA VAN HOOFF, **DR KATE FAIRWEATHER-SCHMIDT,** PROFESSOR ALEXANDER MCFARLANE, COLONEL STEPHANIE HODSON, MRS HELEN BENASSI, DR ALAN VERHAGEN, MRS NICOLE STEELE

Dr Kate Fairweather-Schmidt completed a Science degree majoring in Psychology with honours at The Australian National University (ANU). Her doctoral research at the Centre for Mental Health Research (CMHR, ANU) addressed suicidality in a community sample at an epidemiological level, and considered the influence of variables including mental health, life events, physical illness and employment with a special emphasis on differences across age and gender. Since then, Kate has authored and co-authored a number of papers on Suicidality. Currently a senior research fellow at the Centre for Traumatic Stress Studies (University of Adelaide), Kate is investigating predictors of suicidality in the Australian Defence Force Health and Wellbeing Survey.

Recent findings from the US have triggered concern that the rate of suicide is increasing in military populations and may surpass those in the general population.

A significant body of evidence supports a continuum of suicidal expression, where non-fatal suicidality (i.e., suicidal ideation, suicidal plans and attempts) predominantly precede future completed suicide Thus, focusing on suicidal thoughts and behaviours provide effective opportunities to prevent suicide deaths. In Australia, the prevalence of suicidal ideation and making a suicide plan was significantly higher in the ADF compared to the Australian community, with the rate of suicidality in the ADF being more than double that in the general community. However, the ADF reported the same prevalence of suicide attempts (0.4%) in the preceding 12 months as the general community (0.3%). The psychological and physical trauma associated with combat experiences may contribute to mental disorders and place military personnel at an increased risk of suicide. This presentation will identify the risks of suicidal thoughts and behaviours (i.e., non-lethal suicidality) among ADF personnel who have been exposed to significant traumas; adverse occupational factors; who serve in different arms of the military across three main categories of rank; and finally, likelihood of suicidality for personnel who have been identified as suffering affective, anxiety and/or alcohol disorders.

SUICIDE PREVENTION IN THE ADF: UP SKILLING THE MENTAL HEALTH PROVIDER WORKFORCE

CAROLE WINDLEY

Ms Windley is the Director of Mental Health Clinical Standards and Practice in Joint Health Command. She is a psychologist with 20 years experience working in both service delivery and mental health policy. This includes a significant period in VVCS – Veterans and Veterans Counselling Service, and a secondment to DoHA working on National Mental Health Reform. Her current responsibilities in Defence involve the Early Intervention, Suicide Prevention Program; Quality Assurance and Clinical Standards in Mental Health;

Alcohol, Tobacco and Other Drugs Program and the ADF Centre for Mental Health.

In 2011 Defence engaged Communicorp to undertake a training needs analysis of its mental health professional workforce and develop a Suicide Risk Assessment Training (SRAT) package. This paper will describe the development of SRAT including challenges in developing a nationally relevant training package. The training acknowledges Defence has an already skilled multi-disciplinary workforce in the assessment of suicide. However, SRAT clarifies and operationalises health policy in a competency based format and the delivery mode ensures sustainability over the longer term.

CONSEQUENCES OF DEPLOYMENT TO TIMOR-LESTE FOR AUSTRALIAN MILITARY FAMILIES

DR ANNABEL MCGUIRE, MS CATHERINE RUNGE, DR RENEE ANDERSON, MS KATRINA BREDHAUER, PROFESSOR ANNETTE DOBSON, A/PROF PETER NASVELD

Dr Annabel McGuire joined the Centre for Military and Veterans' Health (CMVH) in January 2007 as a Research Fellow within the Deployment Health Surveillance Program. Currently, she is the Chief Investigator on the Timor-Leste Family Study. During her time with CMVH, Annabel has been co-recipient of four Defence and DVA grants, produced six peer-reviewed journal articles and more than 20 reports to Defence & DVA. Annabel has been co-author of 25 conference presentations, presenting nine of these.

The literature suggests that military families are resilient, but they are regarded as a special population because they face unique stressors. In particular, deployment separation may be associated with negative family outcomes such as poor mental health, marital dissatisfaction and child health and behavioural problems [1, 2]. The current research explores these discrepant findings to determine the physical, mental or family health impacts Australian families experience as a result of military deployment to Timor-Leste.

The Australian Department of Veterans' Affairs funded a large cross-sectional quantitative study as part of the larger Family Study Program. Responses were collected from Australian veterans and partners (N>4,000) using validated measures of physical (SF-12), mental (K10, SF-12, PCL-C), family (FACES-IV) and child (SDQ) health outcomes associated with deployment to Timor-Leste.

Key findings on the health outcomes for partners and children in the Timor-Leste Family Study will be presented. The findings support aspects of prior research particularly from the United States and provide new insights on the health and wellbeing of Australian military families and their family dynamics. Conclusions and implications of these findings for policy, service providers and future research are addressed.

References:

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TELEPSYCHIATRY IN THE AUSTRALIAN DEFENCE FORCE

DR DUNCAN WALLACE

Dr Wallace is a consultant psychiatrist at the ADF Centre for Mental Health, Mosman, NSW. He is a Commodore in the Royal Australian Naval Reserve and holds the position of Director General Health Reserves –Navy. He has undertaken several operational deployments, most recently serving in the Middle East from January to March 2012 as medical staff officer at the Australian Headquarters in the UAE.

The Australian Government's response to the Dunt Review of Mental Health services in the ADF included the establishment of a telepsychiatry hub at the ADF Centre for Mental Health. The presentation describes the development so far of a telepsychiatry network and operating policies to provide consultant psychiatrist services to garrison health and to deployed personnel on operations.

TOBACCO USE AND NICOTINE DEPENDENCE IN THE AUSTRALIAN DEFENCE FORCE: RESULTS FROM THE 2010 ADF MENTAL HEALTH PREVALENCE AND WELLBEING DATASET

DR MIRANDA VAN HOOFF, PROFESSOR ALEXANDER MCFARLANE, COLONEL STEPHANIE HODSON, MRS HELEN BENASSI, DR ALAN VERHAGEN, MRS NICOLE STEELE

Dr Van Hooff is currently a research fellow at the Centre for Traumatic Stress Studies. She qualified from her honours degree in Psychology in 1998 and in 2011 was awarded the degree of Doctor of Philosophy in Medicine for her research into the longitudinal outcomes of childhood disaster exposure. Over the last 10 years she has conducted a number of large-scale longitudinal studies of traumatized populations. Miranda is an investigator on the2010 Mental Health Prevalence and Wellbeing Study.

In military populations, cigarette smoking has been reported to increase upon enlistment, is particularly prevalent in personnel on operational deployment and has been shown to negatively affect readiness for duty, productivity and length of military service. Furthermore there is a reported association between cigarette smoking and alcohol and drug use, particularly in younger military members, which resembles the patterns in the general community. Utilising results from the 2010 ADF Mental Health Prevalence and Wellbeing Study, this presentation is the first to examine the prevalence of tobacco use and disorder in a representative sample of the ADF. Using a structured diagnostic interview (CIDI), 4.5% of the ADF (n = 2266) met criteria for ICD-10 Nicotine Dependence in the past 12 months. The prevalence of tobacco consumption across rank, service sex and deployment will be discussed

PROFESSIONAL DEVELOPMENT FOR MILITARY MEDICAL OFFICERS; COMPONENTS TOWARDS THE DIPLOMA IN MILITARY MEDICINE

CDRE JENNY FIRMAN, LEUT BRENDAN PEEK

Jenny Firman joined the RAN in 1980 and spent 22 years in the full time RAN as a medical officer. She enjoyed a range of positions including sea postings, underwater medicine experience and Joint Health Command postings. She left full time Navy in 2002, taking up the position of Chief Medical Officer of Defence Force Recruiting and then in 2007 a position as medical adviser in the Office of Health Protection in the Department of Health and Ageing, a role that supports national responses for health emergencies.

Throughout her career CDRE Firman has participated in general practice and is Chair of the Military Chapter of the Royal Australian College of General Practitioners.

Currently there is a limited career pathway for Defence Medical Officers wishing to remain in a generalist clinical pathway. This important group provide a significant medical cover and operational capability to the ADF. Australian Public Service (APS) and contracted medical officers in the support area also provide significant services to the ADF, often without any specific or standardised training relevant to the military environment.

The Diploma and Certificate in Military Medicine will be a formal qualification that recognises and supports the development of advanced medical skills that are unique to the military environment, whilst acknowledging and embracing the same evidence-based, generalist medical care model that exists across Australia.

When complete, the benefits of this program will include:

- providing an "gold standard" to which military medical officers can aspire to, in terms of professional and academic excellence, whilst maintaining a generalist focus;
- providing a positive recruitment and retention tool for both full time and reserve, APS and contracted medical officers working with defence;
- providing the vehicle for greater collegiality, under the auspices of the Chapter of Military Medicine of the Royal Australian College of General Practitioners;
- enhancing the reputation of ADF medical officers to the wider professional community, the general public and to the ADF population through the recognition of the high value of military medical skills;
- providing appropriate and relevant opportunities for meaningful continuing professional development, thereby satisfying the requirements for registration by the Medical Board of Australia.

The Diploma and Certificate will have as its foundation the existing curriculum for general practice of the RACGP. It will then attempt to extend this curriculum to capture the unique context and, at times, content of military medicine. This session aims to discuss the basic content of the curriculum and review the three components of the qualification : military medical training, military medical experience and assessment.

The session will describe the development of this qualification and identify opportunities for individual involvement in the process of curriculum development to achieve this qualification and ongoing involvement and support.

AEROSPACE MEDICINE AS A CLINICAL SPECIALTY – AN INITIATIVE TO RECOGNIZE 'SPECIALISTS IN AEROSPACE MEDICINE'

TURNER JT, SMITH AM, CABLE GG

John Turner joined the Royal Navy as medical cadet in 1971. He graduated as a doctor from Charing Cross Hospital Medical School, University of London in 1974.

He was the Censor for Remote and Rural Trainees on the Board of Censors of the Australasian Faculty of Occupational & Environmental Medicine from 2002 and has been the Chair of the AFOEM Teaching and Learning Committee since 2009.

After an enjoyable year (2005-6) as the Chief of Operations at the Centre for Military and Veterans' Health (CMVH), University of Queensland he had the good fortune to be able to return to pure Aviation Medicine as the Commanding Officer RAAF IAM (2008- 2010). He is currently enjoying being back at work as a reservist with the Army in Townsville.

He feels particularly honoured to have been asked earlier this year to take on the role of Inaugural President of the Australasian College of Aerospace Medicine (ACAsM).

Aerospace medicine is seen as a clinical specialty in many parts of the world; however, in Australia and New Zealand it has been viewed for many years as a 'special interest group' of general practitioners, occupational physicians, and military doctors. Within this paradigm, interest to pursue a career in aerospace medicine has diminished - to the point it has become difficult to identify people with the knowledge and experience to fill key functions in aerospace medicine. The Australasian College of Aerospace Medicine was established to provide an academic structure to support and develop those doctors in Australia and New Zealand who practice aerospace medicine at a high level of expertise, and to support and train junior doctors who aspire to a career in aerospace medicine - with an aspirational goal of aerospace recognized as a clinical specialty by the wider medical community. This presentation will outline the College's model for seeking specialist recognition, and describe the way it is achieving these goals. Not only will this presentation interest prospective specialists in aerospace medicine, but it will also contribute to a discussion of how to recognise as 'specialists' those people who practice niche areas of military medicine to a high level of expertise - especially in disciplines where there is no clear civilian counterpart.

THE ADF CHAIR OF MILITARY MEDICINE AND SURGERY

LTCOL MICHAEL C. READE

After clinical training in Sydney and Melbourne, a doctorate from Oxford and an MPH from the University of Pittsburgh, Michael returned to Melbourne as an Associate Professor of Intensive Care Medicine in 2007. In 2011, after 22 years in the Army Reserve including deployments to the Balkans, Timor, the Solomon Islands

and Afghanistan, he was appointed to a full-time Defence position as the Professor in Military Medicine and Surgery at the University of Queensland. He is developing a research programme at the interface of civilian and military trauma, including management of acute cognitive impairment, traumatic coagulopathy, and trauma systems design.

In 2011, the Australian Defence Force built on existing health research strengths at the Australian Malaria Research Institute and the Centre for Military and Veterans' Health by establishing the ADF Chair of Military Medicine and Surgery within the Burns, Trauma and Critical Care Research Centre at the University of Queensland. By adding trauma medicine and surgery to research in tropical medicine and occupational and public health, the ADF now supports a research hub in southern Queensland relevant to all aspects of military medicine.

The tasks of the ADF Chair are to lead a programme of original research relevant to both military and civilian trauma, and to guide the implementation of modern trauma practice in the ADF. Research projects currently underway include:

- evaluation of cryopreserved blood products and clotting factor concentrates, in collaboration with the Australian Red Cross Blood Service, the Australian and New Zealand Intensive Care Research Centre, and the Queensland University of Technology Medical Engineering Research Facility;
- clinical trials of novel approaches to the management of traumatic brain injury and acute cognitive impairment, in collaboration with the Australian and New Zealand Intensive Care Society Clinical Trials Group;
- clinical evaluation of rapid molecular diagnostic testing for early evidence of infection, in collaboration with the University of Western Australia; and
- evaluation of various trauma systems designs, in collaboration with the National Trauma Research Institute and the Queensland Trauma Registry.

Further studies in the fields of inflammatory-modulating trauma fluid resuscitation and blast and blunt lung injury are planned, in collaboration with the United States Institute of Surgical Research and the UK Defence Science and Technology Laboratory Porton Down and the Royal Centre for Defence Medicine. ADF officers engaged in civilian trauma research around Australia are invited to consider the potential funding and impact benefits of linking their work to the ADF programme.

The ADF Chair also has input into the development of the deployed ADF trauma system. This includes:

- oversight of the academic aspects of the fulltime ADF procedural specialty registrar training programme, including liaison with the specialty colleges;
- better integration of the training provided in clinical short courses, such as the EMST;
- development of a process of training and credentialing military surgical teams prior to deployment;
- development of ADF clinical practice guidelines relevant to trauma care, including those of the Australian Resuscitation Council;

- implementation of a process of clinical audit and review of the work of deployed medical teams; and
- development of an ADF trauma registry.

