

JMVH

Volume 18 Number 1

January 2010

Journal of Military and Veterans' Health



- Abstracts from the 2009 AMMA Conference
- Abstracts from the Inaugural South Australian Defence and Veterans Health Research Paper Day

The Journal of the Australian Military Medicine Association





INJURED WARRIOR

2010 AMMA/JOINT HEALTH COMMAND SYMPOSIUM



29 - 31 OCTOBER 2010
NATIONAL CONVENTION CENTRE, CANBERRA ACT
www.amma.asn.au

Table of Contents

Editorial

Inside this edition	3
President's Message	3

2009 AMMA/CCMT Joint Conference

Conference Report	4
AMMA Conference Abstracts	5
Keynote Speaker	5
Deployment and Mental Health	5
Ability and Capability.....	7
Veterans' Health I	8
Army Medical Training.....	11
ADF Deployable Healthcare	12
Anaesthesia in Remote and Austere Environments	13
Mental Health Developments	13
Trauma	15
Clinical Miscellany	17
Veterans Health III	18
Lessons.....	20
Afghanistan the latest experience - where to from here?.....	23

Inaugural South Australian Defence and Veterans Health Research Paper Day

Overview.....	25
Abstracts.....	26

Australian Military Medicine Association News

2009 Queens Birthday Honours.....	36
-----------------------------------	----

Obituary

Eulogy for Major Raffaele Scicchitano	37
---	----

Correction

JMVH Vol.17 No.4 - October 2009	38
---------------------------------------	----

Instructions to Authors	39
-------------------------------	----

Copyright Policy	47
------------------------	----

Cover Photo by: Leading Aircraftman Guy Young Simulating a wounded soldier, Private Mathew Johnson is carried by members of Battle Group Timor Leste 3 to a waiting ambulance during a medical evacuation exercise in Dili, Timor Leste.
TITLE: 7RAR patrol in central Dili

Journal of Military and Veterans' Health

EDITORIAL BOARD

Dr Andrew Robertson (Editor in Chief)
Associate Professor Scott Kitchener (Managing Editor)
Dr Graeme Cannell
Dr Keith Horsley
Dr Peter Leggat
Professor Malcolm Sim
Dr Bob Stacy
Dr Darryl Tong

Australian Military Medicine Association

PATRON

MAJOR GENERAL Paul Alexander
Commander Joint Health and Surgeon General
Australian Defence Force

COUNCIL

President	Dr Greg Mahoney
Vice President	Dr Nader Abou-Seif
Secretary	Dr Janet Scott
Treasurer	Dr Neil Westphalen
Council Members	Mr Kerry Clifford
	Dr Stephanie Hodson
	Dr Andrew Robertson
	Mr Geoff Robinson
Public Officer	Ms Paula Leishman

STATEMENT OF OBJECTIVES

The Australian Military Association is an independent, professional scientific organisation of health professions with the objectives of:

- Promoting the study of military medicine
- Bringing together those with an interest in military medicine
- Disseminating knowledge of military medicine
- Publishing and distributing a journal in military medicine
- Promoting research in military medicine

Membership of the Association is open to doctors, dentists, nurses, pharmacists, paramedics and anyone with a professional interest in any of the disciplines of military medicine. The Association is totally independent of the Australian Defence Force.

Inside this edition

This edition of the Journal is given over to the publication of the abstracts from a highly successful Association Annual Scientific Conference held on the Gold Coast at the end of October 2009. Around 50 papers were read from a wide range of international and local speakers ranging across all the health professions.

A full conference report precedes the abstracts, highlighting the success and benefits to members and the disciplines of health and medicine in the military and veterans' contexts.

In addition, this Edition contains abstracts from the Inaugural South Australian Defence and Veterans' Health Research Paper Day, which was held on 18 July 2009 in Daw Park, South Australia. An overview of the day is also included.

Dr Andy Robertson
Editor in Chief

President's message

Greetings and welcome to the first Journal of Military and Veterans' Health for 2010. The New Year brings in a few changes in the Executive of AMMA, as the astute among you will realise that the Association's president for the past seven years, Russ Schedlich, has resigned. It is perhaps appropriate at this point to reflect on his legacy. Russ has seen a growth in our conference which has increased in size and breadth over the nine years of his time as a Council Member. He has been president during our two Joint Health Symposia and has committed us to a third in 2010. 2009 has also seen us combine with Controversies in Civil and Military Trauma, enhancing the conference for both groups. Russ has led Council through a review of AMMA's corporate governance and enhanced the way we proceed with our day to day management. The major part of this is an updating and review of our constitution which will be addressed through an Extraordinary General Meeting shortly. By far his greatest legacy has been to have the vision to start the process to transform our Journal into a world class peer reviewed publication with an international editorial advisory board. He leaves the journal in a healthy state as is the association. Indeed the Association owes much to Russ and we wish him the best in the future. Further to Russ' resignation, this left a vacancy in the executive which has been kindly filled by Stephanie Hodson, and Andrew Robertson has taken over the reins of Editor of the Journal.

In late October 2009, another successful AMMA conference was held at the Gold Coast Convention and Exhibition Centre. There were over 300 delegates who attended the scientific sessions in a broad range of subjects on trauma, burns, military nursing,

operational, mental and allied health. A special thankyou goes to our plenary speakers Dr Fiona Wood and Prof Andre van Zundert and to Michael Groom's inspirational presentation during the conference dinner. This year AMMA in conjunction with Joint Health Command will host the Defence Health Symposium in Canberra from the 29-31 October which promises to be an event not to be missed by anyone remotely interested in military medicine. The symposium program is coming together and some innovations in our programming are anticipated with discipline streaming of presentations for all sections of the health community.

Our Journal remains a fundamental function of the Association and the Council is committed to its publication and improvement. We would encourage anyone in the military community to submit an article for publication whether it is a randomised control trial or a case report; from medical officers to medical assistants. The journal is willing to assist, mentor, and encourage first time and junior authors, as it has an extensive editorial and consultative board.

Finally, 2010 finds the Association with a strong and stable membership base which has enabled it to function effectively through the global economic downturn. However, we should be under no illusion that this position is immutable. Continued stability is dependent on continued support of its members and therefore I would encourage all members and potential members to participate in the Association.

Dr Greg Mahoney
President

Conference Report



Grey Mahoney congratulates John Pead, Project Leader of the 2009 Weary Dunlop Award Winner 'Transition Mental Health & Family Collaborative (Townsville)'.

Left-Right Dr Greg Mahoney (AMMA President), Chris Clarke (DVA Contract Manager), Assoc Prof John Pead (Project Leader), Dr Nader Abou-seif (AMMA Vice President), Absent: Dr Darryl Wade (Project Manager)

18th Annual AMMA/CCMT Joint Conference –
Gold Coast, Queensland,
30 October – 1 November 2009

For 2009, the annual AMMA Conference was joined by the Controversies in Civilian and Military Trauma Group (CCMT). The conference was held at the Gold Coast Convention and Exhibition Centre (GCCEC) on the Gold Coast in Queensland from the 30 October to the 1 November. It was a two and half day conference which included plenary and breakout sessions. A Workshop/ Site Visit to the RFDS Base at Brisbane Airport was held on Thursday 29 October as part of the CCMT program.

The conference attracted 275 delegates, slightly down from previous meetings; this was largely due to the international natural disasters occurring in the month leading up to the conference and the consequent deployment of personnel overseas for relief efforts.

The Conference was opened by Major General Paul Alexander, Commander Joint Health and Surgeon General Australian Defence Force.

The technical program included an opening keynote address by Dr Fiona Wood which was well received by delegates, with 92% of respondents to the post conference survey saying she was excellent. Some delegate comments appear below:

"Fantastic speaker who provided so much information and enthusiasm which was a great way to start the conference."

"A quality presentation from an eminent person"

"The presentation by Dr Woods was an excellent start to the conference and it set the scene for the following days. She is truly an inspiration and we can all learn from her experiences."

The remainder of the program consisted of concurrent sessions and symposia on a wide range of topics including, Mental Health, Veterans Health, Ability and Capability and Army Medical Training. The program consisted of three streams, 2 weighted towards AMMA and the third to CCMT.

The CCMT Workshop attracted 18 delegates who were shown through the various assets at the RFDS base in Brisbane. The static display of assets included QAS Vehicles and Stretchers, ASLAV Ambulance, Military Ambulance Vehicles, Queensland Fire Services Rescue Vehicles, a Simulator from C17 (RAAF), a Stryker Rescue Stretcher and an RFDS Fixed wing aircraft.

An enjoyable social program and networking opportunities enhanced the event with the Welcome Reception being held on Friday 30 October in the Trade Exhibition Area. This function was a good opportunity for delegates to catch up with colleagues and to visit the exhibitors' booths. Drinks and canapés were provided.

The conference dinner was held on Saturday 31 October, at the GCCEC overlooking the Gold Coast Hinterland. Delegates enjoyed a three course meal with beverages. The entertainment for the evening was guest speaker Michael Groom who was very well received by the guests.

"Michael Groom was fantastic. I was at a table of psychologists and he gave them much material for discussion afterwards. We enjoyed his talk very much and the photo illustrations enhanced it enormously. Thanks for organising him!"

"What an inspiration Michael Groom is but I am still left wondering WHY???"

The Weary Dunlop Award was won by Transition Mental Health & Family Collaborative (Townsville) for their paper reporting on behalf of teams seeking to improve for all defence force members at risk of discharge for medical reasons, their mental health and family practices throughout 2009..

Once again this conference proved to be a huge success, with a large number of high-quality papers presented in an environment that supported the open exchange of views and the development and re-engagement of professional connections among the delegates.

As always, the Association is grateful to its sponsors for their generous support, allowing registration fees to be kept down to a reasonable level.

This year's conference will be held together with the Joint Health Command at the National Convention Centre in Canberra from the 29 – 31 October 2010, and no doubt will be every bit as good as the 2009 conference.

Nader Abou-seif
Convenor

2009 AMMA Conference Abstracts

Keynote Speaker

A decade of disaster planning for burn injuries

Fiona Wood

Every intervention from the time of injury influences the scar worn for life. In a disaster situation the balance between best for most without compromising care and therefore outcome is the greatest challenge. To do the best for most, planning and preparedness are vital steps facilitating the response with the recovery being an essential time of reflection and learning to drive improved responses in the future.