In time, it is hoped that the concentration of ADF clinical trauma practice, training and research within the one institution – perhaps termed an 'Australian Centre for Defence Medicine' - will facilitate the efficiency, corporate identity and effectiveness that typifies similar leading clinical institutions worldwide.

MASTERS OF MILITARY MEDICINE – ENHANCING MEDICAL OFFICER EDUCATION & TRAINING

COL RICHARD MALLET, MAJ CAROL WALDECK

COL Richard Mallet is the Command Health Officer for Headquarters Force Command. COL Mallet and his team are responsible to the Commander Forces Command for ensuring that FORCOMD has a robust and relevant deployable Combat Health capability to support both deployed and non-deployed forces.

A measured and more defined response to education and training for Army Medical Officers is required following the endorsement of the Combat Health Operating System as a key component of the Army Health Force Modernisation. This includes the ongoing development of supporting sub-systems and associated capabilities. The effective generation of the Combat Health Operating System requires adherence to detailed and iterative clinical education and training regimes within foundation war-fighting and mission specific programs. Future education and training pathways for Army Medical Officers must be specifically targeted towards combat health capability needs, whilst retaining the flexibility to be relevant across the spectrum of conflict. Effective health training and education underpins the operation of Army combat health capability in complex and challenging environments. The readiness of combat health personnel is dependent on the successful synthesis of individual and collective education and training. This must be reinforced by current and relevant clinical practice.

Education and training for Army Medical Officers is currently not optimised to deliver the specific needs of Army's operational health requirements. Current education and training pathways have not been developed specifically to meet the needs of Army Medical Officers in complex and austere environments. It is also recognised that relevant clinical skills for Army Medical Officers are highly erodible and historically difficult to maintain. This vulnerability applies to pre-hospital emergency care, primary health care or high-end deployed hospital care. This is due in part to the limited ability of Army Medical Officers to fully utilise their skills in non-deployed military environments. For Army Medical Officers, education and training consists of a mix of professional clinical training, in-house military medical training and medical education & training external to Army. The drivers for the Masters of Military Medicine have been made in recognition of the current context and lessons-learned on operations over the past decade. In addition, the Masters of Military Medicine serves to mitigate the vulnerability in the current education and training provided to Army Medical Officers and aims to set the conditions for Army's future combat health capability requirements.

THE EFFECT OF CENTRE-BASED COUNSELLING FOR VETERANS AND VETERANS' FAMILIES ON LONG TERM MENTAL HEALTH OUTCOMES

DAVID FORBES, O'DONNELL, ML., VARKER, T., PERRY, D.

David is the Director of the Australian Centre for Posttraumatic Mental Health (ACPMH) and Professor, Department of Psychiatry, University of Melbourne. He is a clinical psychologist with many years' experience in the assessment and treatment of mental health problems following trauma.. He was the Chair of the working party for the Australian Guidelines for the Treatment of Adults with Acute Stress Disorder and Posttraumatic Stress Disorder. He is on the Editorial Board of key international journals and has published widely in the area of posttraumatic stress in the international literature

Objective: The Veterans and Veterans Families Counselling Services (VVCS) was established by the Australian government and plays a pivotal role in providing mental health services to veterans and their families. This research explores the impact of centre-based psychological counselling upon depression, anxiety, stress and alcohol use severity.

Methods: We invited a stratified sample of VVCS clients to participate in this study. Data was collected on intake to the program, at the fifth counselling session, and 12 months after the commencement of counselling. Repeated measures General Linear Model (GLM) analyses were conducted to examine the impact of centre-based counselling upon depression, anxiety, stress and alcohol severity over time. Secondary analyses were conducted to investigate the role of gender, client status and era of service on changes in symptoms across time. These analyses allowed us to compare pre- and post-counselling client outcome data.

Results: VVCS centre-based counselling resulted in a significant reduction in depression, anxiety, stress and alcohol use severity by the end of counselling, and these improvements were maintained over the next 12 months. Females responded particularly well to centre-based counselling, and contemporary veterans overall had lower levels of symptom severity than older veterans over time.

Conclusions: VVCS centre based counselling successfully reduced depression, anxiety, stress and alcohol use symptom severity of veterans and their families. Contemporary veteran and females responded particularly well to VVCS centre based counselling

THE GREAT WAR AND THE BRISBANE HOSPITAL

ASSOC. PROF. CLIFF POLLARD

General surgeon; recent retired as Director of Trauma Services RBWH; currently has a clinical governance/audit post in Retrieval Services Q'ld; Chair of the Statewide Trauma Clinical Network; deployed to Bougainville and East Timor with the RAAMC.

When the Great War broke out in 1914, the implications for the Brisbane Hospital were immediate and would continue for the duration and beyond of the conflict. Staff resigned from the Hospital at the beginning of the War and throughout to enlist. At one

stage, the Hospital had no resident medical officers. Grace Wilson, the matron in August, 1914, would enlist immediately and would go on to achieve the highest nursing post in the Australian Army. Others would provide outstanding service with due recognition and subsequently have impressive post-war nursing careers. One medical officer would take his own life after the Dardanelles campaign. John Barr McLean would return to his post as superintendent until retirement in 1933. This paper will examine in part the impact on the Brisbane Hospital, and also record some of the events in the lives of this extraordinary group of people who enlisted from it.

MORE THAN MALARIA. THE CONTRIBUTION OF AUSTRALIAN ARMY DOCTORS TO THE SCIENCE OF TROPICAL MEDICINE IN THE TWO WORLD WARS.

PROFESSOR GEOFFREY QUAIL

Geoff Quail has a long association with the RAAF since serving as a national serviceman till retirement as consultant in medical education and tropical medicine in the Specialist Reserve. He was appointed lecturer in the Department of Oral Medicine in 1961 and has held continuous appointments at Melbourne and Monash Universities since that time. He is a councillor of the Australasian College of Tropical Medicine and was a Centenary Lecturer for the Royal Society of Tropical Medicine and has received the AMMA Research Award on two occasions.

Geoff read modern history at Oxford and is currently writing a book on the Contribution of the Australian Military to the Science of Tropical Medicine.

Much has been written about the impact of malaria on the allied forces in the Pacific and Burma campaigns of the Second World War but there is little documentation of the other diseases which caused serious morbidity and greatly reduced fitness in troops serving in the tropical and sub-tropical theatres during both world wars. During these times of conflict Australian military doctors and scientists greatly advanced knowledge of these diseases which included scrub typhus, bacillary and amoebic dysentery, schistosomiasis and dengue fever. Their skill and dedication resulted in a significant reduction in morbidity of these conditions and so greatly improved the health of serving members. This translated to improved health of people living in the tropics after hostilities ceased. This paper will describe the impact of these diseases at Gallipoli, the Sinai, Burma and New Guinea and the significant advances which resulted from Australian military doctors and scientists' scientific work.

THE CASE OF THE PELVIC DIGIT

PETER HURLY

WGDCR Peter Hurly is currently the Director of Air Force Medicine for the RNZAF. He has been a member of St John Ambulance since 1964 and was involved in ambulance work and training. He trained as a pharmacist in South Africa and studied medicine obtaining his MBChB in 1983. He worked in hospital medicine and Accident and Emergency. He was a member of the South African Military Medical Service and saw active service in South Africa. On moving to New Zealand, he joined the Royal New Zealand Army Medical Corps.

He then moved to general practice in Palmerston North and took up a Reservist position with the RNZAF. He obtained a Diploma in Aviation Medicine and a certificate in Air Retrieval medicine, subsequently progressing to a Masters in Aviation medicne. He moved back into full time military medicine in 2002 and became the Director of Air Force Medicine in 2004. He is due to retire from the Regular Force at the end of this year.

A case presented of an unusual congenital condition in a service person, a discussion of the presentation and management and a literature search of the condition followed by an indication of treatment options and prognosis.

VOM MILITARISCHES SANITATS LEISTUNGEN: ON MILITARY HEALTH SERVICES

AIRCDRE WARREN HARREX, **COL JOHN TURNER, CMDR NEIL WESTPHALEN**

John Turner joined the Royal Navy as medical cadet in 1971. He graduated as a doctor from Charing Cross Hospital Medical School, University of London in 1974.

He was the Censor for Remote and Rural Trainees on the Board of Censors of the Australasian Faculty of Occupational & Environmental Medicine from 2002 and has been the Chair of the AFOEM Teaching and Learning Committee since 2009.

After an enjoyable year (2005-6) as the Chief of Operations at the Centre for Military and Veterans' Health (CMVH), University of Queensland he had the good fortune to be able to return to pure Aviation Medicine as the Commanding Officer RAAF IAM (2008-2010). He is currently enjoying being back at work as a reservist with the Army in Townsville.

He feels particularly honoured to have been asked earlier this year to take on the role of Inaugural President of the Australasian College of Aerospace Medicine (ACAsM).

Traumatic brain injury, post-traumatic stress disorder and traumatic amputations have drawn considerable attention from political and military leaders, veteran's groups and the media. Such injuries have become the 'signature wounds' of the Iraq and Afghanistan wars. Furthermore, comparable attention has often been expended on medical conditions that can be characterised by their novelty, severity and/or lack of ascribable causation.

However, the focus on these short-term military health imperatives has diverted attention from the long-term strategic principles of military health care, in the context where information on the functions and roles of military health services is at best limited, or at worst non-existent.

This in turn supports the premise that military health services are perceived and externally, simply as uniformed treatment services for use primarily in operational circumstances. It is this perception, combined with the focus on short-term military health imperatives, that currently drive how many Western military health services are organised and resourced.

This presentation will describe the functions and roles of national military health services at the strategic level, where they are applicable irrespective of the size of the military services that they support.

PILOT AUSTRALIAN DEFENCE FORCE MILITARY SURGICAL TEAM AT ROYAL BRISBANE AND WOMEN'S HOSPITAL 2012

DR AMANDA DINES, CMDR ALISON THOMAS

The ADF Military Surgical Team will comprise five specialist positions in: emergency medicine, general surgery, orthopaedics, anaesthesia; and intensive care. Each Member of the ADF Military Surgical Team will be a member of the Reserve Force and will be released from their duties at the RBWH to undertake Defence Service as required by the ADF for up to 16 weeks per year.

At the RBWH, members of the ADF Military Surgical Team will develop their clinical skills as individuals and as a team, with a clear focus on a trauma based approach to

clinical practice. The ADF Military Surgical Team will be integrated within the RBWH clinical team; be involved in the delivery of training to ADF personnel on secondment to the Hospital; and be involved in research and teaching.

During military service, the ADF MST will contribute to and enhance the ADF's health support capability on military and humanitarian operations and exercises.

The presentation will discuss the implementation and key outcomes of the pilot project in 2012.

PROVIDING EFFECTIVE FORWARD SURGERY IN MANOEUVRE WARFIGHTING – A COMMAND PERSPECTIVE

MARK ELLIOTT

Major Mark Elliott commanded 23 Air Assault Medical Squadron during the 2003 invasion of Iraq whilst in the British Army. The Squadron provided Role 1 and 2 (enhanced) forward surgery to manoeuvre Battlegroups during all phases of the operation. He has a wide range of operational experience covering peace support, stability and counter insurgency operations and has deployed twice on manoeuvre warfighting operations.

He is a lateral recruit to the ADF and has worked in the Land Warfare Development Centre. His current role is in Health Plans in HQ Northern Command.

The Invasion of Iraq in 2003 was the last time that formation manoeuvre warfighting occurred in the British Army. Current operations see health support occurring within a framework of the Joint Trauma system and that system currently supporting a mature operational environment. The mature operational environment is generally based on a framework of forward operating bases and support bases with dedicated Aeromedical evacuation support.

In formation manoeuvre warfighting you are faced with a completely different operational environment. The ability to be able to provide effective support at the Battlegroup (BG) and Brigade level relies on being embedded in the planning phase with the BG HQ, a comprehensive command and communication suite to be able to talk to both ground and air assets, mutual support from other health units and a medical facility that is adaptive, agile and robust enough to be able to deploy and re-deploy for a range of mission types. Personnel training and skillsets have to be matched to the mission and equipment available.

Further there are a range of constraints and restrictions that have to be planned and factored for including an uncertain casualty estimate and poorly defined "medical rules of engagement", "no fly" periods for Aeromedical evacuation due to availability, threat level, weather or offensive support, health logistics issues, protection, mobility and environmental factors both internal and external.

23 Air Assault Medical Squadron centre of gravity was the Air Assault surgical group (AASG) providing Role 2 (Enhanced) Forward Surgery (including Damage control Surgery) with Medical Sections deployed out providing Role 1 support. The AASG shape and form was the result of a distillation of over 20 years of operational experience which resulted in a facility that

was adaptive and robust enough to deploy on a range of air platforms (including parachute) and by a wide variety of land assets.

This paper will outline the issues faced in providing forward surgical support in this environment and discuss in detail what worked and lessons learnt.

CONTROVERSIES IN TRAUMA RESUSCITATION: PLASMA-TO-RED CELL RATIOS, PLATELETS, TRANEXAMIC ACID, AND HYPOTENSIVE RESUSCITATION

LTCOL MICHAEL C. READE

After clinical training in Sydney and Melbourne, a doctorate from Oxford and an MPH from the University of Pittsburgh, Michael returned to Melbourne as an Associate Professor of Intensive Care Medicine in 2007. In 2011, after 22 years in the Army Reserve including deployments to the Balkans, Timor, the Solomon Islands and Afghanistan, he was appointed to a full-time Defence position as the Professor in Military Medicine and Surgery at the University of Queensland. He is developing a research programme at the interface of civilian and military trauma, including management of acute cognitive impairment, traumatic coagulopathy, and trauma systems design.

Modern research has questioned many time-honoured practices in trauma resuscitation, and introduced promising new technologies. However, evidence supporting these developments seems prone to unwarranted extrapolation by enthusiastic clinicians.

The British and US militaries implement a policy of 1:1 fresh frozen plasma: packed red blood cell ratio for transfusion in patients anticipated to require massive transfusion (>10 units in 24 hours) due to trauma. However, the Australian National Blood Authority in its 2010 guideline recommends only that a ratio of 1:2 be considered, and the American Association of Blood Banks 2010 guideline explicitly makes no recommendation for or against a ratio of greater than 1:3. By March 2012, 26 observational studies enrolling 6655 patients (Ho AM et al., Anesthesiology, 2010) had addressed this question. Uncertainty and lack of agreement in guidelines relates to possible survivor bias in many of these studies. There is undoubtedly also a conflict between clinicians tempted by an intuitively appealing concept, and custodians of the blood supply who see potential broader implications. The Australian Defence Force currently makes no recommendation, though anecdotally a policy of 1:1 transfusion has been practised by the Australian Defence Force Medical Treatment Facilities in the Middle East.

A high ratio of platelets to other blood components transfused has also been found in retrospective data to be associated with improved outcome. However, the evidence is even less sound than for plasma, and the availability of liquid-stored platelets (with a shelf-life of only five days) limits the applicability of this therapy. Cryopreserved platelets overcome problems of supply, and are possibly more clinically effective. ADF personnel have received cryopreserved platelets during recent deployments, and the Dutch armed services have more than six years' experience with this technology. However,

human clinical trial evidence is limited to a single study of 73 patients.

The recent CRASH-2 trial (CRASH-2 collaborators, Lancet, 2010) found mortality reduced by tranexamic acid if given within three hours of injury. However, a subsequent analysis found death due to bleeding significantly increased (from 3.1% to 4.4%) if tranexamic acid was given later than 3 hours. Furthermore, the trial was conducted principally in developing countries, with less access to plasma transfusion and with less availability of modern trauma surgery and intensive care. The Australian Defence Force currently makes no recommendation regarding tranexamic acid, and Australian civilian trauma services have different approaches.

Hypotensive resuscitation has been central to trauma management since the landmark study of Bickell (NEJM, 2004). However, the circumstances of this study are seldom relevant to military trauma, and there is increasing concern that Acute Traumatic Coagulopathy, and indeed mortality, is worse with the prolonged application of this approach.

This review summarises the available evidence for and against the interventions listed, and makes interim recommendations for practice in anticipation of the results of the planned upcoming (hopefully definitive) trials. The ADF / Australian Red Cross Blood Service programme of research into cryopreserved platelets and factor concentrates will be a major influence on future trauma practice, both military and civilian.

FROZEN BLOOD PRODUCTS: A SOLUTION FOR DEPLOYED HEALTH FACILITIES?

CMDR ANTHONY HOLLEY

Anthony is a dual qualified intensivist and emergency physician working at Royal Brisbane and Women's Hospital as a senior staff specialist. He is a senior lecturer with the University of Queensland Medical School and Chairman of Australia New Zealand Intensive Care Society, Queensland. Anthony was the recipient of the Matthew Davey Award that facilitated study at the Netherlands Military Blood Bank. He serves as a representative for the National Blood Authority Critical Care Expert Group. Anthony has deployed on a number of occasions including to Angola, Bougainville, East Timor, The South Pacific, The Persian Gulf and most recently to Afghanistan.

Haemorrhage is a potentially reversible cause of trauma deaths. The concept of haemostatic resuscitation, characterised by transfusion of blood products in an immediate and sustained fashion is well established. Early transfusion with red blood cells, platelets and plasma in a 1:1:1 ratio appears beneficial. This paradigm demands products be readily available in austere environments. Investigation into synthetic products has failed to provide a viable alternative. Refrigerated liquid products are limited by short shelf lives, while fresh, warm whole blood has significant draw backs. Deep freezing is able to substantially extend the shelf life of blood products required for resuscitation, facilitating practical resupply.

Product	St	Storage shelf Life of product
	Standard iquid Blood	Dep Frozen Blood
Red Blood Cells	42 days at 4oC	10 years at -80oC
Platelets	5 days at 22oC	2 years at -80oC
Fresh Frozen plasma	1 years at -30oC	7+ years at -80oC

Deep frozen blood product production requires cryopreservation with glycerol in the case of erythrocytes and dimethyl sulphoxide for the preservation of platelets. These agents protect the biological elements from the destructive potential of deep freezing. Prior to transfusion the products must be washed/prepared including removal of cryopreservatives. The development of a deep frozen blood product supply could substantially enhance the ability to provide high quality critical care for injured service personnel on deployment or civilians in remote centres. This presentation will describe the processes, training, Dutch experience and potential pitfalls of adopting “deep freezing” technology.

REHABILITATION AND RECOVERY OF MILITARY PERSONNEL WITH SERIOUS WOUNDS, INJURIES AND ILLNESSES

ROWENA ENGLISH AND JULIE WILSON

The Simpson Assistance Program (SAP) aims to support and enhance the efforts of Defence to reduce the impact of serious injury or illness on Australian Defence Force (ADF) personnel. Defence currently has a very successful occupational rehabilitation program but acknowledges that improvements can still be made. SAP will assist and encourage ADF personnel (with the support of their families) to return to the ADF workplace in either similar or new capacities through the provision of a comprehensive approach to tailored recovery programs which support the individual needs of wounded ADF personnel and their families.

SAP is consistent with current efforts to improve family engagement, service integration and seamless transition.

There are currently 11 work streams within the SAP which contribute to rehabilitation excellence. The focus of this presentation will be on the Intensive Recovery Program, meaningful engagement and rehabilitation research projects.

MUSCULOSKELETAL CONDITIONS AND PSYCHOLOGICAL COMORBIDITIES IN AUSTRALIAN GULF WAR VETERANS

DR HELEN KELSALL, DR DEAN MCKENZIE, PROF ANDREW FORBES, MS MINA ROBERTS, PROF MALCOLM SIM

Dr Helen Kelsall is a Senior Research Fellow and public health physician at the Department of Epidemiology and Preventive Medicine, Monash University. She is an Investigator on the current study of the health of Australian Gulf War veterans and military comparison group being undertaken by Monash University and was an Investigator and undertook her PhD on the 2000-02 baseline study. Her particular interests include physical health assessment in veterans and the relationship between physical health, psychological health and exposures in veteran and military populations. Research interests include public and occupational health and continuing professional development.

Introduction: Musculoskeletal conditions are common causes of pain and disability and have been found by community studies to co-occur (be comorbid with) psychological conditions such as depression and anxiety.* Little is known about such musculoskeletal comorbidity in defence and veteran populations, however.

Aim: The aim is to investigate the comorbidity of musculoskeletal disorders and psychological disorders in Australian Gulf War veterans compared with a military comparison group.

Methods: In 2000-2002, Australian Gulf War veterans and military comparison group members participated in a study that included a comprehensive postal questionnaire, which asked about demographic and military service details, reported doctor diagnosed medical conditions including arthritis or rheumatism, joint problems, back or neck problems, fibrositis or fibromyalgia or soft tissue injuries; and whether they had been treated by a doctor in the past year. Medical practitioners rated self-reported medical conditions as probable diagnoses,

possible, unlikely or non-medical as part of a face-to-face interview. We studied musculoskeletal conditions that were diagnosed as probable and had been treated in the past 12 months. The Composite International Diagnostic Interview (CIDI) assessed current depression, posttraumatic stress disorder (PTSD) and alcohol abuse or dependence based on DSM IV criteria based on symptomatology occurring within the previous 12 months. Due to small numbers of female Gulf War veterans, these analyses were limited to 1424 male veterans and 1548 male comparison group subjects. Logistic regression was used to investigate the relationship between musculoskeletal conditions and Gulf War service or psychological comorbidity, adjusting for potential confounding variables such as age and rank.

Results: The proportion of Gulf War veterans and comparison group members who reported any doctor diagnosed musculoskeletal condition that had been treated in the past year was similar in both groups (12.6 vs 11.4%, OR 1.11; 95% CI 0.88-1.41). For arthritis or rheumatism the findings were 3.6 vs 3.5% (OR 1.09; 0.73-1.63); for joint problems were 11.9 vs 10.8% (OR 1.12; 0.88-1.41); and soft tissue disorders, both 0.4% (OR 1.10; 0.35-3.40). A slightly higher proportion of Gulf War veterans reported having treated back or neck problems (16.2 vs 13.9%, OR 1.22; 0.99-1.51) but the difference was not statistically significant. Arthritis or rheumatism was associated with comorbidity of depression in Gulf War veterans (OR 3.42; 1.64-7.14) and comparison group (OR 4.05; 1.84-8.95); with PTSD in Gulf War veterans (OR 2.89; 1.22-6.86) and comparison group (OR 3.71; 1.03-13.36) and with alcohol abuse or dependence in comparison group subjects only (OR 2.77; 1.31-5.84).

Conclusions: The occurrence of musculoskeletal disorders is similar in Gulf War veterans and comparison group. Arthritis or rheumatism is associated with increased psychological comorbidity in both study groups, consistent with community findings. Comorbidity of these conditions has implications for treatment and management and so should be considered during assessment.

*AIHW 2010. When musculoskeletal conditions and mental disorders occur together. Cat. No. AUS 129. Canberra: AIHW

THE HEALTH AND WELLBEING OF ADF RESERVISTS: A REVIEW OF THE LITERATURE

SAMANTHA CROMPVOETS, PHD

Dr Samantha Crompvoets, BSC (hons) Melb PhD ANU, is a Sociologist and Research Fellow in the ANU Medical school. Dr Crompvoets is Chief Investigator on a number of DVA and Defence funded projects examining issues of gender, workforce, identity, culture, health and wellbeing. Her current projects include examining the health and wellbeing of female veterans, and the history, identity and wellbeing of ADF reservists. Other research in particular includes an analysis of the free text responses in the recent ADF census and reserve attitude survey, compiling a history of the Defence Reserves Association and analysing the marketing and recruitment campaigns aimed at Reserves since Federation.

This paper presents findings from a systematic review of the academic and government literature on Reserves. The findings highlight a set of issues for Reservists that at one level exist as structural ADF personnel matters, for example conditions of service, retention, incentives, and employer and family support. However all of these have a direct impact on reservist health and wellbeing, in particular their mental health.

The main themes that emerged from the review included the history and role of Reserves internationally and in Australia, descriptions of and challenges to Reservist identity and the context of military culture, commitment and engagement, deployment and its effects on mental health, civilian employers and civilian employment, job satisfaction and Reservist spouses and families.

In conclusion, considerable gaps exist in our knowledge of the health and wellbeing of ADF Reservists. To date, most research on Australian reservists focuses on capability. Rather than dismissing this literature as irrelevant to health this review has examined the findings and found that significant factors contributing to reservist health and wellbeing are visible as issues of 'commitment' and 'retention'.

THE WELLBEING TOOLBOX: FINDINGS OF THE EVALUATION OF AN ONLINE MENTAL HEALTH AND WELLBEING RESOURCE

DELYTH LLOYD, CHRIS CLARKE, JOHN O'CONNOR, **KYM CONNOLLY, JANE NURSEY,** ANDREA PHELPS

Kym Connolly is the Director of Mental Health Programs at the Department of Veterans' Affairs. The Department supports a wide range of mental health services, including counselling and referral services for veterans, war widow/ers, serving members, former defence force members and their families. Ms Connolly leads the delivery of client and staff mental health literacy, allied mental health provider engagement and training, and suicide prevention programs.

Jane joined ACPMH in 2010 as a Senior Clinical Specialist. She is a Clinical Neuropsychologist and has worked in public acute and mental health services across Melbourne for 18 years, including in Child and Adolescent, Adult and Aged Care services. She has developed psycho-education programs on the

neuropsychology of PTSD, delivered group and individual based treatments to traumatised clients and coordinated a treatment service for bushfire survivors following the Victorian bushfires in February 2009. At ACPMH Jane is involved in policy and service development projects as well as education and training programs.

The Wellbeing Toolbox is a self-help online resource for veterans and other former serving members and their families. The primary goal of the Wellbeing Toolbox is to provide an accessible resource for those with wellbeing concerns, who are not currently engaged in other mental health services. The Wellbeing Toolbox comprises six modules, based on Skills for Psychological Recovery (SPR; National Center for PTSD and National Child Traumatic Stress Network, 2007. The modules are: solving problems; building support; helpful thinking; getting active; keeping calm; and sleeping better. A 12 month trial of the Wellbeing Toolbox commenced in February 2011. The evaluation was designed to answer the following key questions: Who is using the Wellbeing Toolbox?; How much are the different parts of the site being used?; Is it helping users to address their wellbeing problems?; Is it meeting the needs of contemporary veterans?; How acceptable and accessible is the Wellbeing toolbox?; How could the user experience be improved? Data for the evaluation was drawn from Google Analytics website tracking date, website feedback, a brief on-site survey and interviews with users. This presentation will present the key findings and lessons learned from the trial.

HELP SEEKING, STIGMA AND BARRIERS TO RECEIVING CARE IN THE ADF: THE MEDIATING ROLE OF MENTAL HEALTH DISORDER

HODSON S, VAN HOOFF M, MCFARLANE A, BENASSI H, VERHAGEN A, STEELE, N

Colonel Stephanie. Hodson graduated from James Cook University in Townsville with a BPsych (Hons) in 1990 and joined the Army in August 1991. She had had a range of posting across Australia including recruiting, research and counselling duties. LTCOL Hodson completed her doctoral studies investigating the longitudinal psychological effects of operational deployment to Rwanda in 2002 and in 2003 completed Command and Staff College. In 2006 she assumed command of the 1st Psychology Unit and was responsible for all land base psychology support to ADF operations. While CO 1 Psych she had the opportunity to deploy to both the Middle East Area of Operations and Timor L'Este. For her work during this posting she was awarded the Conspicuous Service Cross in the 2009 Australia Day Honours List, "For outstanding achievement as the Commanding Officer, 1st Psychology Unit". She is currently psychologist adviser at Department of Veterans' Affairs

Given the prevalence of mental disorders in the ADF, we must ask why so few military personnel receive care. Research indicates that two main factors contribute to the low uptake of mental health care: the fear of stigma and perceived barriers to care. The degree to which public stigma is internalised will influence the extent that personnel feel able to access support for mental health issues. This is particularly pertinent to those with a mental health

problem as it is often only when a person attempts to seek help, do they feel the stigmatization and judgment for doing so. Utilising results from the 2010 ADF Mental Health Prevalence and Wellbeing Study, this presentation will examined the relationship between current psychiatric disorder, help seeking, stigma and barriers to care. The implications of these findings for training and service provision within the ADF will be discussed.

GROUP COGNITIVE BEHAVIOURAL THERAPY TREATMENT FOR SERVICE RELATED POSTTRAUMATIC STRESS DISORDER: EFFECTIVENESS, SUSTAINABILITY AND REPEATABILITY.