Planning for a major burn disaster began in 1999 with the awareness of the need to work together as resources could be overwhelmed. There are specialist burns centres in each state providing the routine services for the community. There is evidence that burn injuries

are best treated in these multidisciplinary facilities, but what about mass casualties?

The history of the development of the AUSBURN plan will be described, illustrated by the Western Australian responses to 2 major disasters. Highlighting the need for education, bringing together the patients needs, the clinical experience and the resources available, to ensure care at every intervention from the time of injury is the best it can be.

Contact author: *Dr. Fiona Wood*

Deployment & Mental Health

What are the mental health outcomes of deployment? Disagreement amongst our allies

Stephanie Hodson and Alexander McFarlane

The post deployment studies in the United Kingdom have generally suggested that there are lower rates of post-traumatic stress disorder in contrast to the United States in troops returning from Iraq. These differences raise important questions about aetiology and the measurement of morbidity that is critical to the planning of services. This presentation will discuss the origins for the differences between two important bodies of epidemiological data in an attempt to assist in how emerging findings from the deployment health surveillance studies of Australian deployments are best interpreted.

There needs to be a careful consideration of the findings so as to not overemphasise the rates of morbidity whilst at the same time ensuring that the morbidity identified is not minimised. The optimal provision of treatment for returning veterans and the methods of dealing with the barriers to care which can produce substantial delays to treatment, are important factors to consider in this context.

The historical evidence would suggest that there tends to be a liaison between combat exposure and the symptoms of distress becoming manifest. The underlying biological process as well as the social factors that contribute to the late emergence of post-traumatic morbidity will be described.

The current conflicts and the prevalence of IED's have led to a refocusing of concern on the role of mild traumatic brain injury as a major cause of morbidity following deployment. However, there is a significant overlap between the symptoms of MTBI and PTSD. Evidence derived from civilian populations will be presented to assist in resolving this conundrum.

Corresponding author: *LTCOL Stephanie Hodson, Directorate of Mental Health, CP2-7-093, Campbell Park Offices, 2600 Email: stephanie.hodson@defence.gov.au*

A descriptive study of mental health morbidity in the RAP of a high readiness infantry battalion

John Shephard, Kane Lavender and John Sanderson

The Dunt Review of mental health care in the ADF highlighted the important role of primary health services and recommended that Medical Officers assume a central role in case management.

Aim: To investigate mental health case load in the primary care setting and to identify implications for both force sustainability and health service delivery.

Methods: Using clinical practice software (MIMI), we identified all mental health cases managed through the RAP of a high readiness Infantry Battalion over a twelve month period. Individual case notes were examined, and key data extracted including diagnosis, deployment history, principle precipitating stressors, outcome and presence of significant suicidality.

Results: We identified 69 cases requiring significant co-ordinated management through the RAP over the 12 month period under report. Adjustment Disorder was the most common diagnosis (49.8%), closely followed by Major Depressive Disorder (43.5%). PTSD accounted for 4.4% of cases. Approximately three out of every four cases (76.8%) involved members with fewer than two operational deployments. Workplace stress was the most common precipitating factor (28.9%), followed by drug and alcohol misuse (20.4%), relationship conflict (18.8%), whilst anger and impulse control accounted for 13.1%. With treatment, equal numbers (36.2%) proceeded to either discharge or retention within the ADF. Significant suicidal ideation requiring joint command and medical involvement was present in 15.9% of cases.

Conclusions: Mental health morbidity places a significant drain on ADF capability and is a challenging workload for ADF health services. In this study, mental health morbidity appeared to occur early in a member's career. Workplace environment and other everyday stressors seemed to play a more important role in precipitating illness than did combat related factors. Further research, including intervention studies targeting highlighted stressors, is recommended.

*Corresponding author: Dr. John Shephard, Department Of Defence, 82 Warren Road, Marrickville, 2004
Email: js@onesmallstep.com.au*

Deployment stress, allostatic load and cascading family effects

John Pead

The unremitting stresses of deployment to Australia's Middle East theatres result in psychological responses that now commonly require significant adjustment on return to the Australian community. Two important models for understanding these responses and the promotion of adjustment upon return are the impact of allostatic load and the cascading effects on families that are in turn felt by the deployed person. Using video vignettes and recent case examples, seen by the author, these concepts are illustrated and their implications for practice improvement considered.

*Contact author: John Pead,
Australian Centre Posttraumatic Mental Health,
Level 1, 340 Albert Street, East Melbourne, Victoria, 3002
Email: jpead@unimelb.edu.au*

Post-deployment psychological screening: a review of mental health trends for 2008

Cherie Nicholson

Mental health trends from the most recent post-deployment psychological screening annual report will be presented. Data will encompass Army, Navy, and Air Force ADF members deployed to the four main active operations (Anode, Astute, Catalyst and Slipper) who returned to Australia between Jan and Dec 2008. Data collected upon return to Australia will be compared to data collected 3-6 months later in order to examine the change in trends over time and check for effective reintegration. Topics covered include trauma exposure trends, organisational stressors, symptomology, and perceived deployment experiences.

*Contact author: Cherie Nicholson, Department of Defence, CP2-7-097 Campbell Park Offices, Campbell Park,
Email: cherie.nicholson@defence.gov.au*

Ability & Capability

RNZAF medical branch – sink, swim or fly

Peter Hurley

Since the mid 90s, the Royal New Zealand Air Force (RNZAF) Medical Branch has been struggling to survive and discover its identity. In the mid 90s, a decision was made to civilianise the medical branch

and contract out services. This led to many personnel leaving the branch. Subsequently, a further decision was made to revert to a uniformed branch. By that time, the medical branch was in considerable disarray with a shortage of personnel and a fragmented health service. All the branch could do was to meet the needs of primary health care.

In an attempt to regenerate the medical branch, a project was developed to identify the areas in the

branch that needed attention and subsequently a second project followed to plan the implementation of the regeneration process. During the stages of the project, the New Zealand Defence Force (NZDF) as a whole also commenced a project to determine the future health needs of the NZDF and, this year, draconian measures have been introduced to curb spending and restrict expansion.

This presentation sets out the processes adopted for the two projects, the areas identified as crucial for the branch to function efficiently, the development of an ideal situation and subsequent interim measures to operate within the boundaries of a recession based operation.

*Contact author: WGCdr Peter Hurley, RNZAF, RNZAF Base Ohakea, Private Bag 110331, Palmerston North, 4440
Email: Claire.McCabe@atlantic.co.nz*

Australian Defence Force Reserve Dental Officers – their capabilities & suggestions for their employment

Janet Scott

The Surgeon General of the Australian Defence Force looks for specific advice from the Chairmen of his various Consultative Groups.

Upon assuming the Chair of the Consultative Group in Dentistry, a questionnaire was sent to all Dental Officers on the list of Australian Defence Force (ADF) Reserves. The aim was to produce a contemporary list of Defence Reserve dentists, their qualifications and interests which could then be used by any part of

Defence Dental Services or Joint Health Command. The questionnaire asked if members were still interested in remaining part of the ADF and if so, to ascertain how they felt they could contribute to the ADF. A total of 142 questionnaires were sent, 97 replies were received (70% response).

Nine members had retired from clinical practice, 4 were no longer interested in being part of the Reserves, and the remainder were still willing to be active within the Reserves, with most wishing to contribute either as mentors to junior officers or to provide support to military bases for periods of time. Several already visit their local bases on a sessional basis.

Of the 97 responses, there were 24 from Navy, 38 from Army and 35 from Air Force members. Many were specialists, with most dental specialists being represented.

From the results of the survey, a paper was submitted to the Surgeon General suggesting ways of employing the Reserve Dental Officers. A pilot study is underway to provide an oral surgery rotation to Darwin, where there is limited civilian oral surgical support.

The methodology and results of the survey are presented together with suggestions for the future.

*Contact author: Dr. Janet Scott, AMMA Council, 76 Kensington Road, Rose Park 5067
Email: J F Scott@adam.com.au*

Chemical Warfare – a retrospective: the Great War 1914-1918

Michael Tyquin

This paper summarises developments in chemical (gas) warfare over the years 1915-1918 and its repercussions in the treatment of affected soldiers. It looks at the response of British and Australian military medical authorities to the German gas threat while detailing some of the diagnostic and clinical features of this unique type of warfare. There may also be value for current management of chemical warfare victims in the study of past practices.

*Contact author: Dr. Michael Tyquin, Making History, 44 Warramoo Crescent, Narrabundah 2604
Email: makinghistory@bigpond.com.au*

Anthropometric limitation for the Kiowa Helicopter

Adrian Smith

In response to a number of recent Army student pilots who could not be accommodated in the Kiowa helicopter, despite meeting the current anthropometric limits for selection as a pilot, HQ 16 AVN BDE requested that AVMED define the maximum sitting height that can be accommodated in the Kiowa, and evaluate the potential impact that adopting such a limit might have on the selection pool for Army pilots.

Method: AVMED undertook a cockpit accommodation trial of 11 subjects with sitting heights between 89 cm and 103 cm, wearing HGU 56/P helmets. Results. Individuals with sitting height >94 cm bumped their helmet on the roof spar, whereas individuals with sitting height ≤92.5 cm had a 1.5-cm clearance between the top of their helmet and the roof spar. Individuals with buttock-knee lengths of up to 64.5 cm were able to operate the rudder pedals without their legs contacting the instrument panel. Sitting height recorded on the recruit medical examination was as much as 4.5 cm shorter than measured by the authors; discrepancies in buttock-knee lengths of 2-3 cm (but as much as 8.5 cm in one case) existed for buttock-knee length.

Conclusions: The Kiowa cockpit cannot accommodate individuals with sitting height >92.5 cm. This excludes up to 70% of men and 10-15% of women in the Australian community aged 18-30 years, and approximately 52% of

aircrew applicants. A sitting height limit of 95 cm would only exclude 24% of applicants. Where sitting height is a critical dimension to determine accommodation in the Kiowa, selection of aircrew based on a medical examination where the examination under-records the sitting height by up to 4.5 cm can have a significant impact on Army's ability to correctly select applicants who can fit into the Kiowa. Errors and inaccuracies in measurement would be minimised if all aircrew applicants were processed in a single centre with highly-trained staff experienced in aircrew anthropometry, especially if anthropometric dimensions were captured by a LASER scanner.