ANDREW KHOO, MICHAEL T. DENT, TIAN P.S. OEI

Dr Andrew Khoo completed his undergraduate medical degree from the University of Queensland in 1994 and received his fellowship from the Royal Australian and New Zealand College of Psychiatrists in 2002, receiving a College medal for his final year dissertation on Post Traumatic Stress Disorder. He presently divides his time between private practice and being the Clinical Director of the Toowong Private Hospital Group Therapy Day Programs. Given his clinical practice in the private sector, his specific interests include the treatment of mood and anxiety disorders, particularly psychopharmacology and group therapy. He is a Senior Lecturer for the University of Queensland Medical School and what time he finds for academic work is currently spent compiling and publishing papers on PTSD, CBT and group therapy.

Objective: To assess 12 month outcomes of Australian combat veterans with posttraumatic stress disorder (PTSD) who participated in a six week group based CBT program at the Toowong Private Hospital. The study population included 496 consecutive admissions to the program between 1999 and 2008.

Method: Self report measures of PTSD, depression, anxiety, anger, alcohol use, relationship satisfaction and quality of life parameters were collected at intake and 3, 6 and 12 months post intake.

Results: Statistically significant and sustained improvements were noted in 12 month outcome measures for PTSD, depression, anxiety, alcohol use, anger, and quality of life. PTSD symptom reduction occurred consistently each year for nine years and exhibited an aggregated effect size of 0.68. Maximal symptom change occurred during the intensive phase of treatment (ie over the first 12 weeks) on all symptom scales and for quality of life scores. Using calculated reliable change data for the PCL, 6 out of 10 participants were found to have had a clinically reliable improvement in their PTSD symptoms sustained at 12 months with 2 out of ten no longer meeting criteria for PTSD.

Conclusions: This naturalistic research demonstrates that treatment administered under clinical conditions produces equivalent magnitudes of positive change in terms of PTSD symptoms when compared with existing efficacy data in individual and group treatments. Further these symptomatic gains are sustainable and consistently reproducible. The benefits noted from group therapy were seen as independent of whether or not individual treatment was in place.

ENVIRONMENTAL HEALTH PROVISION IN HUMANITARIAN CRISIS

GLENN KEYS, **JAMES WILLIAMS**

James Williams is the Project Manager - Environmental Health for Aspen Medical, a private medical solutions company based in Canberra. James is a degree-qualified environmental health consultant and has experience managing health service contracts for various Australian Government assistance missions including the Regional Assistance Mission Solomon Islands (RAMSI), International Stabilisation Force (ISF) East Timor and recently consulted for AusAID in Papua New Guinea. James has a demonstrated operational knowledge of public and environmental health challenges facing the Pacific region.

When disaster strikes, whether through natural or anthropogenic causes, the first response that often comes to mind is a classical medical approach to treat the sick or injured. However, environmental health officers can play a very large part in this first response by utilising their knowledge in potable water, food and sanitation, playing an integral role in preventing the spread of disease and limiting the duration of the emergency. This session describes James' recent experience as the environmental health consultant for AusAID during a cholera outbreak in South Fly and Middle Fly districts of Western Province, Papua New Guinea. It aims to provide an insight into Australia's northern border region, explores some of the challenges in providing technical assistance to an environmental and public health emergency in a developing country context. Although this emergency was not caused by a natural disaster, it is an example of what occurs when public health infrastructure breaks down and/or is inadequate.

WORKING OVERSEAS - MEDICAL ASSISTANCE AND EVACUATION

DR MIKE BROADY, INTERNATIONAL SOS - REGIONAL MEDICAL DIRECTOR - ASSISTANCE

Mike Broady directs the International SOS Australasian alarm centre and assistance services.

The Australasian region is known for its remote and challenging locations coupled with highly variable local medical services. Dr Broady directs the team of doctors, nurses, security and logistics team to ensure the safety and security of our clients in these environments.

In addition to managing the Australasian region, Dr Broady's team support our 26 other alarm centres to manage health and security risk across the world.

Mike has more than 16 years of broad medical experience and has served as a Community Trust medical director in the UK, and has advised local government and the Strategic Health Authority during the Swine Flu pandemic.

Working Overseas - Medical Assistance and Evacuation

Description of Material: Over the past decade, governmental and non-governmental organisations have more employees working, living and traveling in previously remote destinations and austere environments. Operating in these regions can pose significant health challenges specific to that part of the world. Unfortunately, the medical infrastructure may be significantly limited across many

regions globally and individuals needing healthcare abroad in these environments may require medical assistance or evacuation.

Application: Medical assistance ranges from medical advice to emergency medical transportation to save life or limb. Aeromedical movement can take a variety of forms ranging from air ambulance evacuations to medically escorted transportation on a commercial airliner. Each patient needs to be assessed on a case-by-case basis taking into account a variety of factors to include barometric effects, oxygen limitations, and mobility. An understanding of the complexities and limitations of international aeromedical evacuations allows governmental and non-governmental organisations to be better prepared in the event of an emergency.

Results, Observations, and Conclusions: Original analysis of medical evacuation data from Africa and Papua New Guinea will be presented. Case trends show the top causes for evacuation are 1) Accident and Injury 2) Cardiovascular disease 3) Gastrointestinal disease and 4) Infectious disease. Cases in high-risk countries are more likely to result in an evacuation due to the limited local medical infrastructure, thus making the risks of deployment significantly higher in these regions. Further analysis reveals the highest risk medical conditions to manage overseas are cardiovascular in nature. This emphasises the importance of cardiovascular risk screening in overseas fitness to work exams.

Significance of Subject Matter: Overall, the data suggests that a robust occupational health program and regular pre-travel health assessments can play a key role in attempts to reduce morbidity and mortality while abroad and reducing the medical and financial risk of managing overseas personnel. Effective prophylaxis and education can assist in mitigating the health risks posed by working overseas.

THE CRUCIAL ROLE UNDERTAKEN BY THIS DIRECTORATE IN HUMANITARIAN ASSISTANCE /CIVIL ACTION OPERATIONS DURING PACIFIC PARTNERSHIP 2012 AND THE WIDE SCOPE OF OPERATIONS ABLE TO BE MANAGED ON THIS PLATFORM

JOHN MCHUGH

During my deployments on USNS MERCY PP08 to PNG and again in PP12 to Indonesia and the Philippines, this directorate managed a large percentage of the screened cases to be operated on aboard USNS Mercy. In my second tour during PP12 of 6 weeks , my caseload included over 20 cleft palates 18 cleft lips, many in teenagers or older children. 9 large late presenting parotid tumours, jaw tumours including an Ameloblastoma requiring resection of three quarters of the mandible, late presenting thyroid goitres and other cases such as the reconstruction of facial post traumatic deformity requiring the harvesting of a rib graft. I also saw routine lipomas and other tumours and assisted other specialities as required eg for a leg amputation. All these operations were performed aboard apart from a meningocoele through the nasoethmoidal complex in a young child which we managed in a shore based facility working with host nation surgeons. We worked closely with host nation surgeons whom we also brought aboard.

The department of Surgical Services , medical , dental ,optometry and veterinary directorates also spent thousands of hours engaged in SMEE, subject matter exchanges, ashore, to enhance our interoperability and facilitate good relationships with host and partner nations.

THE EFFECTIVENESS OF CIVILIAN TRAUMA CENTRES AND SYSTEMS: LESSONS FOR THE ADF?

LTCOL MICHAEL C. READE

After clinical training in Sydney and Melbourne, a doctorate from Oxford and an MPH from the University of Pittsburgh, Michael returned to Melbourne as an Associate Professor of Intensive Care Medicine in 2007. In 2011, after 22 years in the Army Reserve including deployments to the Balkans, Timor, the Solomon Islands and Afghanistan, he was appointed to a full-time Defence position as the Professor in Military Medicine and Surgery at the University of Queensland. He is developing a research programme at the interface of civilian and military trauma, including management of acute cognitive impairment, traumatic coagulopathy, and trauma systems design.

Modern military trauma systems evolved from structures developed in response to the conditions of the First World war. External haemorrhage control at a Regimental Aid Post in the trenches (Role 1) was followed by evacuation by stretcher bearer or motor Field Ambulance to a Casualty Clearing Station (Role 2), where (in some cases) limited lifesaving surgery could be performed in order to allow survival during transport (via road or rail) to a larger Field Hospital (Role 3). Here, definitive surgery was performed, and if return to duty was not practical, evacuation to reconstructive surgery (Role 4) and rehabilitation (Role 5) in the UK followed. A World War One soldier would recognise all these elements in the trauma systems deployed during current and recent conflicts in the Middle East. However, modern civilian trauma medicine has evolved: major trauma is treated with simultaneous resuscitation and surgery, making 'non-surgical' resuscitation obsolete. Civilian trauma patients often bypass smaller hospitals en route to major trauma centres. They are routinely pan-CT scanned immediately after admission. Specialists in trauma surgery (as opposed to general surgery) are assisted by sub-specialists in the planned, staged management of injuries, assisted by intensive care units where patients are kept alive with the full suite of organ support (including renal replacement) in-between procedures. A modern soldier might or might not find these features in current military medical systems. Current literature provides some answers to a variety of questions relevant to the optimal design of military trauma systems, but also leaves many questions unanswered. For example,

- Do trauma centres provide better outcomes for individual patients than non-trauma centres?
- WHY do trauma centres have better outcomes?
- Do trauma systems produce better population outcomes?
- Can EVERY hospital be a trauma centre?
- Is it better to go FIRST to the closest hospital, or to a major trauma centre?

- How much longer initial transport time is it worth to get to a major trauma centre?
- Can a trauma system designed for military casualties, involving rapid evacuation to higher levels of care, also provide an adequate service to civilian casualties who cannot be evacuated?

The conclusion from the evidence suggests effective triage is the key to balancing effectiveness and efficiency in a deployed medical system. Lessons from the Middle East conflicts suggest triage can be informed by decision-support rules, but is best performed by a competent clinician next to the patient who can anticipate the interventions required, the likely course with and without such interventions, and who has the seniority and authority to design a comprehensive therapeutic plan that will be carried through immediately by the receiving hospital.

RESULTS OF THE ARMY COLOUR PERCEPTION STUDY

ADJUNCT PROFESSOR JOHN PARKES, CSC; ASSOCIATE PROFESSOR PETER NASVELD; PROFESSOR PETER WARFE, CSC

John Parkes is an occupational physician with a particular interest in colour vision. He has a comprehensive colour vision testing laboratory in Melbourne and sees referred workers for colour vision testing from all over Australia. He has performed reviews of colour vision standards for various national and state organisations. He is a member of the International Colour Vision Society. He spent 19 years in the Royal Australian Navy before transferring to the Royal Australian Naval Reserve in 1996. He is a Captain and is currently Regional Director, Naval Health Reserves, for Victorian and Tasmania.

This is a study commissioned by Army and carried out by the Centre for Military and Veterans Health. A number of critical employment categories in the Australian Army were examined to determine the appropriateness of the colour perception categories that had been allotted to these categories. For many of these employment categories driving was either a primary or secondary duty. Driving in the Australian Defence Force had been considered to go beyond the standard laid down in the National Transport Commission's Assessing Fitness to Drive for Commercial and Private Vehicle Drivers 2012 (and previously 2003) and maintained the former proscription against commercial drivers with protanomal and protanope defects promulgated in earlier National standards. The safety critical and operational critical colour vision tasks were identified for the primary and secondary duties for these employment categories, including driving tasks (including night driving, amphibious driving and operational driving). This was done through interviewing category sponsors and other experienced personnel, particularly Warrant Officers. Risk assessments were then carried out regarding the appropriateness of the assigned colour perception categories vis-à-vis these safety critical and operational critical colour vision tasks. Out of this process recommendations were made regarding the resetting of colour perception categories as appropriate. To validate the process, two employment categories (one including driving tasks) were evaluated by observing experienced personnel from these categories both with normal colour vision and with a range of colour vision defects (that is, personnel with different colour perception categories) carrying out these safety critical and operational critical colour vision tasks. (Comprehensive colour vision testing was done on these personnel to ascertain their colour perception standards independent of the initial testing done in the course of their recruitment to the Army.) The process was thus validated.

EXPOSURE OF AIRCREW TO HAND-HELD LASER POINTERS: WHAT ARE THE RISKS?

DR ADRIAN SMITH, MR DAVID PHILIPS

Adrian Smith is a Specialist in Aerospace Medicine and research medical officer with the RAAF Institute of Aviation Medicine and HQ Forces Command.

David Philips is a final year year medical student at Australian National University who completed this project under the supervision of Dr Smith.

Exposure of aircrew to hand-held laser pointers is an increasing trend, for ADF aircrew as well as for civil aircrew around the world. Aircrew who have been exposed to lasers often experience extreme anxiety realted to the perceived risks to their eyesight; however, a review of laser events from around the world indicates that the risk is so small as to be negligable. This paper will present recent data related to exposure of aDF aircrew to lasers, and compare this to larger datasets from the commercial aviation world in order to illustrate the potential dangers of laser exposure of aircrew. Arising from the data collected, this presentation will also discuss an evidence-based approach to the management of aircrew who have been lased, in order to ensure prompt investigation and treatment of those who have suffered hazardous eye exposures but managing conservatively those who have had a benign exposure.

SOLDIER LOAD CARRIAGE: A INVESTIGATION OF THE LOAD CONDITIONING PRACTICES OF THE AUSTRALIAN REGULAR ARMY

ASSISTANT PROFESSOR ROBIN ORR,
DR RODNEY POPE, DR VENERINA JOHNSTON, ASSOCIATE PROFESSOR JULIA COYLE

Having served in the Australian Army as an infantry soldier, Physical Training Instructor, physiotherapist, and human performance officer, Rob has recently accepted a position at Bond University. Rob's fields of research include physical conditioning and injury prevention for military and protective services spanning from the initial trainee to the elite warrior. Currently focussing on tactical load carriage, Rob is exploring means of reducing injuries associated with load carriage tasks and improving the mobility and lethality of soldiers and tactical police. Published in newspapers, magazines and peer-reviewed journals, Rob is regularly invited to present at conferences both nationally and internationally.