Recommendations: AVMED recommends that 95 cm be adopted as the maximum sitting height that can be accommodated in the Kiowa; however, applicants with sitting heights >92 cm but ≤95 cm should undergo a formal cockpit check to determine their fit. Applicants with sitting height >95 cm should not be selected to fly the Kiowa. If identifying an alternate training helicopter that can accommodate a greater section of the Australian population is not feasible, Army could consider retro-fitting the Kiowa with an adjustable seat capable of accommodating people with sitting heights up to 98 cm in order to increase their selection pool.

*Contact author: Dr. Adrian Smith, RAAF Institute of Aviation Medicine, RAAF Base, Edinburgh, 5111
Email: adrian.smith14@defence.gov.au*

Veterans' Health I

The Australian Deployment Health Surveillance Program: an evaluation of recruitment and data collection strategies

Colleen Loos, Lisa Nielsen, Tegan Cosgrove, Susan Treloar, Christine McClintock, Michael Waller, Annabel McGuire

Background / Objectives: A series of cross-sectional studies exploring health outcomes in Australian Defence Force (ADF) personnel who deployed to the Solomon Islands, Bougainville and East Timor was recently conducted. We aimed to evaluate the effectiveness of mail and email approaches in the collection of questionnaires, the success of call strategies in telephone follow-up, and the characteristics of online and mail participants in questionnaires surveys.

Methods: For the Solomon Islands study conducted in 2007 (N=994) all invitations were sent by mail. For the larger Bougainville and East Timor cohorts approached in 2008 (N=12,742), two-thirds of invitations were emailed, with the remainder being mailed. Recipients

could complete the questionnaire online or request a paper copy. Those who did not reply were followed up by telephone and, where requested, invitations and/or questionnaires were re-sent.

Results: Emailing the invitations was twice as effective as mailing in the Bougainville and East Timor studies, with 24% of the sample participating after an emailed invitation, versus 12% for a mailed invitation ($p < 0.001$). During telephone follow-up for non-responders, the potential participant was actually reached on 65% of the mobile numbers, compared with 42% of landlines ($p < 0.001$). These studies received a 43% response, with 86% participants (N=4689) submitting data online.

Conclusions: There are significant advantages to using electronic recruitment and data collection methods, especially among young, mobile populations. Email is a cost-effective way to deliver study invitations, and mobile telephone numbers facilitate contact with potential study participants.

Corresponding author: Colleen Loos, Centre For Military and Veterans' Health, Level 2 Mayne Medical School, Herston Rd, Herston, 4006 Email: c.loos@uq.edu.au

The near north area of influence study group: comparison of health outcomes for personnel who had not been on a military deployment compared with those who had been to East Timor and the Middle East area of operations

Jonathan Bleier, Michael Waller, Annabel McGuire, Susan Treloar, Alexander McFarlane, Annette Dobson

Assessment of any kind of association between military deployment and health outcomes requires comparison with a group who could be considered representative of the people who deployed. It is clear that the general population is not suitable for this because the military selects, on entry, for a range of criteria that include measures of health.

Throughout military careers, people continue to experience assessment and selection, and are offered medical care, as well as having the opportunity, and often a requirement, to participate in physical training. The consequence of this process has been called the "health soldier effect". Military people, as a group, are expected to be fitter and healthier than the general population.

Not everyone in the military experiences deployment. A proportion are deployed once and some people experience multiple or prolonged deployment. Entry to this cadre is also selective as subsequent deployment is almost certainly conditional that the person was fit to deploy. Therefore a person who has deployed many times may have been healthier to begin with than someone who has deployed fewer times, or not at all.

How should the effect of deployment be assessed for these people? Who can they be compared to?

The Near North Area of Influence (NNAI) data set consists of information collected from three separate studies of ADF deployments to Bougainville, East Timor and the Solomon Islands. These studies are part of the Deployment Health Surveillance Program, a research program funded by the Department of Defence and with scientific input from the Department of Veterans' Affairs. The studies were conducted between 2007 and 2008 by the Centre for Military and Veterans' Health (CMVH).

Collectively 5,911 people responded to questionnaires about their general health and deployment experiences. Within this group there were people who had never deployed overseas and those who had been on multiple deployments.

This presentation will discuss a comparison of self-

reported general, psychological and social health outcomes between ADF personnel who had never deployed and those who had deployed both to East Timor and the MEAO.

Corresponding author: Jonathan Bleier, Centre for Military and Veterans' Health, The University of QLD, Mayne Medical School, Herston Road, Herston, 4006 Email: j.bleier@uq.edu.au

Analysis of self report symptoms reported by the Australian Defence Force in the near north area of influence health studies

Annabel McGuire, Michael Walle, Jonathan Bleier, Catherine D'Este, Malcolm Sim, Susan Treloar, Annette Dobson

Background/Objectives: A number of international studies have reported on the prevalence and patterns of symptoms in military populations deployed to different locations. The results of three Cross-sectional studies of Australian Defence Force (ADF) deployments to the Solomon Islands, Bougainville and East Timor between November 1997 and December 2005 will be used to assess the reported health symptoms in these samples.

Methods: Survey participants were asked to complete a symptoms checklist, which consisted of 67 items. Data are represented graphically to compare the prevalence of self reported symptoms between deployed and non deployed exposure groups. The prevalence of specific symptoms was compared using logistic regression and the difference in the total number of symptoms reported between exposure groups was assessed using negative binomial models.

Results: In each study the most common symptoms recorded in the deployed groups were Fatigue, Feeling unrefreshed after sleep and Sleeping difficulties. Overall Solomon Islands and Bougainville veterans did not report more symptoms than their respective comparison groups. However, the prevalence of symptoms was generally higher in East Timor veterans than the comparison group.

Conclusions: The deployment to East Timor included both warlike and non-warlike operations. In comparison, the deployments to Solomon Islands and Bougainville were predominantly peace keeping operations. The results are discussed in this context and compared with international studies of different deployments which have utilised similar techniques.

Corresponding author: Dr. Annabel McGuire, Centre for Military and Veterans' Health, Level 2 Mayne Medical School, Herston Rd. Herston 4006 Email: a.mcguire@uq.edu.au

The defence deployed East Timor health study:
overview of findings

*Susan Treloar, Annabel McGuire, Christine McClintock,
Michael Waller, Jonathan Bleier, Lisa Nielsen, Colleen
Loos, Peter Nasveld, Annette Dobson*

Background: The Defence Deployed East Timor Health Study is part of a series of studies aiming to research the health and well-being of Australian Defence Force (ADF) veterans who have deployed on active service overseas. The studies are being conducted by the Centre for Military and Veterans' Health (CMVH) as part of the Deployment Health Surveillance Program (DHSP).

Aims: The aim of the DHSP is to examine the physical, emotional and environmental effects of deployment in order to identify, prevent and manage health care needs of current and former ADF members. The aim of the East Timor Health Study was to investigate the health status of Australian Defence Force personnel who deployed to East Timor relative to a frequency matched comparison group who did not deploy.

Methods: The study was conducted in 2007-2008. It included analysis of data gathered from mortality and cancer incidence registries, a comprehensive self-reported questionnaire, and health and psychology records retained by the ADF. A random sample of 3999 ADF personnel from the 19710 who deployed to East Timor between June 1999 and May 2005 as part of Operations FABER, SPITFIRE, WARDEN, TANAGER, CITADEL and SPIRE were invited to participate. A comparison group of 2501 individuals who were eligible to deploy to East Timor, but did not, were also invited to participate. Participation involved completing a questionnaire on current physical and mental health and another on a range of potential exposures and stressors associated with their deployment. Consent was sought to link questionnaire information to ADF medical and psychological screening records. Response was obtained from 43% of the living sample. Because the operations varied substantially in nature over time, comparative analyses of health status for personnel who deployed on the early and late operations over the period were possible.

Results: We present an overview of key health findings from the different East Timor study components. We focus particularly on results of deployed versus comparison group analyses, the early versus late deployments, differences between Services and between currently serving and ex-serving respondents.

Conclusions: Findings are interpreted in the light of methodological advantages and limitations, comparable international studies, and implications for prevention and service delivery.

*Corresponding author: Assoc/Prof. Susan Treloar,
Centre for Military and Veterans' Health,
Level 2 Mayne Medical School, Herston Road,
Herston 4006 Email: s.treloar@uq.edu.au*

The defence deployed Bougainville health study:
overview of findings

*Christine McClintock, Susan Treloar, Annabel McGuire,
Michael Waller, Jonathan Bleier, Lisa Nielsen, Colleen
Loos, Tegan Cosgrove, Peter Nasveld, Annette Dobson*

Background: The Defence Deployed Bougainville Health Study is part of a series of studies aiming to research the health and well-being of Australian Defence Force (ADF) veterans who have deployed on active service overseas. The studies are being conducted by the Centre for Military and Veterans' Health (CMVH) as part of the Deployment Health Surveillance Program (DHSP).

Aims: The aim of the DHSP is to examine the physical, emotional and environmental effects of deployment in order to identify, prevent and manage health care needs of current and former ADF members. The aim of the Bougainville Health Study was to investigate the health status of Australian Defence Force personnel who deployed to Bougainville relative to a frequency matched comparison group who did not deploy.

Methods: The study was conducted in 2007-2008. It included analysis of data gathered from mortality and cancer incidence registries, a comprehensive self-reported questionnaire, and health and psychology records retained by the ADF. All 4775 ADF personnel who deployed to Bougainville between November 1997 and June 2003 as part of Operations BEL ISI I & II were invited to participate in the Bougainville Health Study. A comparison group of 2363 individuals who were eligible to deploy to Bougainville, but did not, were also invited to participate. Participation involved completing a questionnaire on current physical and mental health and another on a range of potential exposures and stressors associated with their deployment. Consent was sought to link questionnaire information to ADF medical and psychological screening records. Response was obtained from 45% of the living sample.

Results: We present an overview of key health findings from the different Bougainville study components. We focus particularly on results of deployed versus comparison group analyses, differences between Services, between currently serving and ex-serving respondents and on the deployment experience of the deployed group.

Conclusions: Findings are interpreted in the light of methodological advantages and limitations, comparable international studies, and implications for prevention and service delivery.