Introduction: Soldiers must carry equipment and move, on foot, over various terrains for long and continuous periods. While the equipment carried is often crucial to mission success and survival, its weight may be a source of risk to the carrier. As physically conditioning soldiers to carry heavy load may present as a risk control strategy, the purpose of this study was to compare current Australian Regular Army (ARA) load carriage conditioning practices with previously established best practice standards for military load carriage conditioning.

Methods: ARA soldiers and units were selected via purposive sampling and invited to participate in the study. Soldier self-reported participation in load carriage physical training (PT) was captured via online survey. In addition, textual PT programs were requested from training institutions and operational units. On receipt of textual PT programs, relevant data were extracted and each PT session rated from 1 to 4 based on the session's specificity and value to load carriage conditioning (in accordance with established best practice). A rating for each PT session was determined by reviewing the PT session title, dress, nature of the PT activity, and any clarifying comments to describe the lesson.

Results: Of the 303 survey respondents, 41% (n=126) reported participating in a load carriage PT session in the preceding fortnight. Marching Order was the most commonly reported form of dress (69%) with mean loads carried of 36.3 kg (SD=12.0kg) or 43% body weight (SD=14% BW). Roads (42%) and dirt or grass (39%) constituted the predominant terrains traversed with over 90% of sessions conducted on flat ground or over mild hills. Endurance Marching was the most common activity (60% of nominated activities) with the majority of reported sessions (79%) lasting no more than 2 hours.

The load carriage PT programs of Initial training institutions generally met with best practice evidence. However, only one (25%) of the corps training institutions built on, and progressed, these initial conditioning standards (up to 32 kg for 165 minutes of endurance marching). Two of the four trade training institutions conducted no load carriage specific conditioning over the duration of their course. Among the PT programs obtained from operational units, 50% (n=4) included load carriage specific PT (up to 31 kg for 120 minutes of endurance marching), the remaining operational units conducted no specific load carriage PT session over their PT program durations.

Conclusions: When viewed through the lense of the Frequency, Intensity, Time and Type of training principle, the load carriage practices of both the survey respondents and the conditioning programs in trade training institutions and operational units achieved limited success in meeting established evidence-based guidelines for load carriage conditioning. These findings suggest that a training gap exists between ARA current load carriage conditioning practices and the load carriage requirements of soldiers and selected army units during field training exercises and on operational duties.

RECOGNITION OF HYPOXIA IN A SIMULATED FLIGHT ENVIRONMENT.

ADRIAN SMITH

Adrian Smith is a Specialist in Aerospace Medicine and research medical officer with the RAAF Institute of Aviation Medicine and HQ Forces Command.

Introduction: For many years hypoxia awareness training has been conducted in a benign training environment in which aircrew are required to identify their hypoxia signature whilst performing simple neurocognitive tests. This project aimed to determine if conducting hypoxia training in a simulated flight environment diminished the ability of aircrew to recognize their hypoxia signature.

Methods: 13 experienced aircrew were briefed to undertake a 45-min simulated sortie in a part-task trainer, during which hypoxia would be initiated without prior warning. The time for aircrew to recognize hypoxia symptoms and initiate recovery action was recorded, along with the SpO2 at the time of recovery. The spectrum of symptoms and symptom severity was recorded immediately after recovery. As a baseline, hypoxia was repeated without the simulated flight task but with prior warning; elapsed time and symptoms were recorded. The baseline and experimental conditions were compared to each other,

and to the individual's memory of hypoxia from previous training.

Results: There was significant overlap in the symptoms of hypoxia experienced in the baseline and simulated flight conditions, although the simulated flight environment appeared to highlight neurocognitive and psychomotor effects more than the baseline condition. 60% of subjects initiated recovery 15 seconds earlier in the simulated flight environment than the baseline condition (paired t-test, $p<0.03$). 69% of subjects recovered at the same level of hypoxia, with another 23% recovering at a slightly lower level of hypoxia (paired t-test, $p=0.18$). By 2 minutes, 70% of aircrew had recovered in the simulated flight environment, compared to only 55% in the baseline condition (chi square, $p<0.001$).

Conclusion: The results of this study suggest that aircrew may be better able to recognize hypoxia in a simulated flight environment than in a benign training setting, possibly because they are engaged in a familiar task environment within which they are able to detect subtle impairments in performance.

DEFENCE MEDICAL OFFICER ATTITUDE SURVEY: THE ADF MEDICAL EMPLOYMENT CLASSIFICATION REVIEW (MECR) SYSTEM

CMDR NEIL WESTPHALEN

Neil graduated from the Adelaide University Medical School in 1985, and joined the RAN on 23 Jan 87 as a direct entrant. He served initially in CERBERUS before joining SWAN for an up-top deployment, followed by STALWART operating off SE Australia. He then spent a year at BNH and another at KUTTABUL (his first posting as a SMO) before proceeding on LWOP for general practice training in Launceston in 1991-2.

In Jan 1993 he joined SUCCESS for an up-top deployment as the sole Task Group MO (in company with two FFG's and a DE), followed by SYDNEY in the Northern Red Sea for DAMASK VII. He was SMO ALBATROSS in 1994-6 and joined PERTH for RIMPAC 96, thence PENGUIN for RAN Staff College Course 36/96, followed by a six month Diploma of Aviation Medicine at the RAF School of Aviation Medicine at Farnborough in the UK. During this time he also completed his FRACGP.

After another stint as SMO ALBATROSS in 1997-99, he was posted to the then HQAST as SO1 Health Ops for 11 months, then to STIRLING as SMO (and Senior Health Officer for the WA Area Health Service) from Jan 2001. Whilst SMO STIRLING he was seconded to HQ PKF in East Timor filling a RAAF AME coordinator billet; to MELVILLE for Op RELEX, and to Op GEMSBOK (to extradite VIARSA-1 from South Africa to Australia for Patagonian toothfish poaching). He also commenced his occupational medicine studies, which included a Master of Public Health.

He had a part-time posting as OIC SUMU-West and returned to the SMO STIRLING billet in Nov 2005 and completed his second fellowship a year later, as a specialist occupational and environmental physician. He was seconded to MANOORA as OIC PCRF for Ex TALISMAN SABRE in Jun 2007, and again in Nov 2008 for the SYDNEY II commemoration off Geraldton. He moved to Canberra as the Director Navy Occupational and Environmental Health in Jan 09, and took over as DNH in Sep 10. He has been the SO1 MECARS since Jun 11.

Background: There is considerable variation in the quality of the CMECR clinical documentation received at the Medical Employment Classification Advisory and Review Services (MECARS, previously Medical Services) at Joint Health Command. This has implications regarding UMECRs and short-term fitness-for-duty decision making within the garrison health setting, noting that - unlike CMECRs - they are not subject to oversight by MECARS.

A review of civilian GP attitudes towards sickness certification in the UK and Scandinavia identified three themes, including conflict between GPs and other certification stakeholders, difficulty reconciling their various certification roles, and barriers to good practice such as their certification decision making competence. It also found that a large number of GPs would prefer not to participate in the sickness certification process.

It therefore seems likely that MECR decision making quality is significantly influenced by the attitude of the garrison health MOs who participate in the process.

Aim: This paper reports on the attitude of Defence garrison health MOs, regarding their participation in the MEC process.

Methods: A questionnaire was developed and distributed to all participants at the 20th AMMA Conference held in Melbourne in October 2011. Additional questionnaires were distributed via email through the garrison health organisation. Recipients were requested to complete a hard copy of the survey and fax it to MECARS. The results were analysed using SPSS Statistics Student Version 18.

Results: MECARS received 82 useable questionnaires from 520 garrison health MOs (15.8% response rate). Findings of note include:

- 18.3% of responders had not undertaken any MECR training, while only 29.3% of those who had undertaken the training considered it either good or very good.
- Only 54.9% rated the Member's Health Statement (MHS) and 58.5% rated the Workplace Disability Report (WDR), as either important or very important with respect to making MECR recommendations.
- Although 83.1% reported keeping copies of previous MECRs, only 22% reported using tips and tricks to reduce the time required to write MECR clinical summaries.
- Only 26.6% considered the support provided by MECARS was either good or very good.

Conclusions:The low response rate itself suggests that the overall attitude of garrison MOs towards the MECR process may not be particularly positive. However, it was still possible to draw some valid conclusions, based on the premise that the responders most likely represent a 'best case' with respect to garrison health MO attitudes to the MECR process.

There is a need to significantly improve the quality and reach of MECR training.

There is considerable wasted effort expended on duplicating MECR information that is already available on previous MECRs.

Followup regarding the perceived MECARS support indicated frustration with the MECR process, rather than MECARS per se.

Responder's comments generally supported these conclusions. However, they also indicated that their actual level of understanding of their MECR role in practice is less than they perceive, while highlighting the need for sufficient time to conduct MECRs properly, and better IT support.

NINE MONTHS ON: EXPECTATION MANAGEMENT, EFFICIENCIES AND CHALLENGES FOR A FRONTLINE MEDICAL FACILITY DURING GARRISON HEALTH TRANSITION

SQNLDR MICHAEL CLEMENTS

SQNLDR Clements is the Health Centre Manager at Townsville Health Centre at RAAF Base Townsville. Since completing the Graduate Medical Scheme at University of Sydney with initial training at Royal Prince Alfred Hospital in Sydney and in Geraldton, WA, he was posted to RAAF Base Tindal and then to the United Kingdom for the Diploma in Aviation Medicine. After a short period as the Officer in Charge of the 1 EHS Detachment at Townsville he was posted to his current position in Joint Health Command. Current research interests include Occupational medicine and Medical administration.

In recent years the patient dependency at RAAF Base Townsville has been serviced by two separate medical facilities, one managed by the RAAF and one by the Army. Joint Health Command assumed control of the newly named Townsville Health Centre and merged the two facilities in January 2012 and early on there were several key efficiency gains. Administrative functions, airfield emergency response liability and the cross leveling of clinical and administrative staff allowed some of the peaks and troughs experienced by the individual facilities to be balanced.

The JHC transition is a substantial game changer across the board that provides Health Centre Managers further opportunities to shape and design the operations to suit the dependency. The experience at this facility revealed a combination of optimism and enthusiasm amongst the staff in designing the combined facility to face the new challenges and this enthusiasm has not yet waned. A key factor required to implement successful change has been the active engagement of the key stakeholders in understanding the changes and letting their own processes adapt.

Some of the ongoing concerns that remain include responding to the variable reliability of augmentees and maintaining a sense of vision, direction and leadership in the health centre staff who are heterogeneous group of contractors, APS staff, transient augmentees, non-augmentee 'supplementary' uniformed staff and JHC posted uniformed staff. Each of these staff groups have their own needs, expectations, desires and agenda's that need to be harmonised to meet Joint Health Command outcomes. With an attention to change management principles and adequate engagement of the stakeholders the restructure has provided an exciting opportunity to shape and develop an efficient, responsive and adaptable Garrison Health Service.

GP TRAINING FOR ADF REGISTRARS – IT CAN BE DONE, AND IT CAN BE FUN

DR ROSA CANALESE, MS FELICITY GEMMELL-SMITH

Dr Rosa Canalese - Director of Training, GP Synergy, MBBS, Dip Paed, FRACGP, MPH, Grad Cert University Teaching

Rosa has over eighteen years of experience and a long standing interest in medical education. Whilst she has recently been involved with undergraduate medical education heading the Medical Education Unit as Associate Dean for Teaching and Learning at The University of Notre Dame, Rosa has extensive experience with vocational general practice education and training in former senior medical educator roles with the RACGP training program and the Institute of General Practice Education. She has also been a Clinical Tutor at the Universities of New South Wales and Sydney, as well as involved in undergraduate and graduate entry curriculum development. Rosa holds a Masters of Public Health and completed her Graduate Certificate in University education and teaching in 2008.

Ms Felicity Gemmell-Smith - Special Education Manager and Process Development Officer

Felicity has been in involved in regional GP training since 2003, and prior to that, in nursing, administration and community

development. As part of her role with the former NEATS, she established and managed the Rural NSW GP Procedural Training Program in the New England region of NSW, which she continues to do as part of GP Synergy. In 2010 she was appointed as portfolio manager for GP Synergy's ADF registrars. She has a strong commitment to quality improvement and extensive experience in multi-disciplinary case management and project management, all of which have been extremely useful for her current roles with GP Synergy.

ADF medical personnel are able and strongly encouraged to access General Practice (GP) training through the Australian General Practice Training (AGPT) Program attached to one of 17 accredited Regional Training Providers (RTPs). To complete GP training, ADF registrars still have to fulfil all the requirements of civilian GP training whilst serving their country as full time members of the Australian Defence Force. Marrying such requirements with the conflicting demands of military vs civilian duties can cause frustration and conflict for trainees which can result in delayed training time and withdrawals from the AGPT program.

We at GP Synergy set about making GP Training easier for our ADF Registrars whilst still ensuring that they receive a comprehensive quality education program that fulfils the requirements for Fellowship of the Royal Australian College of General Practitioners (FRACGP). Through our efforts we have developed a unique training model for the delivery of the GP training components aimed at our ADF GP registrars completing their training in an average of less than 3.6 years.

GP Synergy has developed an innovative multi-disciplinary team based management approach for the ADF GP training which allows us to cope with the associated complex educational and administrative issues whilst still ensuring that our registrars continue to advance through their training despite having multiple deployments as required by their primary employer, the ADF.

Strategies we have developed to achieve this include:

- Nominated Medical Educator and Portfolio Manager for all ADF registrars within our RTP
- Demographically identified civilian practices best suited to the personality type and particular educational needs of ADF registrars that are lacking in their primary places of practice, eg geriatrics, paediatrics.
- Identified Clinical Teaching Visitors who are experienced with ADF registrars
- Set protocols and processes which allow our ADF registrars to have deployed time counted towards their FRACGP training.
- Development of auditing and tracking tools to allow us to accurately plot where these doctors are in relation their training goals.

Achieving satisfactory exposure to the work of every GP can be a challenge for this group, and doing it in a timely manner is particularly difficult, however, we believe that our approach is achieving adequate civilian clinical exposure whilst allowing these registrars to still service their primary employer and complete their GP training in a quality driven timely manner.

RELATIONSHIP BETWEEN ADF MEMBER'S HEALTH, PARTNER'S HEALTH, AND CHILD HEALTH OUTCOMES: FINDINGS FROM THE TIMOR-LESTE FAMILY STUDY ON AUSTRALIAN FAMILIES

ANDERSON, R., MCGUIRE, A., RUNGE, C., BREADHAUER, K., WALLER, M., KANESARAJAH, J., NASVELD, P., & DOBSON, A.