*Corresponding author: Dr. Christine McClintock,
Centre for Military and Veterans' Health, Level 2
Mayne Medical School, Herston Rd. Herston 4006
Email: c.mcclintock@uq.edu.au*

Army Medical Training

The new army medical technician training continuum

Jo-Anne Hem

As with most technical trades there is a constant need to continually update skills and training. Health Services Trades in the Military are no exception. To that end a new training continuum has been developed by the Army School of Health to address training issues and concerns for Medical Technician Training, ECN 031. This training has been endorsed for commencement as of 27 July 2009. The requirement has come about due to the medic's increasing role on operations, standardisation of clinical experience and the decreased opportunities able to be provided in the workplace for clinical practice and ongoing skills maintenance for Basic Medical Operators (BMOs) and Advanced Medical Technicians (AMTs). There has been a constant push from our "customer", the units at the coalface, for the School to produce a better product in a shorter timeframe and this new continuum is the response to this need. All the training provided by the Army School of Health is subject to a continual process of evaluation and validation to ensure best current practices are being taught on all our courses.

Today a number of my staff will provide information to you, not only of the New Medical Training Continuum for Medics; why it was developed and how it is going to be implemented, but also what is the "gap" for those currently trained BMOs and AMTs. Further, all military health practitioners and health practitioner students need to understand what the requirement for civilian national registration in July 2010, is going to mean to our Military Health Providers?

Contact author: Jo-Anne Hem, Australian Defence Force, Email: jo-anne.hem@defence.gov.au

RCC/RPL policy for the Gap

Michelle Wyatt

The Royal Melbourne Institute of Technology (RMIT) who assists ASH to provide the Basic Medical Assistant Training have mapped the Gap requirements and devised a Gap course and a RCC/ RPL policy to grant those who can meet the criteria outlined. Timeframes of when existing medics can apply for gap training or RCC / RPL for the Certificate IV qualification will be advised. Once registered as a Cert IV Nurse it is the member's responsibility to maintain it. Further, Health Services Wing, Army School of Health also has in place a robust RCC/ RPL policy which is often not utilised correctly. This is an appropriate opportunity to highlight some key issues to the target audience.

The introduction of civilian National Registration for all Health Practitioner and Health Practitioner students imposes the need for our training to meet the Certificate IV standards and for military health practitioners to maintain their registration. The impact comes from the need for the Military to have access to clinical placements for students and strategic alliances for units to provide professional development and ongoing clinical skills maintenance. It also provides the added advantage to Medics to gain additional employment outside of the military. New developments need continual management and this is the task of Standards Cell at Health Services Wing.

Contact author: WO Michelle Wyatt, Australian Army, Army School of Health, Latchford Barracks, Bonegilla, 3694 Email: tracy.meys@defence.gov.au

Military advanced resuscitation course/regimental medical officer introduction course

Bronlyn Jones, Peter Zimmerman

The Military Advanced Resuscitation Course is a tri-service course for Military Nursing Officers and some Dental Officers now being conducted over five weeks. It has also be developed into two modules being Module One (two weeks) – Medical and Module Two (three weeks) – Trauma.

This allows the attendance of part-time members on the course, by module, if they are unable to attend the whole five weeks up front. Although it is recommended that attendance on both modules is completed within a 12 month period. Three courses are conducted each training year by Health Services Wing.

This course is up for review this year again with an occupational analysis planned. Outcomes are expected to identify more commonality between the three services. Other developments have included some sequencing changes raised since developing the course into the two modules, the development of a more flexible pre-course package that is readily available on line, and development of a recertification package. The recertification package is currently being piloted utilising visiting directing staff for the course prior to the student's attendance. The expectation once rolled out is that members will complete annually and have recorded on PMKeys.

The Regimental Medical Officer Introductory Course is also undergoing review. A pre-course package – An Introduction to Military Medicine taps into two modules from the Masters of Public Health provided by CMVH at University of QLD. Competencies include managing mass casualty situations, deploying health

facilities and understanding the provision of health care in the Army. The Medical Officers new to Army also look at care of the trauma casualty and interventions for life-threatening conditions. One of the benefits is that these courses are being conducted concurrently at Health Services Wing alongside Military Advanced Resuscitation Course or the Advanced Medical Technicians Course. This opportunity allows interaction in joint scenarios making the training provided relevant and realistic. Still a little way to go at getting this package complete but all will be ready for the next course due June 2010.

Corresponding author: CAPT Bronlyn Jones, Australian Defence Force, Email: bronlyn.jones@defence.gov.au

A new way forward to improving the provision of mental health support.

Emma Garrett, Peter Zimmerman

The importance of mental health support within the military became paramount following greater understanding of the psychological impact on veterans of the Vietnam War. Since then, the provision of mental health support within the ADF has seen continuous development to ensure the support meets the psychological needs of military personnel.

High quality training of our mental health professionals and providers is vital in the provision of timely and appropriate mental health support to ADF personnel. The nature and content of this training has become more pertinent given the recent release of the Dunt review, recommending that mental health training of ADF personnel is to be more widely implemented. Consequently, this has implications for the nature and type of training that our mental health professionals and providers will need to undertake.

Psychology training within the military is currently in the very early stages of redevelopment and improvement, with the predominate goal being increased mental health capability and enhancement of the quality of mental health care provided to soldiers. Additionally, training improvements will attempt to focus on the opportunity to provide standardised and best practice training to APS staff employed as mental health professionals and providers of tri-service ADF personnel.

Corresponding author: CAPT Emma Garrett, ADF, C/O Hsw Ash, Latchford Barracks, 3694, Email: emma.garrett@defence.gov.au

ADF Deployable Healthcare

ADF deployable healthcare – a vision for the future
Andy Williams

This presentation will discuss emerging concepts in operational health support. It will consider some of the emerging trends in operational medicine drawing upon the experiences of our Coalition partners in the Middle East Area of Operations. Having drawn out some of the key lessons, especially in the areas of initial trauma care, evacuation and early surgery, it will then outline one potential future for the ADF's deployable health capability, drawing upon the work of the Directorate of Health Capability Development.

Contact author: LTCOL Andy Williams, Joint Health Command, CP2-7-062, Campbell Park Offices, Canberra 2600 Email: andrew.williams15@defence.gov.au

Is health doctrine irrelevant?

Michael Penman

This presentation will discuss what doctrine is and what it is not. It will discuss the rapid technological changes in health. With the formation of Joint Health Command, Commander Joint Health (CJHLTH) has

taken over the responsibility of joint health doctrine from what was the Head Personnel Executive. Single service health doctrine is not affected, yet there is very little health doctrine that is purely of a single service nature. Should CJHLTH have a greater input into single service health doctrine? With this in mind, is health doctrine also keeping up with technological change and does it need to be made more relevant?

Contact author: WGCDR Michael Penman, Joint Health Command, Campbell Park Offices, CP2-7-067, Canberra 2600 Email: michael.penman@defence.gov.au

Simulating times ahead – or are there?

Merilyn White

This presentation will discuss the relevance of the future of simulation in operational healthcare considering its use in routine garrison training, pre-deployment mission rehearsal and in the deployed environment. It will consider:

- The Defence Health Simulation Analysis (ADSO) and the awarding of the contract;

- The work conducted by Booz & Co and the findings of Defence Health Simulation Requirements Study and Report;
- The Defence Health Simulation Strategy and Implementation Plan.

The presentation will then focus the likelihood of achieving the objectives of the Implementation Plan, especially as it relates to operational health support, given single-Service governance of health training and activities and the limited budget available for health simulation within Defence.

Contact author: WGCDR Merilyn White, Joint Health Command, Campbell Park Offices, CP2-7-065, Canberra 2600 Email: merilyn.white2@defence.gov.au

Joint project 2060 – can it still deliver?

David Thomas

This presentation will outline Joint Project (JP) JP2060 – ‘The ADF Deployable Health Capability’. It will provide an overview of the transition from a whole of capability concept under Phase 1 to an equipment buy during Phases 2 and 3. The presentation will then move on to a review of recent purchases, about to be acquired capabilities and immediate future capability purchases within Phase 2B of the project. Finally, a broad discussion of the capabilities being considered for purchase in Phase 3, which will be a mixture of low, medium and a few potentially high risk technologies.

Contact author: LTCOL David Thomas, Joint Health Command, Campbell Park Offices, CP2-7-064, Canberra 2600 Email: david.thomas2@defence.gov.au

Anaesthesia in Remote and Austere Environments

Anaesthesia in remote and austere environments

Brian Pezzutti, David Scott, Stuart Green, Marty Graves

This session will explore the variable options available for anaesthesia in difficult environments. Each of these very experienced speakers will consider a class of agents with particular respect to the pros and cons of their use in disaster or warlike situations. A practical approach to anaesthesia in these situations are considered.

Robust debate will be generated in the discussion phase following the presentations.

Corresponding author: BRIG the Hon Brian Pezzutti, Australian Defence Force, Uralba Street, Lismore 2480 Email: brian.pezzutti@bigpond.com

Mental Health Developments

The reformation of mental health in the ADF

Stephanie Hodson

In 2002 Defence launched the ADF Mental Health Strategy. A recent review of mental health in the ADF by Professor David Dunt considered that the introduction of the ADF Mental Health Strategy in 2002 was far-sighted and that it compares favourably and in some ways surpasses similar strategies in Australian workplaces and other military forces. Nevertheless, Professor Dunt’s benchmark review necessarily highlights the gaps in the delivery of mental health services in the ADF, and he made 52 recommendations to reform and enhance the delivery of ADF mental health programs and Defence and DVA transition services. Furthermore, it calls for the next generation of the mental health strategy and the need to comprehensively evaluate the current and future

programs. This presentation will provide a framework for the reformation of mental health in the ADF as part of the Joint Health Command transformation process. It will summarise the strategic direction of the ADF Mental Health Strategy for the next four years, as well as exploring the challenges of conducting health evaluation.

Contact author: LTCOL Stephanie Hodson, Directorate of Mental Health, CP2-7-093, Campbell Park Offices, Campbell Park 2600 Email: stephanie.hodson@defence.gov.au

Post deployment psychological screening: a preliminary review of referrals, follow-up and screening instruments

Helen Benassi, Cherie Nicholson, Nicole Steele, Cate Wren

The 2009 Review of Mental Health and Transition Through Discharge (Dunt, 2009) identified a lack of knowledge about the effectiveness of screening in the ADF and proposed the dissolution of intensive screening immediately post-deployment to focus resources at a critical period three to six months post deployment. To address this lack of knowledge regarding screening effectiveness, the Directorate of Mental Health began a quality assurance process in 2009, reviewing a trialed version of the RtAPS questionnaire and conducting a comprehensive file audit. This presentation will outline results of the file audit targeting RtAPS referrals and follow-up, as well as the outcomes from the trial of various screening instruments. The presentation will consider implications for quality control, duty of care and ongoing program evaluation needs.

Corresponding author: Helen Benassi, Department of Defence, Canberra Email: helen.benassi@defence.gov.au

Transition mental health and family collaborative (Townsville)

John Pead, Darryl Wade, Beth Keating, Karen Green, Michelle Dorney

This practice improvement collaborative comprises 5 Aviation Regiment, RAAF Townsville, Lavarack Barracks Medical Centre, ADF Transition Centre, Defence Community Organisation, DVA, VVCS, CRS Australia and Mater Hospital. We are seeking to provide more effective mental health and family support to Australian Defence Force (ADF) members who are being medically discharged. The collaborative is evaluating a methodology pioneered by the US Institute for Healthcare Improvement and is funded through the Australian Government's Mental Health Lifecycle Package.

The practice improvements being undertaken are summarised in the following five agreed change priorities:

- Collaboration - improved inter-agency collaboration.
- Engagement - effective engagement and communication.
- Recognition- better recognition of mental health problems.
- Families - improved family sensitive and inclusive practices.

- Interventions - more effective advice, support and treatment.

Each team has a mandate from their organisation's management and their active support to achieve measurable changes in mental health and family work practices. The collaborative approach is designed to have minimal disruption to everyday work routines, the maximum likelihood of improved practices becoming part of everyday routines and requires no additional resources for practices to be sustained.

Throughout 2009 each team has specified outcomes to be achieved, has worked on achieving these outcomes during the action periods between learning sessions, and reports on these at the Learning Sessions and the final Conference. Between the Learning Sessions, teams participate in coaching at their workplace and teleconference support. The findings concerning improved mental health and family practices are reported together with the feasibility of replicating this methodology for improving health practices.

Corresponding author: John Pead, Australian Centre Posttraumatic Mental Health, Level 1, 340 Albert Street, East Melbourne, Victoria 3002 Email: jpead@unimelb.edu.au

ADF resilience training: the evaluation of a new ADF resilience training initiative

Andrew Cohn, Monique Crane, Cate Wren, Stephanie Hodson

In this study, the researchers examined the effectiveness of a two hour resilience intervention designed to enhance the flexibility of coping strategies, resilience and decrease problematic psychological symptomology. The BattleSMART (Self-Management and Resilience Training) program is based on Cognitive-Behaviour Therapy (CBT) and emerged from coping skills training initially implemented at the Army Recruit Training Centre. Research by Cohn and Pakenham (2008) indicated that the coping skill training was effective in enhancing psychological adjustment, and reducing ineffective avoidant coping strategies. In May 2009, a thorough evaluation of the BattleSMART program was evaluated at the Defence for School of Signals (DFSS). The evaluation sought to examine the programs ability to teach key concepts associated with CBT and produce sustained psychological well-being during a period of increased academic stress. Two-hundred and seventeen DFSS trainees were given the BattleSMART program within the first two weeks of their training. Scales measuring knowledge of key concepts, coping strategies, psychological well-being, resilience and alcohol use were administered pre, post and three-months following the BattleSMART program. The analysis

indicated that students were able to learn key concepts and retain these understandings three months post the intervention. More effective coping strategies (i.e. problem solving) and less avoidant coping was also reported three months post training. Further, positive psychological outcomes and lower distress was related to the knowledge of key concepts taught as part of the intervention. The findings indicate that

the BattleSMART program may be a useful stress-management and resilience building intervention in trainees at DFSS.

Corresponding author: Dr. Andrew Cohn, Department of Defence, DMH CP2 - 7 - 100, Northcott Drive, Campbell Park Offices, Canberra 2600 Email: andrew.cohn@defence.gov.au

Trauma

Early management of dental trauma – teeth are not dispensable

Lisa McLean

Early Management of Dental Trauma – Teeth Are Not ‘Dispensable’! – An updated and ethical approach to the management of dental trauma for primary healthcare providers in the absence of dental practitioners.

Dental trauma includes injury of the teeth, gingivae, periodontal ligament and supporting bone – all of which are important body structures for the recovery and long term wellbeing of the patient. Dental injury is often part of a multi-injury presentation – however it is frequently not noticed or is ignored at the time of presentation. In the absence of life threatening injury the aim of any healthcare professional is to ensure preservation of tissue and body structures – yet teeth and dental structures seem to be the exception to this rule.

In the primary care environment dental trauma is traditionally treated as a minor injury – with clinical protocols for early management reliant on the immediate referral to a dentist. Tooth structure and teeth seem to be regarded as ‘expendable’ or perhaps even ‘dispensable’ organs. This may have been acceptable in previous centuries when the dentist’s role was still evolving from one of ‘tooth pulling’ and ‘provider of false teeth’. However modern, ethical and holistic medicine should regard tooth loss as it does amputation or the loss of any other body structure or organ.

Dental injury is very common and often has life long ramifications. It should no longer be regarded as a minor injury and justifies prompt and appropriate management after the patient is medically stabilised. In rural and remote communities it is frequently not possible for a dentist to provide immediate treatment. First aiders, paramedics, outpatient departments, and general medical practitioners are often called upon to manage dental trauma in emergency situations. Many are reluctant and have great difficulty managing dental injuries appropriately. This appears primarily due to

misunderstanding and a lack of training, as well as the inadequacy or absence of dental first aid kits. The current critical shortage of dentists in Australia will mean that other health care providers will be more frequently expected to manage dental trauma and cannot rely on simply giving the advice to – ‘see your dentist in the morning’.

This paper will review current attitudes to dental trauma and will look at available education, training, protocols and equipment for this type of trauma. Discussion will consider an alternative and more ethical approach to the early management of dental trauma by primary healthcare providers. Particular attention will be given to the development of the of the ‘ideal’ dental first aid kit for use by isolated primary healthcare providers who may be expected to manage dental trauma where no dental support is available in the short term.

Contact author: Dr Lisa McLean, Aspen Medical, 368 Racecourse Rd, Yackandandah, 3749, Email: lmclean@aspenmedical.com.au

Tackling trauma: a civilian-military training collaboration in trauma medicine at the RAH

Rupert Templeman

This presentation will outline my experience as a Trauma Registrar at the Royal Adelaide Hospital over 3 months in early 2009. An audit of ‘war-like’ blast and burn casualties treated in the unit during this term will be discussed.

The Royal Adelaide Hospital hosts the only level 1 trauma facility in the state of South Australia – a state covering 983,482 square kilometres and with a population of approximately 1.6 million people. Over three and a half thousand trauma patients are treated by the service each year, including over one thousand level 1 (ISS>16) trauma casualties. Twelve week placements in Trauma Medicine are offered to junior doctors-mostly trainees in Emergency Medicine and junior Surgical Registrars. Through the support

of specialist reservists GPCPT Bill Griggs and WGCDR Andrew Pearce, this program has been offered to full time military medical officers. I am one of 4 military medical officers from RAAF Base Edinburgh to have benefited from this civilian-military training opportunity.

The trauma service is embedded in the emergency department of the RAH and is highly integrated with other critical care services of the hospital such as Radiology and Intensive Care. The trauma teams approach to initial assessment and treatment of casualties follows the EMST/ ATLS principles. Roles and responsibilities of each member of the trauma team are well defined. This approach to the care of the injured patient, as adopted by Trauma Centres world-wide, has well documented benefits in mortality, morbidity, length of hospital stay and cost.

A major responsibility of the Trauma Registrar is to co-ordinate the care of trauma casualties from point of presentation to the completion of the tertiary survey. In addition to the assessment and treatment of the ABCDE's, registrars follow patients admitted to the hospital to ensure the 'whole of patient' approach is taken and a complete head to toe examination is performed when the patients level of alertness and pain control permits. In the resuscitation room, emergency procedures such as IV cannulation, chest drain insertion and reduction of fractures are frequently performed.

It has been said that working in a civilian trauma service is the closest you can get to practicing medicine in a war zone. An audit of the "war-like" blast and burns casualties treated by the service during the rotation will be presented. For many full time ADF medical officers, most pre-deployment time is spent in training and in providing primary health care to a predominantly fit and well population. Whether deployed to a war zone or not, MO's may be called on at any time to treat (often multiple) trauma casualties. As such they should be proficient in the initial assessment and management of these patients. Only civilian teaching hospitals with a designated trauma service can provide the numbers of suitable patients and the support and teaching to gain the experience required. Following on from the EMST course, a rotation at a trauma unit provides an ideal preparation for this scenario.

Contact author: *FLTLT Rupert Templeman, RAAF, 1A Torrens Street, Gilberton 5081*
Email: *rupert_templeman@hotmail.com*

Otological injury and typanic membrane rupture due to improvised explosive devices

Peter Peters

Otological injury and tympanic membrane rupture have long been identified as a one of the most common injuries, both civilian and military related to improvised explosive devices, along with the lungs and bowel. The following is a review of the literature over the past 20 years with regard to otologic trauma and subsequent monitoring. Bomb blast injuries tend to affect air containing organs due to the shearing force on air-tissue interfaces. As a result, the percentage of those injured during a blast explosion who also suffer a tympanic membrane rupture is highly variable. Whilst the spontaneous membrane closure rate sits between 75-90% in the literature, there are numerous confounders that can drastically affect this number. This takes on a more important aspect when one considers the environment in which an improvised explosive devise is likely to be deployed

Contact author: *Dr Sub Lieutenant Peter Peters, Naval Headquarters - South Queensland and Princess Alexandra Hospital, Email: peter2734@gmail.com*

Normothermic fluid administration to the trauma patient

David Bedford-Lee

Research has shown that there is an increase in mortality and morbidity in the hypothermic trauma patient, compared to normothermic patients with the same injuries. To improve patient outcomes it is vital that the treatment of trauma patients includes various heat loss reduction strategies. The administration of normothermic fluid is a key component of the trauma treatment plan. It is used to assist the prevention of hypothermia.