Dr Renée Anderson joined the Centre for *Military and Veterans' Health (CMVH) in January 2011 as a Research Fellow. She has a PhD in Clinical Psychology and is particularly interested in mental health and family issues within the Australian Defence and veteran community. Other interests include PTSD, Allostatic Load, and mild traumatic brain injury for ADF members and veterans. Her clinical practice in psychology involves children, adolescents, and families.*

Partners of military personnel may have elevated rates of psychiatric illness and may experience adverse physical health [1,2]. Post-traumatic stress disorder and trauma symptoms in serving members are negatively related to marital functioning and are associated with lower relationship satisfaction for both the serving member and their partner. Further, the literature suggests that child health is correlated with the health of parents; however, studies have found the most significant predictor of child psychosocial functioning is the health of the at-home parent [3]. In the context of Australian military deployment experiences (particularly to Timor-Leste), the current research explores the relationship between, a) ADF member's health and their partner's health, and b) ADF member, partner, and child health outcomes.

The Department of Veterans' Affairs funded a large cross-sectional quantitative study as part of the larger Family Study Program. Validated measures were used for physical (SF-12), mental (K10, SF12, PCL-C), alcohol misuse (AUDIT), family (FACES-IV), and child (SDQ) health, as well as relationship satisfaction. The sample consisted of 842 matched-partner participants, for which data was available for both the ADF member and their partner. There were 406 families analysed, for which data was available for the ADF member, their partner, and at least one child (N = 725 children).

Key findings from the Timor-Leste Family Study suggest that physical and psychological health of the ADF member and their partner were associated. The study also found an association between the ADF member's health and their child's health, and between the at-home parent and child's health. The conclusions and implications of these findings are addressed.

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RESERVIST DEPLOYMENT: PERCEPTIONS OF BENEFITS AND COSTS BY FAMILIES AND EMPLOYERS

E. JAMES KEHOE AND GEOFFREY J. ORME

LTCOL Kehoe came to the University of New South Wales (UNSW) as a lecturer after completing his PhD at the University of Iowa in 1976. He has conducted a productive program of basic and applied research in classical conditioning, learning, and memory. He currently is Professor and Director of Organisational Psychology at UNSW. He also serves as a senior research consultant to the Australian Army Psychology Corps and the ADF's Joint Health Command.

The views and concerns of the families and employers of reservists from the Australian Defence Force sent on overseas deployments have not been previously surveyed. Overseas studies have been limited in size and scope. We report on surveys of family members (n = 32) and employer representatives (n = 126) of Army reservists deployed on stability operations during the period 2006-2010. In response to open-ended questions, each group generated 60% more positive statements than negative statements about aspects of the deployments for the reservists and themselves. Family members, including parents, siblings, and partners, viewed the accomplishments and service of their reservists with considerable satisfaction. The negative aspects are largely related to separation from their loved one. Support services were not needed frequently, but were highly valued when required. For the employers, the positive aspects for both their enterprise and the individual reservist employee included increases in leadership, teamwork, skills, maturity, and confidence. The negative aspects almost entirely concerned the costs associated with the absence of a valuable employee. Both surveys revealed the importance of frequent, timely communication with the ADF, as well as with the individual reservist, throughout the deployment cycle. Both groups sought information concerning the effective management of the transition of their reservist from military service back to their civilian roles.

THE PERCEIVED IMPACT OF MILITARY LIFE ON CHILDREN

DR CAROL DAVY, MS MICHELLE LORIMER, PROF ALEXANDER MCFARLANE, PROF ANNETTE DOBSON

Dr Carol Davy is a Research Fellow at the University of Adelaide. She is currently an investigator on the Middles East Area of Operations Health Studies and senior researcher responsible for managing the Middle East Area of Operations Prospective Study. Dr Davy has had over 12 years experience in using both qualitative and quantitiative methods to better understand the health needs of particular populations. Prior to completing her PhD in 2009, Dr Davy worked closely with the Papua New Guinea Institute of Medical Research contributing to a variety of research programs focusing on treatment seeking behaviour and evaluation studies.

Background: Deployment is a challenging

time for both the individual going as well as any family members left behind. Children, have been shown to be particularly vulnerable during this period (Kelly, Hock et al. 2001). While there is a suggestion that some cope with these challenges (Lincoln, Swift et al. 2008), many studies have found that children of deploying personnel are deeply affected by the experience (Ryan-Wenger 2001; Huebner, Mancini et al. 2007; McFarlane 2009).

Aim: This presentation examines a preliminary analysis of pre deployment data collected for the Middle East Area of Operations (MEAO) Prospective Study, in order to identify whether participants perceive that their children have been impacted by their military career.

Method:The MEAO Prospective Study is one of three integrated Military Health Outcomes Program (MilHOP) studies. All Australian Defence Force (ADF) personnel deploying to the MEAO after June 2010, and returning to Australia by May 2012 have been invited to complete a self report questionnaire prior to deploying and then again approximately three months post after returning to Australia (n~1200). A subsample of these ADF members has also undertaken a physical test (n~400) and/or a neurocognitive assessment (n~180) at both time points.

Results: Findings suggest that the odds of perceiving a negative impact on children is 1.92 times greater for participants, who have previously deployed, compared to those who have no previous deployments. In addition, both the number of deployments, and the time spent away on deployment had an affect on the perceived negative impact of deployment on children.

Conclusion: While the primary aim of the MEAO Prospective Study is to identify changes in health outcomes between pre- and post-deployment, the pre deployment dataset is already proving to be a rich source of information on not only on the physical and mental health of deploying ADF members but also on their social health including possible impacts of deployment on significant relationships.

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UNIT COHESION, FAMILY AND SOCIAL SUPPORT IN RELATION TO PTSD IN VETERANS OF DEPLOYMENTS TO THE GULF WAR, IRAQ AND AFGHANISTAN: A SYSTEMATIC REVIEW

BREANNA WRIGHT, DR HELEN KELSALL, PROF MALCOLM SIM, PROF DAVID CLARKE, PROF MARK CREAMER

Breanna Wright has a Bachelor of Arts (Honours) in psychology from the University of Melbourne and is currently undertaking a Doctor of Philosophy in the Department of Epidemiology and Preventive Medicine at Monash University. Breanna's research is part of the current follow up health study of Australian Gulf War veterans and military comparison group who were first studied in 2000-2003.

Background: Support mechanisms, such as unit cohesion, family and social support, have been associated with a range of positive health and wellbeing outcomes, particularly in deployed troops. The importance of mental health outcomes cannot be understated and one of the most common psychological morbidities reported following deployment is Posttraumatic Stress Disorder (PTSD). However, the relationship between these support mechanisms and PTSD has not been the subject of a systematic review in the veteran community.

Methods: A computer aided search was conducted of Medline, EMBASE, PubMed, Central and PsychINFO, supplemented by searches for authors known to publish in the area and studies identified from the reference lists of included studies. Studies were eligible if participants were deployed personnel to the Gulf War, Iraq War or Afghanistan conflict, the outcome of focus was PTSD and at least one of the predictor variables of unit cohesion, family support or social support, was included. Any study design was eligible for inclusion. Two investigators systematically and independently examined all eligible studies. Quality assessment was completed via independent structured evaluation. Data extraction was performed, additional data were requested from authors where necessary and a meta-analysis was conducted.

Results: From an initial search result of 2864, 15 of these met the criteria for inclusion. Two studies utilised the same population and were counted as one study for a total of 14 included studies. The quality of the studies was generally of a high standard with acceptable response rates and use of validated instruments. A meta-analysis of unit cohesion involving six studies found that low unit cohesion was associated with PTSD caseness, with a standardised mean difference of -1.62 (-2.80, -0.45). Similarly, a meta-analysis of social support involving six studies found that low social support was associated with PTSD caseness, with a standardised mean difference of -2.40 (-3.42, -1.38). Three of the five studies on family support reported a significant relationship between low family support and PTSD caseness. Two longitudinal studies (one for social support and one for family support) indicated that longitudinally PTSD predicted low support but support did not predict later PTSD.

Conclusion: The systematic review and meta-analysis revealed that low unit cohesion, social and family support are associated with higher reporting of PTSD symptoms in returned war veterans. The review indicated that cross-sectional

studies, which formed the majority of the studies eligible for the review, may be inadequate to capture the complex nature of these relationships and more longitudinal research is required.

EVALUATION OF A REINTEGRATION PRESENTATION FOR RETURNING AUSTRALIAN ARMY RESERVISTS

GEOFFREY J. ORME, AND E. JAMES KEHOE

LTCOL Orme is an Army Reservist undertaking action research on the effect of overseas military deployments on Australian Army Reservists. This research commenced in 2002 and initially involved a two year longitudinal study of ninety Reservists deployed to East Timor in 2002-03. This research was subsequently applied in a similar fashion, using the same research tools, to three Company-size rotations of Army Reservists deployed to the Solomon Islands during 2006 and 2007 (RAMSI). Currently he is part of the Clinical Advisory Group at 3rd Health Support Battalion (Sydney, 1 HSC, Randwick Barracks, Sydney. He has led Psychological Support Teams (PST) on deployments to Bougainville, East Timor, Solomon Islands and the Middle East Area of Operations (MEAO), including Iraq.

Reservists are now widely recognised as having additional requirements for successful reintegration after an overseas deployment to their civilian lives, outside the proximal support readily available to regulars. Previous research has identified four domains in which readjustment must occur: (1) family and relationships (e.g., return from separation), (2) civilian work (e.g., career uncertainty, underemployment), (3) provider unit (e.g., reconnection, recommitment), and (4) emotional readjustment (e.g., changes in self, affective responses). Accordingly, a reservist-specific reintegration presentation was developed for delivery during the three-four days provided for decompression immediately following arrival back in Australia. This presentation was evaluated after delivery to a contingent of reservists (N = 125) who had deployed on OP ASTUTE as part of a Timor Leste Task Group (TLTG-3) for eight months from July 2011 to March 2012. The respondents (n = 82) rated the presentation as helpful, particularly, brief narratives about the experience of other reservists in their deployments to Timor Leste and the Solomon Islands. The respondents generally recommended that reservists returning from future deployments be given the presentation. The respondents also repeatedly asked that the presentation be given to their next-of-kin.

SICK AT SEA – RAN MEDEVAC

CMDR ROSS MILLS

Ross has fellowships in General Practice and Occupational and Environmental Medicine with a background in Aviation Medicine. Most recently he has worked in primarily musculoskeletal medicine and vocational rehabilitation until joining the PNF in 2009.

He is currently posted to Canberra (as a DIDO worker) as Director Navy Occupational and Environmental Health. These duties primarily involve him representing Navy's Occupational Medicine and Occupational Hygiene interests in various forums, inputting into Navy policy and providing specialist opinions on matters as they arise. Ross supplements this with regular clinical sessions and occasional medical support afloat.

In 2010 the RAN FFG, HMAS Newcastle undertook a four month deployment around the Pacific Ocean.

This presentation describes a case study of Renal Colic presenting at the worst possible time in the worst possible (geographic) location during this deployment. It is an illustration of the practice of isolated medicine without access to sophisticated monitoring equipment or treatment facilities, or extraction. This patient was transported by FFG for 7 days through the North Pacific Ocean from Hokkaido to the Aleutians, and on by air to Anchorage.

This case illustrates the difficulties faced in this scenario and emphasises the need for management to consider both worst-case medical scenarios and multiple non-medical issues. These non-medical issues included operational, communication, privacy, crew management and some of the theoretical issues relating to decision making in this context.

In the process of this Medevac records were set for the further north a RAN vessel has travelled (54˚ 30s N) and possibly the longest RAN medevac (1800 nm plus the air leg).

THE FORCES COMMAND SOLDIER RECOVERY SYSTEM

COL RICHARD MALLET

COL Richard Mallet is the Command Health Officer for Headquarters Force Command.

The development of a Solder Recovery System in Forces Command is designed to support a Commander or soldier. Additional support is often required where complex recovery needs following wounding, injury or illness dictate the need for a more focused and comprehensive approach. Evidence suggests supporting agencies do not fully understand how to enable supported commanders in assuring the health and wellbeing of soldiers as a function of command. Enhancing situational awareness for Commanders will be an important measure of effectiveness for the Solider Recovery System.

A Soldier Recovery Centre is the tool for Commanders in the Soldier Recovery System. Soldier Recovery Centres focus the delivery of specific and effective member-centric recovery regimes where a soldier with complex needs is identified as requiring a multi-disciplinary approach to recovery. Soldier Recovery Centres work to foster open and transparent communication between all agencies in enabling command, leadership and management functions for the chain of command. A Soldier Recovery Centre will be required to maintain a positive recovery environment where all activities are meaningful and soldiers are enabled to focus on their recovery mission. This dictates the requirement for the development and governance of individualised and/or group recovery programs that provide a structured approach to recovery. Demonstrating the efficacy of any intervention will be an important measure of effectiveness of the Solider Recovery System.

This paper will outline the plan for the Soldier Recovery System. It will define key criteria that continue to underpin system design. These include a system that can synchronise all agencies in supporting the recovery of wounded, injured and ill soldiers in order to ensure health and wellbeing as a function of command; a system that can govern all agencies who deliver support and services to wounded,

injured and ill soldiers in demonstrating how they are having a positive impact on recovery outcomes; and a system that can facilitate education and training opportunities for soldiers whose wounding, injury or illness does not allow them to be in their normal workplace in order to keep them engaged in a positive, military environment during all stages of recovery.

INTEGRAL LEG PROSTHESIS. (EARLY RESULTS OF THE OSSEOINTEGRATION GROUP OF AUSTRALIA ACCELERATED PROTOCOL).

AL MUDERIS M, BOSLEY B, KUMAR A, LAUX S.

Dr. Al Muderis is an orthopaedic surgeon and a clinical lecturer at Macquarie University and The Australian School Of Advanced Medicine, specialising in Hip, Knee and Trauma surgery for the Paediatric and Adult population.

He is also the Chairman of Osseointegration Group of Australia, providing those with above-the-knee amputations with a leg replacement using the integral leg prosthesis, which is designed to be as close to the human anatomy as possible.

He is a Fellow of the Australian Orthopaedic Association and the Royal Australasian College of Surgeons.