Not to re-warm hypothermic patients! There are a number of other non-invasive techniques that can assist in the prevention of heat loss that will also be discussed.

Contact author: *David Bedford-Lee, Ambulance Service Victoria, 7 Clematis Street, Belgrave 3160*
Email: *bedfordlee@iprimus.com.au*

Clinical Miscellany

Inversion therapy for back pain. What causes spinal compression?

Robert Garrett

Gravity continuously creates pressure and stresses on muscles, bones, joints, ligaments and spinal discs. Add muscle imbalances and stretched ligaments that result from our way of life, and you have a recipe for back pain. The inner core of the discs (nucleospulpous) is a jelly-like substance that acts like a shock absorber, providing flexibility and cushioning when standing, sitting and exercising. During normal daily activities, gravity compresses the discs and causes fluid to squeeze out into the tissues. With less space between the discs you can lose as much as 2cms in height. Some of the fluid soaks back into the discs when sleeping. When in their senior years a person loses 1-4cms in height.

Insufficient space between the vertebrae can result in pressure on the spinal nerves as they emerge from the inter-vertebral forearm, which in turn causes pain. Often the pressure on the discs is unevenly distributed due to the poor sitting of repetitious postures in certain occupations. This constant increase in pressure on part of the nucleus pulposus can cause it to bulge against the fibrous outer later (annulus fibrosus) which can lead to increased pressure on the adjacent nerve root and eventual disc herniation adhering the nerve root and causing chronic back and referred pain.

Nachemsno measured on the L3 vertebral internal disc pressure in various every-day postures and activities, and found the intra-disc pressure in the lumbar spine is increased by 380% in incorrect lifting; 290% on holding a 20kg weight and flexing forwards and 210% doing sit-ups with the knees flexed. The least pressure, 40% was in lying. The study concluded that a traction load of 60% body weight was sufficient to decrease the residual intra-disc pressure of 25% standing body weight, to zero %. Sheffield treated 175 patients whom were unable to work due to back pain. After eight inversion treatments, 255 patients were able to return to work full-time.

Benefits of decompression by inversion

1. It diminishes the influence of gravity, reducing the compression on the vertebrae and discs and allows the muscles and ligaments supporting the spine to relax, relieves stress and improves circulation. The slightest increase in spacing between the vertebrae can create a mild suction within the disc, which, along with increased tension of the posterior longitudinal ligament, may help encourage the

bulged disc to migrate centrally to its original position this relieving pressure on the annulus and nerve root.

- 2 One sided repetitive activities like golf or tennis can often pull the spine out of alignment. During inversion therapy, minor misalignments often correct themselves naturally.
- 3 Suggest inverting in the prone position, with a firm pillow under the abdomen to decrease the lumbar lordosis, as most painful discs protrude in a posterior direction to compromise the spinal ligaments and nerve roots. Lying prone whilst inverting would be more effective in reducing the posterior protrusion, and the patient has more confidence and control over the inversion table.

Methodology

- 1 Invert at 45 to 60 degrees from the horizontal for 5 to 10 mins for the first week – if uncomfortable return to the upright position.
- 2 Work – up to 15-20 mins once or twice daily and increase the angle of the inversion as you feel comfortable with to obtain pain relief.
- 3 20-40 degrees of inversion gives a mild stretching effect.
- 4 60-75 degrees of inversion should give all the benefits of decompression once relaxed. Most patients don't need to go beyond this angle.
- 5 90 degrees inversion would be patients with strong muscles and ligaments whom need heavier loads to decompress.
- 6 Appropriate mobilisation and stretching exercises should be conducted before and after inversion to promote relaxation and mobility. A secured hotpack in the prone position will further enhance relaxation.

Contraindications

- 1 Heart or circulatory disorders, HPB/ Hypertension (no strokes have been recorded in 17 years of inversion therapy).
- 2 Recent fractures, osteoporosis, total hip/knee replacements, spinal surgery.
- 3 Middle ear infections.
- 4 Hiatus hernia.
- 5 Eye conditions.
- 6 Pregnancy.

Conclusion: Inversion therapy is not for all back pain sufferers but it can help many whom suffer from intervertebral disc pathology, referred and back pain caused by spinal compression. I have found it an effective mode of treatment.

*Contact author: Robert Garrett, Chandler Macleod Health, Kokoda Barracks, Canungra 4219
Email: Robert.Garrett@optusnet.com.au*

Use of over-the-counter (OTC) medication and health supplement by Australian Defence Force Aircrew

Adrian Smith

Introduction: Anecdotal evidence suggests that a proportion of ADF aircrew use over-the-counter (OTC) medications without the knowledge of their aviation medical officer.

Method: A survey exploring the use of OTC medications by aircrew, and the reasons for self-medicating, was distributed to 177 aircrew attending AVMED. Results. 143 surveys were completed and returned. 77% of respondents reported using OTC medication within the previous twelve months, but only 14% disclosed the use to an AVMO. Similarly, 50% of respondents had used health supplements within the previous 12 months, but only 11% of these disclosed the use to an AVMO. The most common OTC medications used were paracetamol, cold and flu preparations, and non-steroidal anti-inflammatory agents; vitamins were the most common health supplements used by aircrew. 61% of respondents prefer to self-medicate rather than see an AVMO. Many of these (59%) self-medicate because they perceive the requirement to see an AVMO to be too time-consuming and cumbersome, especially for a condition they believe to be trivial and self-limiting (69%). Only 62% of respondents claim to be aware of the potential for OTC medications and health supplements to cause aeromedically-significant side effects, and only 19% of aircrew who use health supplements claim to know the side-effect

profile of the supplements they were taking.

Conclusions: Aircrew should be reminded of the potential dangers in using OTC medications. Aviation medical officers should be sensitive to the fact that many aircrew use OTC medications because they are afraid of being grounded, or because they believe access to an AVMO to be too time consuming.

*Contact author: Dr. Adrian Smith, RAAF Institute of Aviation Medicine, RAAF Base, Edinburgh, 5111
Email: adrian.smith14@defence.gov.au*

Popliteal nerve entrapment – an emerging cause of lower limb pain

Sam Hay

Diagnosis of exercise induced lower limb pain by the inexperienced practitioner is usually limited to tibial stress fractures, medial tibial stress syndrome (shin splints), or exertional compartment pressure syndrome. Resulting in similar symptoms, popliteal vessel entrapment is emerging as a hidden diagnosis for lower limb pain in exercising soldiers.

Improved knowledge and understanding by 1 HSB Sports Medicine staff, under the guidance of COL Delaney, has enabled more accurate diagnosis and management, providing improved treatment outcomes for soldiers who previously would have been discharged.

MAJ Hay will present an overview of exercise induced lower limb pain, centering on the clinical differences, investigation pathways, and management options for popliteal vessel entrapment. He will also provide comment on MEC implications for soldiers and trainees.

*Contact author: Sam Hay, MAJ, Australian Army, 11/24 Mount St, Coogee, Sydney 2034
Email: samhay@medemail.com.au*

Veterans Health III

Improved mental health and treatment options for hard to engage veterans

John Pead and Andrea Phelps

A significant number of people who have served in the Australian Defence Force (ADF) and currently have mental health problems still do not receive, or seek, mental health treatment. As a consequence, they risk enduring and sometimes life long social and mental

health disabilities. The Hard to Engage Veterans Initiative trialed strategies that address barriers to care, as a means of engaging more veterans and past defence force members with mental health treatment services. The trial was funded by the Department of Veterans Affairs and was undertaken in Barwon South-Western Region, Victoria. Three interventions were used to recruit veterans into mental health care.

Awareness and Media Campaign: Through targeted letters and the high profile mass media campaign potential participants received information about the availability of local mental health services for veterans and notice was given of four public meetings scheduled over the coming months.

Community 'town hall' meetings: Four monthly public meetings were conducted out-of-hours in local community venues. The meetings included presentations from mental health treatment providers, as well as from former ADF members and family members who have been, or are, engaged in mental health treatment. The meeting venue and presentations were designed to reduce the stigma of mental health problems and increase the accessibility and acceptability of local mental health services for veterans. Following each meeting, opportunities were provided for brief (10-15 min) individual counseling sessions with local mental health practitioners for the assessment of needs, advice on referral options and, where appropriate, arrangement of appointment times.

All those attending the community meetings were encouraged to leave their contact details to be followed up by mental health service providers. When enquiries were made by family members or other health practitioners concerning a target group member who did not attend the meeting, the permission of the family member or practitioner to use their name were sought as a means to contact the target group person directly.

Assertive provider outreach: Initial contact from a target group person, by a family member or a professional as a consequence of the awareness campaign could be made through a direct phone call to a service provider or by attendance at one of the four public meetings. In either case, a mental health practitioner provided assertive outreach in an attempt to engage that person in treatment. This means that the mental health practitioner:

- pro-actively contacted the person rather than waited for them to make contact;
- made at least three attempts to contact the individual by phone, email or written correspondence;
- was flexible in making arrangements to meet the individual at a convenient time and place;
- promoted engagement by offering information, advice, support and care that met the expressed needs and priorities of the individual. The number of veterans with mental health problems making contact for mental health care for the first time was measured together with the factors leading to their being engaged.

*Corresponding author: John Pead, Australian Centre Posttraumatic Mental Health, Level 1, 340 Albert Street, East Melbourne, Victoria 3002
Email: jpead@unimelb.edu.au*

The application of consumer driven research methods to the development of research priorities for the Middle East area of operations health study

Christopher Barton, Alexander McFarlane, Susan Treloar, Christine McClintock, Peter Nasveld, Michel Devine, Annette Dobson

Background: The Middle East Area of Operations (MEAO) Health Study is the next component of the Deployment Health Surveillance Program (DHSP) being undertaken by the Centre for Military and Veterans' Health. Consumer driven research methods have been incorporated into the development of the MEAO health study to establish research priorities, set specific research questions, and consolidate the design of the project.