Introduction: Transcutaneous osseointegration is an innovative technology that has been successfully used for above knee amputees since the 1990s to overcome the problems that are associated with the standard socket prosthesis. Between 2009–2011, we operated on ten patients using this technology and we are presenting our early results.

Methods: Between 2009-2011 we performed ten procedures. This involves the insertion of a transcutaneous femoral intramedullary implant, whose most distal external aspect serves as a hard point for prosthesis attachment. There were six males and four females. Age range 23 – 58. All patients had transfemoral amputation, seven due to trauma and three due to infected total knee replacement. Preoperative assessments include medical, psychological and radiological examinations. Eight patients underwent standard two-stage procedure with a Six-week interval. Two patients had corrective surgeries prior the standard procedures. All patients were allowed early mobilization and full weight bearing two weeks after the second stage.

Results: Having studied published results of implant osseointegration in cementless total hip replacement as well as transcutaneous femoral intramedullary implant, we established the Osseointegration Group of Australia Accelerated Protocol.

Overall, there was a high level of patient satisfaction (90%). All patients except one returned to pre-amputation activities. Gait improved in all patients. All patients have retained the implant up to date. No infections to date. All patients regained osseoperception and reduced phantom pain. Skin irritation due to the old socket prosthesis has completely recovered in all patients who were using that type of prosthesis. Complications include stoma problems in one patient, one shortening of the external portion of the prosthesis due to knee joint height difference.

Discussion: The transcutaneous femoral prosthesis is an excellent alternative and potentially will be the first choice for many transfemoral amputees in the near future. We have demonstrated that early mobilization with our accelerated protocol enables patients to regain much of their freedom in mobility without compromising the mechanical stability of the osseointegration.

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INITIATIVES TO PROMOTE SUCCESSFUL REHABILITATION OUTCOMES AND VETERAN WELLNESS

MR SIMON GRAHAM

Simon is currently a policy and research officer seeking to improve DVA's rehabilitation program and is involved in developing a range of rehabilitation policy initiatives associated with the implementation of the Military Rehabilitation and Compensation Act 2004. These have included whole of person rehabilitation reporting documentation for use by DVA providers; a comprehensive biopsychosocial approach to rehabilitation needs assessment; trialing the use of a universal assessment project and assisting development of the 'Getting the Edge' project for early intervention of complex clients in DVA. Simon has managed DVA rehabilitation research projects with research bodies including the University of Sydney and the Australian Centre for Posttraumatic Mental Health.

The Military Rehabilitation and Compensation Act 2004 (MRCA) provides rehabilitation, treatment and compensation for injury disease and death from ADF service on or after 1 July 2004. MRCA replaces the Veterans' Entitlements Act 1986 and the Safety, Rehabilitation and Compensation Act 1988 although in some circumstances claims can still be made under these acts.

The MRCA covers permanent and reserve Australian Defence Force members, cadets, cadet officers, instructors and discharged members. The legislation mandates both the Department of Defence (for full time serving members) and the Department of Veterans' Affairs (current serving part time and discharged members) to play an integral role in the provision of rehabilitation services.

The MRCA focuses on the provision of rehabilitation services to assist members who suffer from a service-related injury or disease make as full a recovery as possible and return to their normal service duties or, after discharge, civilian work if they are able, and usual daily, family and community activities. MRCA rehabilitation provisions are consistent with the World Health Organisation's generic biopsychosocial model in management of people with injuries and provides a client centred platform from which the ADF, DVA and the service providers operate.

The Department of Veterans' Affairs delivers a wide range of rehabilitation activities for all client groups. Rehabilitation services incorporate medical, psychosocial and vocational rehabilitation activities

based on the persons assessed needs.

This presentation will identify and endorse DVA's whole of department approach to rehabilitation, illustrate a number of current initiatives designed to enhance the rehabilitation experience and promote positive outcomes for the person. These include an assessment process that provides greater access to rehabilitation, the measurement of individual goals achieved and the early identification of clients potentially at risk of achieving rehabilitation goals.

Information around the On Base Advisory Service (OBAS) and how that facility can promote wellness and links with DVA's rehabilitation services will also be provided to the conference.

THE MAGNIFICENT MEN RETURN!

PETER HURLY

WGDCR Peter Hurly is currently the Director of Air Force Medicine for the RNZAF. He has been a member of St John Ambulance since 1964 and was involved in ambulance work and training. He trained as a pharmacist in South Africa and studied medicine obtaining his MBChB in 1983. He worked in hospital medicine and Accident and Emergency. He was a member of the South African Military Medical Service and saw active service in South Africa. On moving to New Zealand, he joined the Royal New Zealand Army Medical Corps. He then moved to general practice in Palmerston North and took up a Reservist position with the RNZAF. He obtained a Diploma in Aviation Medicine and a certificate in Air Retrieval medicine, subsequently progressing to a Masters in Aviation medicne. He moved back into full time military medicine in 2002 and became the Director of Air Force Medicine in 2004. He is due to retire from the Regular Force at the end of this year.

Presentation surrounding the planning, logistics and support for 30 RNZAF veterans of Bomber Command, who returned to London for the unveiling of the Memorial to WW2 Bomber Command. All veterans were in their nineties and flew by RNZAF military aircraft to London and back to New Zealand for the commemoration. Back ground is given and description of the selection processs, itinerary planning, personnel support and, particularly relating to the medical planning, care and support provided during the mission.

A WOMAN AT WAR: THE LIFE AND TIMES OF DR PHOEBE CHAPPLE MM, AN AUSTRALIAN SURGEON ON THE WESTERN FRONT.

A/PROF SUSAN NEUHAUS, MS SHARON MASCALL-DARE

Susan Neuhaus CSC served with the RAAMC in both regular and reserve roles between 1987 and 2009. She has held a variety of clinical and command appointments and is a graduate of Command and Staff College (Res). Her operational deployments include Cambodia, Bougainville and Afghanistan. Susan works in fulltime surgical practice and is actively involved in Veteran's health issues, a member of the Veterans Health Advisory Council (SA) and Chair of the Repat Foundation. Awarded a CSC in 2009, Susan was a finalist for Australian of the Year 2012.

At the outbreak of World War I female doctors were not universally accepted. Both the Australian Army and initially the British War Office, saw no role for female medical officers and refused to entertain the idea of medical woman serving in military hospitals.

Quite undeterred however, and determined to prove their medical skills, 14 of the 129 female doctors in Australia at the time found their way to European theatres of war. These women served with the Royal Army Medical Corps (RAMC) and with a variety of "All Women Medical Units". They served in France, Belgium, Greece and the Balkans, including as military surgeons. The conditions of their service and their prospects of recognition were however, quite different to those of their male counterparts.

One of these remarkable female doctors was Dr Phoebe Chapple whose experiences reflect the social and historical circumstances of the time.

Born in Adelaide on March 31 1879, she entered the University of Adelaide aged just 16, graduating with bachelor's degrees in science, surgery and medicine. Frustrated with the Australian army's refusal to appoint women doctors, she travelled at her own expense to England in February 1917 to enlist in the RAMC where she was appointed as surgeon to Cambridge Military Hospital in Aldershot. Later, she was attached to Queen Mary's Army Auxiliary Corps (QMAAC) and sent to France. Chapple was accorded the honorary rank of Captain and was one of the first two women doctors sent to the Western Front, which she 'regarded as an honor [sic]' for Australia.

On 29 May 1918, Chapple was inspecting a Camp near Abbeville in France when it came under a German 'aerial bombing' attack. Her actions that night tending the wounded were recognised with the award of the Military Medal (MM). Chapple was the first woman doctor and the first Australian woman to receive such an honour "For gallantry and devotion to duty during an enemy [action]".

Chapple (now with the rank of Major) went on to serve as a doctor with the Women's Auxiliary Army Corps in Rouen and Le Havre. She returned to Adelaide in 1919 and resumed clinical practice. She died on March 24, 1967 and was cremated with full military honours.

This paper will discuss the wartime contribution of Dr Pheobe Chapple MM within the context of Australian society during WWI. Despite significant foreign awards from the governments of Britain, France, Serbia and Greece, the service of these women passed largely unnoticed within their own country. The reasons why the wartime service of Dr Chapple and the other women doctors serving in Europe and on the Western Front has been overlooked in the official history of WWI will be explored.

COURAGE, ENDURANCE AND CARE: AUSTRALIAN ARMY MOBILE HOSPITAL TEAMS IN THE KOKODA CAMPAIGN

DR BARRY E REED

Maxillofacial Surgeon John Hunter Hospital, Newcastle since 1991; Clinical Lecturer School Of Medicine, University of Newcastle; 3rd HSB; Colonel Kenny Award as best Army Reserve Dental Officer 2008 for achievements at AACAP and official visit Brooke Army Medical Center Texas regarding IED facial injuries; Award Australian Army History Research grant regarding the Kokoda Campaign; Maxillofacial Surgeon: Exercise Talisman Sabre 2009, 2011; AACAP 2011; Lecturer maxillofacial battle trauma for annual triservice course HMAS Cerberus since 2007; invited lecturer international meetings and author journal articles on maxillofacial ballistic trauma; Foundation Clinical Director Oral and Maxillofacial Surgery Unit John Hunter Hospital 1992 – 1995.

Many of the modern principles of combat health support were displayed in the critical 1942 Kokoda campaign of the Australian Army Field Ambulances and regimental aid post teams. The photographic collection of the Australian War Memorial provides a unique view of the essential and difficult

work of these Field Ambulances and RAP teams and illustrate this presentation. The Field Ambulances functioned in similar fashion to a current day ADF role two (enhanced) deployable hospital providing initial wound surgery close to the battlefield while being mobile and capable of redeploying quickly to minimise evacuation times over the mountainous jungle terrain as the campaign progressed. Events of the campaign of the Field Ambulances are described in relation to current day principles of combat health support. It appears there was a lack of foresight at the time of the many great obstacles in preparation for provision of effective medical care in a combined mountain and jungle tropical campaign. These preparation shortcomings led to the need for effective improvisations, much adaptability, flexibility and considerable ingenuity by the medical soldiers of the three principal Field Ambulances involved which provided life saving solutions to the unique casualty care challenges of the Kokoda campaign and are described in this presentation. The solutions provided by these Field Ambulance soldiers and the Brigade Headquarters staff to the challenges posed by the Kokoda Campaign included: "leapfrog" Field Ambulance movements to enable rapid casualty care; Holding non-walking casualties long term in wards; Self evacuation of the walking wounded; Aerial supply drops of urgently needed essential medical supplies; Pioneering the use of aerial casualty evacuation and the related vital role of possession of airstrips; Field training and multitasking personnel for staff shortages in key clinical roles such as providing general anaesthesia and aerial evacuation organisation; Improvisation of hospital equipment from local materials such as saplings for operating theatre tables and splints; location of medical liaison officers at Brigade Headquarters which enabled more efficient casualty care; and very importantly, the vital role of the indigenous carriers, the Fuzzy Wuzzy Angels, in resupply and casualty evacuation. Excerpts from the wartime memoirs of members of these Field Ambulances and RAP teams describing their work, their difficulties and solutions are related in this presentation. In conclusion, many of the modern principles of combat health support were displayed in the Kokoda campaign of the Field Ambulances including: mobility, proximity, flexibility, responsiveness, simplicity, continuity of care, and economy of effort. Of most importance, the timeless military medicine qualities of courage, endurance and care were magnificently exemplified by the members of these Field Ambulances and RAP teams in their Kokoda campaign.

TWO DIFFERENT SHADOWS: CARING FOR AUSTRALIAN AND AMERICAN EX-POWS AFTER WORLD WAR II

DR ROSALIND HEARDER

Awarded a PhD in History at the University of Melbourne, Rosalind's study of Australian medical officers' work in Japanese captivity during the Second World War was published in 2009 by Allen and Unwin. She subsequently undertook a post-doctoral Fulbright fellowship in the USA, including teaching a university course on the history of military medicine.

Rosalind has held positions in academia and government, including two years with the Official History of Australian

Peacekeeping project, focusing on medical aspects such as Gulf War Syndrome and PTSD. She currently works in the Victorian Parliament, and is also writing a book based on the diaries of a British police officer in Japanese captivity.

Thousands of Australian and American troops spent years as prisoners of the Japanese during the Second World War. Both lost over one-third of their forces through brutal starvation, disease and physical abuse. Approximately 14,000 Australian and 16,000 American surviving POWs returned home. Though allies during the war, each country would show marked difference in how survivors were treated and how their experience is remembered.

In Australia, the Pacific War was close to home and the catastrophic story of Japanese captivity became a dominant part of the larger Australian war experience. Sir Edward 'Weary' Dunlop, one of the 106 Australian medical officers in Japanese captivity, is not only the most famous POW from the Second World War, but arguably remains one of the best-known Australians from all twentieth century conflicts. In contrast, in the United States today, many people have no idea that Japan captured any of their troops during the Pacific War, and their stories receive comparatively little attention.

While there are many reasons for this, this paper will focus on three areas: how the two groups' experiences were shaped in the immediate post-war period; the very different Australian and American Vietnam War experiences and the impact of the rise of Post-Traumatic Stress Disorder diagnoses on commemoration of the World War II POW story; and some of the consequences of failing to learn important medical lessons from Japanese captivity.

A RESEARCH HIGHER DEGREE IN THE MILITARY AND VETERANS' CONTEXT – WHY,HOW, WHEN, WHERE AND SO WHAT

PANEL: PROF DENNIS SHANKS

PROF MICHAEL READE

DR ANNABEL MCGUIRE

DR PETER NASVELD

While CMVH has promoted professional development through a course work masters program (such as the Masters of Public Health (Defence)), Research Higher Degree (RHD) options may not be as extensively known. A Doctor of Philosophy or Masters of Philosophy fosters the development of independent research skills including the capacity to formulate a significant problem, to develop mastery of appropriate conceptual and methodological skills, and the ability to relate the research topic to a broader framework of knowledge in a relevant disciplinary area.

This session is designed to give conference delegates an increased understanding of the pathways to a RHD, the challenges involved and the opportunities it opens up. It will also further develop an awareness the skill sets a RHD can provide and how individuals with such training and experience can contribute to health in a Military and Veterans' context.