Consumer participation in research is promoted in Australia by the National Health and Medical Research Council (NHMRC) who released a vision statement in 2005 stating: 'Consumers and researchers working in partnerships based on understanding, respect and shared commitment to research that will improve the health of human kind.' A number of objectives have been developed by the NHMRC around consumer participation in research including that 'the partnership of consumers and researchers will shape decisions about research priorities, specific research questions and design of research projects in a way that recognises and responds to the rights of all voices to be heard'.

This objective has guided the final stages of development of methods, procedures and tools for the MEAO health study.

Aims / Methods: Consumer engagement has included meetings with stakeholders, focus groups and piloting instruments and procedures with serving and ex-serving Defence Force personnel.

Stakeholder meetings targeting key Defence and Veteran stakeholders were conducted to gain feedback on the proposed study design and assessments, in addition to the ongoing input and support from Defence and DVA directly.

Focus groups were conducted with serving and ex-serving ADF personnel to complement the process already undertaken to select instruments for the study and assign priority to the assessments following a review of the literature and review of hazard assessment team (HAT) reports, experience of the

investigators, and the input of a Scientific Advisory Committee and the Defence Program Management Board who oversee the program.

Focus groups were the primary method used to engage current and ex-serving ADF members in the project and to understand the experiences and health concerns of MEAO veterans so that these could be mapped to the health and exposure questionnaire and to check the validity, relevance and priority of items to be assessed. Each focus group included discussion of health concerns, positive and negative aspects of deployment, experiences after returning from deployment, and strategies for recruitment to the study and the use of incentives.

The information generated from these processes was then used to enhance the draft questionnaire that will be piloted with consumers in early 2010 and provide an opportunity for comment on the relevance of items (are we asking the right questions) as well as the structure and format of the survey.

Conclusion: Increasingly policy makers and researchers are recognising the importance of consumer participation in research and this is a priority for the MEAO health study investigators. The approach has been used to establish research priorities, specific research questions and the design of the project. The approach used recognises and responds to the rights of all voices to be heard and values and encourages partnership with serving and ex-serving.

Corresponding author: Dr. Christopher Barton, Centre for Military and Veterans' Health, 122 Frome Street, Adelaide 5001 Email: christopher.barton@adelaide.edu.au

Lessons

Poison and drug absorption of the tympanic membrane: Mossad's lesson from Shakespeare and a potential bioterrorism mechanism

Peter Peters and Chris Perry

1599-1601 William Shakespeare writes his longest play, *"The Tragedy of Hamlet, Prince of Denmark"* or more commonly known as Hamlet. The story of *Hamlet* follows the murders and subsequent revenge set in the royal court. As one of the turning points of the storyline, Hamlet witnesses a ghost claiming to be Hamlet's father, King Hamlet, who claims to have been murdered by the King's brother, Claudius by pouring poison into the King's ear. The ghost demands that Hamlet revenge him.

1997 – two Israeli agents from Mossad, the Israeli

Smoking prevalence, its determinants and short term health implications in the Australian Defence Force

Christopher Barton, Annabel McGuire, Michael Waller, Susan Treloar, Christine McClintock, Alexander McFarlane, Catherine D'Este

The objectives of this study were to determine the prevalence of smoking, identify effects of deployment and risk factors for smoking, and determine short term health outcomes associated with smoking in Australian Defence Force (ADF) personnel. Participants were randomly sampled from ADF members who deployed to the Solomon Islands between 2003 and 2005 and from a non-deployed comparison group. In total, 435 of 995 (44%) eligible individuals completed the study questionnaires. The prevalence of current smoking was highest in those who had completed less formal education, and those who served in the Navy. Nearly two thirds (63%) of current or former smokers smoked more while on overseas deployment. Current smokers were more likely to report current wheeze, shortness of breath, and persistent cough compared with non-smokers. The ADF should continue to address cigarette smoking through its health promotion and health review programs and implement activities to reduce cigarette smoking on deployment.

Corresponding author: Dr. Christopher Barton, Centre for Military and Veterans' Health, 122 Frome Street, Adelaide 5001 Email: christopher.barton@adelaide.edu.au

Institute for Intelligence and Special Operations, posing as Canadian tourists attempt to assassinate Khaled Mashal by injecting a poison into Mashal's ear. At the time Mashal was considered to be the chief of Hamas in Jordan by the Israeli authorities. The Israelis had chosen an aural administration route so that Mashal would die over a period of days rather than during the confrontation with the would be assassins, and with an unknown drug, no trace and therefore antidote would be available. Whilst the drug was administered, the two Mossad agents were captured, and Mashal became critically ill. The attempt on Mashal's life triggered a diplomatic furor between Israel, the Palestinian authority, Hamas, Jordan, Canada and the United States with demands for the release of the antidote for what was initially

felt to be an unknown poison. The Israeli government later released the antidote following pressure from the United States President, Bill Clinton. The Mossad agents were eventually released to Israeli custody in exchange for the spiritual head of Hamas, Sheik Ahmed Yassin. The mechanism selected by Mossad, both the route of drug administration and the actual drug choice itself have raised concerns of the possibility of a bioterror weapon being unleashed with minimal evidence of administration being left behind.

Corresponding author: Dr Sub Lieutenant, Peter Peters, Naval Headquarters - South Queensland and Princess Alexandra Hospital, Email: peter2734@gmail.com

ILI outbreak on ex Talisman Saber

Rosemary Vandenberg

Ex Talisman Saber is a joint exercise held with US Forces at several locations throughout Australia including RAAF Darwin during the Australian winter/dry season. In 2009, an outbreak of Pandemic H1N109 (swine flu) occurred in addition to normal seasonal influenza A. The disease risk for the exercise was assessed as low. The risk of an influenza like illness (ILI) was included in the medical support plan and members were required to have seasonal influenza vaccine prior to deployment. All personnel were also required to do a rapid self assessment and report to a MO prior to deployment if they exhibited fever, sore throat or cough.

On RAAF Darwin, 567pers all ranks US Defense personnel (mostly Air Force but also some Marines) and a 370 pers all ranks RAAF augmentation/exercise participants, tripled the normal base dependency. In addition, RAAF Darwin was used as a staging point for several other sites manned for this exercise. 1485 pers used RAAF Darwin as a transit facility. All fixed accommodation including transit accommodation in "tin city" was used and in addition 3x50 man air conditioned tents were erected and portable ablution facilities provided for these. Non air conditioned tents were provided but these were not suitable for shift workers who were not used to Darwin temperatures. Transit accommodation was mostly used with two personnel to a room. The 50 man tents only just met the required 1 metre separation and definitely did not meet the recommended 1.5 metre social distancing recommended in influenza control documents.

Green canvas tents were rejected as unsuitable for shift personnel because of their lack of air conditioning.

White "50 man" tents were air conditioned.

While these tents were more comfortable, the atmosphere was quite humid and air flow was poor

due to towels and clothing being hung to dry inside the tent.

The arrangement of cots was altered after this initial photograph and central cots were aligned longitudinally in an attempt to increase the separation.

During the force preparation phase, it became apparent that USAF members accommodated in the tents were experiencing mild upper respiratory symptoms. Cases with significant fever were identified. Management of ill personnel with significant illness posed no problems. Members requiring nursing care were transferred to Robertson Barracks Medical Centre (RBMC). The problem lay with the large numbers of personnel in tentage. Members were not so unwell that they needed to be removed from duty and admitted to a low acuity facility, but leaving them in this high density accommodation was undesirable.

Most of the deployed USAF personnel were based at Kadena Air Base on Okinawa Japan. Okinawa did not have human to human transmission of pandemic H1N1 at the time that the members departed for ex Talisman Saber 09.

Initial remedial action: The initial assessment of accommodation was that increased social distancing was desirable. Access to hand washing needed to be improved and disposal bins for paper hand towels was required. Alcohol hand rub was provided to all food outlets and accommodation areas. Reinforcement of the need for frequent servicing by contractors was required.

Investigation of alternate accommodation for members with low grade symptoms was commenced. Options included additional tents to improve the spacing, using recreation areas as accommodation, using unoccupied married quarters as accommodation. Two unused married quarters were provided giving accommodation for 16 persons. Meals were made available and members were visited three times per day by medical staff. This did not address the issue of adequate separation in the tents but did remove the obviously infected. Members in the tents were instructed to sleep head to toe and to address the clutter in the tents to improve air flow (this did not happen).

USAF personnel in tent one referred to their accommodation as the Petri dish.

To make a more accurate assessment of the nature of the infection, a short viral swabbing study was commenced. We elected to swab those with symptoms and a fever > 38 degrees. The laboratory facilities were stretched by the number of swabs being taken in the general population, so a decision was made to do one nasal swab only (in retrospect, this may have

been inadequate to define the problem). In all six swabs were taken. Four were positive for pandemic H1N109, one result was equivocal for influenza A and sub-typing was not performed by the laboratory and one was negative. Given that 80% of ILI in Darwin at this time was pandemic H1N109 and the cluster of presentations, it is probable that all presentations were pandemic H1N1.

The use of rapid assessment kits was discussed. Some deployed US units had these kits, but these were not available on RAAF Darwin and could not be obtained before the end of the exercise. The role of using Tami flu for acute illness was discussed as a means to get the unwell back to work earlier, but this was rejected as unnecessary.

Outcomes: 14 USAF personnel presented with a symptom complex that complied with the definitions for pandemic H1N1. An additional 14 USAF personnel presented with upper respiratory illness without fever or fever insufficient to include

Contact author: Dr. Rosemary Vandenberg, RAAF, Unit 4, 7 Beachcomber Place, Point Cook 3030
Email: rosemary.vandenberg@defence.gov.au

Lessons learnt: integrated AME in Southern Afghanistan

Sam Hay

MAJ Hay will explore the challenges and lessons learnt: issues of integrated training, communications, personal security, and medical procedures and protocols. To illustrate the success of the mission, MAJ Hay will explore a summary of completed missions.

Contact author: MAJ Sam Hay, Australian Army, 11/24 Mount St, Coogee, Sydney 2034
Email: samhay@medemail.com.au

Preparing for trauma or disaster support as civilian organisation in a military environment

James Ross

Across the world Military forces are outsourcing varying degrees of their medical services to commercial organisations. Usually these services are for standard, run-of-the-mill healthcare services, but they contain the requirement for the ability to respond to disasters and trauma, be it within scope or due to an extraordinary event. This can involve ongoing health support or a surge capacity to respond to operational contingencies or natural disasters.