A range of prominent researchers and/ or clinicians in the field of military and veterans' health who have undertaken a research higher degree will form a panel for this session. They will address questions on why they undertook study towards a RHD, the various pathways they took and their subsequent career paths. They will also talk candidly about the challenges and the rewards of this venture.

By engaging with the members of the panel and their stories, conference delegates will be given a wide range views and concrete case studies of various scenarios for undertaking a RHD.

JOINT HEALTH COMMAND UPDATE

PANEL: RADM ROBYN WALKER

MR DAVID MORTON

CDRE LIZ RUSHBROOK

AIRCDRE TRACY SMART

Joint Health Command has been undergoing a period of unprecedented and historic transformational change over the past few years. Defence health services are being improved and transformed through a number of Joint Health Command initiatives supported by Defence Senior Leadership. These initiatives are being implemented to ensure that best practice healthcare is provided to ADF personnel while ensuring that the ADF healthcare budget is responsibly and economically managed without impacting on the healthcare entitlements of ADF personnel. The changes being made are innovative, are in line with the National health care reform agenda, and involve all aspects of health care, in both the garrison and operational arenas. Innovations include:

- A new Health Services contract with Medibank Health Solutions to support health care delivery within Australia, including:
  - on base contracted health personnel to work within Joint Health Command managed facilities;
  - management of access to a broad range of off base services including specialist and tertiary care;
  - a 24 hour health hotline;
  - imaging and radiology; and
  - pathology services
- The implementation of a electronic health records system
- Consolidation and refurbishment of health facilities
- Development of a comprehensive clinical governance framework
- Implementation of a number of mental health strategies, including improved prevention and management programs
- Implementation of specialised rehabilitation management programs such as the Australian Defence Force Rehabilitation Program (ADFRP), Simpson Assist Program (SAP) and Support for Wounded, Injured or Ill Program (SWIIP)
- Development of strategic alliances
- Enhancement of operational health through the development of a full time Military Surgical Team and ADF registrar program
- Continued development of health capability through projects such as JP2060.

In this panel, the JHC Executive will provide an update of many of these initiatives and present a vision for the Defence Health Service of the future.

NOTES


POSTER
PRESENTATIONS

POSTER NO. P1

INTERNET-BASED STRATEGIES FOR THE PREVENTION AND MANAGEMENT OF OSTEOARTHRITIS

DR EVA PIETRZAK, MS CRISTINA COTEA, LTCDR **STEVE G. PULLMAN**

Steve Pullman is the e-Health Coordination Officer at the Centre for Military and Veterans' Health and has had over 6 years experience in Telemedicine and Health IT. Steve joined CMVH following a USN/RAN Personnel Exchange Program posting where he served as Head, Navy Telemedicine Business Office and Acting Department Head, Operational Medicine and Joint Support Department from 2006 – 2008. He is also a Lieutenant Commander in the Royal Australian Navy with 33 years of service.

Background: Osteoarthritis (OA) is one of the most common musculoskeletal diseases in the developed world and the most frequently claimed disability under the VEA (Veterans' Entitlements Act 1986), constituting 16.3% of all approved disabilities in 2009-2010. Perceived shortages in access to healthcare services and growing pervasiveness of the Internet increase the number of osteoarthritis patients turning to the Internet for information and strategies to prevent and manage OA.

Aim: To review published literature investigating the role of the Internet in the prevention and management of osteoarthritis.

Methods: An electronic search of the MEDLINE and SCOPUS databases was performed using relevant MESH terms and keywords for the disease and the mode of communication. Only peer reviewed journal articles that investigated telehealth interventions for osteoarthritis and reported health outcomes were included.

Results: Six studies were included. Three investigated patients with diagnosed OA and three patients before or after OA-related knee or hip surgery. The interventions included online self-management and education programs, preventive exercise therapy, pre-operative home safety assessments and post-operative rehabilitation. Outcomes included changes in health and functional status, satisfaction with OA care and agreement with in-person intervention. Intervention controls were usual care, no intervention and before-after comparison.

Web-based OA Self-Management tools: In patients with OA, an Internet-based Arthritis Self-Management Program modestly but significantly improved health status indicators such as self-efficacy, pain, self-reported global health, health distress and activity limitation compared with usual care (strong evidence). Personalised, interactive guidelines on managing arthritis have met with high acceptance and high user satisfaction, and had no negative effect on patients' satisfaction with their osteoarthritis care (weak evidence).

Preventive physiotherapy exercise via videoconferencing: Three-month physiotherapy exercise delivered by videoconferencing for patients with OA-related knee pain significantly improved health measures including pain, stiffness, and physical function compared to the initial health status (weak evidence).

Pre-operative home safety assessments via videoconferencing: Patients undergoing

knee and hip replacement require appropriate home modification. Before surgery, occupational therapists assess patient safety, functional performance and the suitability of the patient's home environment.

Home safety assessments carried out via videoconferencing were as accurate as those performed in person (moderate evidence).

Post-operative care - rehabilitation via videoconferencing: In patients with total knee replacement, tele-rehabilitation performed by physical therapist via videoconferencing and in-person resulted in similar health measure improvements (strong evidence).

Conclusion: The Internet may be successfully used as a medium of providing prevention, self-management and rehabilitation interventions in osteoarthritis.

POSTER NO. P2

LESSONS LEARNT FOR SUCCESSFUL RECRUITMENT AND RETENTION OF ADF PERSONNEL INVOLVED IN THE MILITARY HEALTH OUTCOMES PROGRAM (MILHOP)

LCDR STEVE PULLMAN RAN, CRISTINA COTEA

Steve Pullman is the e-Health Coordination Officer at the Centre for Military and Veterans Health and has had over 6 years experience in Telemedicine and Health IT. Steve joined CMVH following a USN/RAN Personnel Exchange Program posting where he served as Head, Navy Telemedicine Business Office and Acting Department Head, Operational Medicine and Joint Support Department from 2006 – 2008. He is also a Lieutenant Commander in the Royal Australian Navy with 33 years of service.

Background: Australian Defence Force (ADF) personnel are part of a highly organised and disciplined force, which is expected to facilitate the recruitment process for large research studies involving this population group. Yet, the recruitment and data collection process for the Military Health Outcomes Program (MilHOP) studies illustrates that a completely voluntary process with strict ethics guidelines as set by the Australian Defence Human Research Ethics Committee (ADHREC) introduces challenges that need to be considered when undertaking research studies involving ADF personnel.

Aim: To detail the means used for this unparalleled data collection process across the ADF, the challenges encountered and share useful lessons learnt and recommendations for future studies.

Methods: The information presented in the Poster has been gathered by first-hand experience as seen by the Defence Liaison Officers (DLOs) and the research teams involved in the MilHOP study.

Results: One of the most important aspects for recruiting participants was sharing information about enrolment in the study and its importance for addressing the health and wellbeing needs of ADF personnel.

Study participants were invited to complete an online questionnaire or its hard copy version. Phone follow up was conducted to reach those that had not responded. Other opportunities were taken such as during the ADF wide Safety Days, by delivering hard copies to ADF establishments and

units and made available for completion by individuals to be posted back to CMVH. The most effective means appeared to be via email of the questionnaire.

Barriers to data collection from ADF personnel included: voluntary participation, recently discharged, are away on course, posted to another unit on return, not available, in hospital or sick, conflicting unit and personal priorities, unit training requirements, deceased, simply do not show up, units having trouble locating personnel, personnel not aware of the study or timings and lack of access to the Defence Restricted Network.

Various incentives were used such as the distribution of MilHOP pens, inclusion of bags of jellybeans in the questionnaire envelopes and distribution of chocolate bars at the physical and neurocognitive testing. The role of the DLOs was to primarily facilitate and coordinate all aspects of the data collection process, where face to face involvement was required by the research staff. This included the DLOs arranging access onto bases, units and ships and the facilities to conduct the completion of questionnaires for hundreds of personnel at once at times and to complete physical and neurocognitive testing, which included setting up this equipment at the live firing range in Townsville.

Conclusion: Recruitment and retention of ADF personnel in large studies such as MilHOP can be a challenging process in which awareness of successful recruitment strategies is key in ensuring the validity of the study. The most important lessons learnt from the MilHOP recruitment process are that to achieve the greatest success it is essential to have the support and commitment of Command, followed by face to face contact between the DLO and the chain of command, then including the research staff and ADF personnel with finally individual phone follow up when appropriate.

POSTER NO. P3

WARTIME NUTRITION - CHALLENGES IN QUEENSLAND IN WORLD WAR TWO

WING COMMANDER DEREK MOORE (RAAFSR)

Wing Commander Moore has been a member of the RAAF Specialist Reserve for over 30 years. His roles have included nutrition training at AVMED, No. 3 RAAF Hospital, No. 6 RAAF Hospital, the RAAF School of Catering Training at RAAF Wagga and subsequently the ADF School of Catering at HMAS Cerberus.

He has also consulted to the ADF Catering Group in Melbourne and then the Defence Catering Policy Cell in Canberra.

Currently, he is posted to DGHR – AF.

War in the Pacific presented additional challenges to farmers and food processors in Queensland. The demand for food for Australian Service Personnel, United States Forces, the civilian population and exports to the United Kingdom presented formidable production objectives in an environment where there were significant pressures on fuel, fertilizers, labour, transport and machinery availability, on both the farms and in food processing facilities.

This poster will examine Queensland's wartime food production. It will also consider the role of Service dietitians in the

large military hospitals in this State, where they contributed to both the acute care of ill and injured Service Personnel , plus the nutritional rehabilitation of large numbers of malnourished ex – prisoners of war.

POSTER NO. P4

A SYSTEM OF CLASSIFICATION OF PENETRATING CRANIAL INJURY

DR MARTIN CHRISTIE, M.B.CH.B., DIP. OBS., F.R.A.C.S.

Martin trained in medicine initially in Rhodesia, and served as a Captain in the Rhodesian Army Medical Corps during his National Service during the early phases of enemy incursions. He then moved to Papua New Guinea, where he worked as a General Medical Officer for two years. This was followed firstly, by training in General Surgery and subsequently Neurosurgery, both in Dunedin, New Zealand. His later career included periods in the Republic of Kiribati, in Cambridge, UK, and Auckland, NZ. This was succeeded by eight years in Saudi Arabia, spanning both Gulf Wars, with exposure to casualties, as well as providing neurosurgical care for patients from the Bosnian conflict, and patients transferred to Saudi Arabia from the civil war in Yemen. He moved to Coventry, UK, working as a consultant neurosurgeon in the NHS. He has served four tours of duty in Afghanistan as neurosurgeon to the NATO coalition, after retiring from the NHS. More recently he has instructed military doctors in the new state of Southern Sudan. Recently retired, he lives in Sydney.

For trauma surgeons there are advantages in having systems of classification of the various injuries that are encountered in the conflict setting. Surgeons are by nature practical, and the existence of such systems allows for transmission of information in such a manner that it is easily understood by those further down the chain. It also allows surgeons to bunch similar injuries together so that treatment methods and long-term outcomes can be compared.

Thus far the complexity of brain injuries has perhaps discouraged the development of a simple method of classification which can be applied in the field. This creates difficulties, especially for non-medical staff, in the allocation of resources for treatment and onward disposal of wounded patients.

The author presents a system of classification of penetrating injuries of the head, based on his own experience during four tours of duty as neurosurgeon in recent hostilities in Afghanistan.

The system relies on the availability of CT scanning facilities near to the point of injury, but this has already become an integral part of the assessment of battlefield injuries. Adoption of the system is commended to those dealing with such injuries, in particular triage officers, radiologists and especially neurosurgeons.

POSTER NO.P5

THE LIFETIME PREVALENCE OF MENTAL HEALTH DISORDERS IN THE AUSTRALIAN DEFENCE FORCE IN TEMPORAL RELATION TO COMMENCEMENT OF ADF SERVICE AND FIRST DEPLOYMENT: RESULTS FROM THE 2010 ADF MENTAL HEALTH PREVALENCE AND WELLBEING DATASET (1 OF 5)

VAN HOOFF M, MCFARLANE A, HODSON S, BENASSI H, VERHAGEN A, STEELE, N

Dr Van Hooff is currently a research fellow at the Centre for Traumatic Stress Studies. She qualified from her honours degree in Psychology in 1998 and in 2011 was awarded the degree of Doctor of Philosophy in Medicine for her research into the longitudinal outcomes of childhood disaster exposure. Over the last 10 years she has conducted a number of large-scale longitudinal studies of traumatized populations. Miranda is an investigator on the2010 Mental Health Prevalence and Wellbeing Study.

As with all international military populations, there is an extensive screening process at the point of entry to the ADF. Specifically, most but not all individuals who have suffered a psychiatric disorder are excluded. Evidence of individuals joining military service with pre-existing conditions, however, does exist. This presentation answers a fundamentally important question for the ADF: how many individuals enter military service having previously suffered from a psychiatric disorder and what risk this places on the ADF member in terms of the accumulation of further symptoms or disorder. The 2010 ADF Mental Health Prevalence and Wellbeing Study provided a snapshot of ICD-10 mental health disorder in the ADF over a prescribed 12-month period. This study extends these findings be examining the relationship between disorder occurring prior to joining military service and the relative risk of later disorder in an environment where there is known exposures that increase the risk of psychiatric disorder is particularly important. The lifetime prevalence of ICD-10 disorder in the ADF will be provided together with a discussion of patterns of onset of each disorder, within the framework of enlistment and first operational deployment.

JOURNAL OF MILITARY AND VETERANS' HEALTH

CALL TO AUTHORS

The Journal of Military and Veterans'Health is a peer-reviewed quarterly publication published by the Australian Military Medicine Association. Its Editorial has identified the following themes for the first half of the journal's 2013 editions. They are:

Edition	Theme	Publication Date	Closure of article submission date
Vol 21 No. 1	Infectious Disease with Military Reference	16 January 2013	21 November 2012
Vol 21 No. 2	Nuclear, Biological and Chemical Warfare	16 April 2013	20 February 2013

Categories for the above include:

Original Research, Short Communication, Review Articles, Reprinted Articles, Case Studies, Abstracts from the Literature, Biographies, History, Book Reviews, Commentary and View from the Front.

The JMVH would be delighted to receive articles for consideration on these themes. Please note that although these are the some of the themes for 2013, we encourage authors to continue to submit articles on a range of topics on military and veterans' health.

To submit please visit the JMVH website www.jmvh.org. You can also find the Instructions to authors here.

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