Many factors have to be addressed to ensure a high quality service by a civilian provider in a military environment:

- Recruitment
- Credentialing
- Skills maintenance
- Quality assurance
- Security
- Risk management
- Mission integration
- Cultural alignment
- Support for local population
- Command and Control

This presentation will provide an insight into how a commercial contractor provides trauma or disaster support services in an operational or benign environment utilising civilians in a safe manner and as part of the broad delivery of support to outsourced healthcare.

These situations could include:

Non-operational environment

- Emergencies on a military training range
- Local disaster (Manmade or natural)
- Pandemic
- Loss of civilian healthcare services

Operational Environment

- Significant aircraft, vehicle or maritime accident
- enemy attack

Contact author: Dr. James Ross, Aspen Medical, 17C, 2 King St, Deakin 2600 Email: jross@aspenmedical.com.au

Videolaryngoscopy – the end of the classic laryngoscope

André van Zundert

Securing a patent airway in patients undergoing general anaesthesia is routinely performed using direct laryngoscopy with a Macintosh laryngoscope blade. However, successive intubation attempt to pass the vocal cords can have a tremendous impact on patient outcome. A good laryngeal view is often a prerequisite, if not a guarantee, for successful intubation.

There are numerous difficulties associated with intubation which can have an important effect on patient morbidity or mortality such as:

- 1 Difficult laryngoscopy (obtaining a non-optimal view of the glottis entrance or no view of the vocal cords at all);

2 Difficult intubation (for which extra tools, such as a gum elastic bougie, stylet, Bonfils, Trachlight, fibre-optic intubation, intubating laryngeal mask, are required); and

3 Failed intubation.

Previously the paradigm for safe intubation has been built on the foundations of adequate preoperative measurement of a patient's airway. The plethora of metrics for intubation difficulty (ie., Mallampati, Cormack Lehane grade, BMI, mouth opening, dentition, thyromental or sternomental distances, protruding teeth, overbite, limited neck movement, are, however, usually very disappointing in predicting difficult cases of intubation. Preoperative metrics that indicate a difficult airway are not necessarily correct, while patients deemed to have 'normal' airways are not precluded from possibly difficult intubations. Therefore, the ubiquitous assessment of preoperative metrics of a potentially difficult airway by anaesthesiologists, is incomplete at best, but, furthermore, less relevant regarding videolaryngoscopy.

The recent introduction of videolaryngoscopes incorporating optics in the tip of the intubation blade has proven advantageous qua improved viewing of the glottis (Fig.1-2). Further, it is assumed in literature that there are fewer traumas to the patient, with faster intubation times, even in problematic cases (Table 1). Since videolaryngoscopy facilitates indirect vision of the vocal cords, and it is no longer required to visualize the glottic entrance directly, less force is needed to lift the jaw. This has the advantage that fewer forces are exerted on the maxillary incisors, relative to classical direct laryngoscopy, irrespective of anaesthesiologist experience, patient characteristics, or common metrics of intubation difficulty. This potentially results in less trauma to teeth during intubation.

Videolaryngoscopes are potentially superior even for easier patients, but are most beneficial for use with difficult-to-intubate patients (1-3). Especially in patients where preoperative metrics do not indicate a difficult airway and the anaesthesiologist is confronted with an unexpectedly difficult intubation the videolaryngoscope can be superior to direct classic

laryngoscopy. Several examples of difficult airways will be given, where the videolaryngoscope proves its superiority over classic direct laryngoscopy.

Despite the clear advantages over classic direct laryngoscopy, there are differences in patient outcome between the commercially available videolaryngoscopes, differences exist (e.g. successful intubation, first pass success, intubation time, use of extra tools) between the different devices. To overcome certain deficits certain manufacturers advocate using a styletted endotracheal tube, which may in itself have disadvantages. Further studies should investigate strategies for optimising the ergonomic design of the blades for videolaryngoscopes. The integration of the videolaryngoscope blade and endotracheal tube geometry is the most pressing point for further development.

Conclusion: Successful laryngoscopy and subsequent intubation depends on the patient's characteristics and position during intubation, the intubator's skills, the technique used and the intubation tools. Besides placing the patient in an optimal position, we cannot change the patient's anatomy. The plethora of methods to predict difficult intubation conditions yield inclusive results. We, therefore, should focus our attention to technical or procedural improvements, especially the design of better laryngoscopes. Indirect videolaryngoscopy is one such improvement, as it offers a better viewpoint of the glottic entrance, often unachievable with direct classical techniques. Videolaryngoscopy is shown to have promising features. We believe that videolaryngoscopy will become standard for all intubations, not only those predicted to be 'difficult'. Consequently, the 'Difficult Airway Algorithm' guidelines have to be adjusted according to the development of the introduction of new tools in our practice, such as videolaryngoscopy.

Contact author: André van Zundert

Afghanistan the latest experience – where to from here?

Did you get what I said?, Experiences of Role 2E,
Tarin Kowt, Afghanistan

Connie Jongeneel

The role 2E is an amazing place to work. The Dutch are the main lead, the Australians and Singaporeans

provide intermittent specialist support and our clients are predominantly Afghan nationals. How does the recipe for best care to the patient be developed, implemented and understood by all when English is the second language for the majority of staff and our cultures and ideas vary. This presentation looks

at the life at Role 2E and how does it manage within a multi-language, multi-cultural and multi-tasking environment.

*Contact author: MAJ Connie Jongeneel, 3rd Health Support Battalion, Keswick Barracks, Keswick 5035
Email: connie.jongeneel@gmail.com*

Clinical experience and lessons learnt AUSMTF 4 *Toby Thomas*

AUSMTF 4, a surgical team from 3 HSB, was embedded in the Dutch NATO Role 2E hospital and deployed to Afghanistan for 10 weeks in the third quarter of 2009. During this time they treated a large number of severely injured battle casualties with the figures for resuscitation, surgery and ICU exceeding all previous Dutch and Australian surgical teams.

Most of the combat related injuries were orthopaedic – especially of the lower limb. Common methods of injury including improvised explosive devices (IED), suicide devices, rocket propelled grenade (RPG) attacks and gunshot wounds. Multiple casualties were the norm and mass casualty events were common.

The talk will outline the lessons learnt which have been divided into resuscitation, surgical, anaesthesia and orthopaedic lessons. The lessons were a confirmation of the US and UK experience in both Iraq and Afghanistan which has been published extensively in the trauma, surgical and critical care literature.

Contact author: Toby Thomas

Are we ready yet?, Force Prep of AUSMTF 4 for the Role 2E, *Tarin Kowt*

Connie Jongeneel

The world of health care delivery has and continues to rapidly change. The ADF's response to this rapidly changing environment is to ensure the health care professional is prepared for operational deployment to meet the needs of their skill craft. This presentation explores the journey taken by AUSMTF 4 to ensure all members of the team were appropriately skilled to undertake the task of Specialist Team in Role 2E, TK.

*Contact author: MAJ Connie Jongeneel, 3rd Health Support Battalion, Keswick Barracks, Keswick 5035
Email: connie.jongeneel@gmail.com*

3 HSB road from excellent centre for training to training centre of excellence

Stanley Papastamatis

3 HSB has had an interesting journey in its road of discovery and what it will deliver as capability from this day forward.

Briefly, the 3rd Health Support Battalion was formed in 1960 as 3rd General Hospital at Keswick Barracks from the disbanded 104th Military Hospital. It was relocated to Warradale Barracks, SA and reclassified as a training hospital in 1965, predominantly as a holding hospital for Medical Officers. In April 1983 it was reformed as a separate unit with its own administrative and training responsibilities. It was the only Forward General Hospital on the order of battle and on 16th September 1989 the unit relocated to its current location in Building One, Keswick Barracks.

Since its conversion from 3 FGH in 2000, 3 HSB has undergone a continuing roles and tasks change effectively duplicating 1 and 2 HSB in a reserve environment but under a full-time construct. Since its return from East Timor in 2001, the self realisation within Army and wider ADF that its health specialist capability exists within the reserve has resulted in 3 HSB evolving from the third HSB, to a unit which fosters its specialists training in a positive and reinforcing environment. The template applied via the Mission Essential Health Training (MEHT), was used to good effect in the preparation of the almost exclusively specialist reservist AUSMTF-4 deployment to Afghanistan. This evolving change in training of health delivery to a centre of excellence for training has now been ratified with the strategic health review occurring within Army and finally being signed off just before AMMA by the Chief of Army on the 2nd OCT 2009.

The re-rolling of all the HSB's will result in a more effective health delivery model under the Adaptive Army Construct and in line with CJHLTH strategic vision for Defence Health. 3 HSB will be ideally positioned to support this into the future.

*Contact author: LTCOL Stanley Papastamatis, Australian Army, HQ 9 BDE, Anzac Highway, BLDG 196, Keswick Barracks, Keswick 5035
Email: stan.papastamatis@defence.gov.au*

Overview



Pictured left to right: Professor Alexander McFarlane (CMVH), MAJGEN Rosenfeld (SGADF-Res), His Excellency the Governor of South Australia RADM Kevin Scarce Patron of Foundation Daw Park and PTE Liam Haven who was the invited guest. PTE Haven was injured as a result of a blast injury in the Middle East and has significant blindness.

Foundation Daw Park hosts Inaugural South Australian Defence and Veterans Health Research Paper Day. Foundation Daw Park, established in the 1990's by Veterans, conducted its Inaugural South Australian Defence and Veterans Health Research Paper Day on Saturday 18 July 2009 at Repatriation General Hospital, Daw Park, South Australia

The event represented a unique collaboration between the Foundation, Repatriation General Hospital, the three South Australian universities, the Centre Military and Veterans Health (CMVH), the Defence Science and Technology Organisation, the Aviation Medicine Institute and the Veterans' Health Advisory Council.

His Excellency Rear Admiral Kevin Scarce AC CSC RANR, Governor of South Australia and Patron of the Foundation attended and formally opened the event. Major General Jeffrey Rosenfeld, Surgeon General-Defence Health Reserves, and Private Liam Haven, a young Middle East Veteran injured by an improvised explosive device in Iraq, also attended and participated.

The Scientific Committee contributing to the structure of the program and the evaluation of the papers presented on the day comprised:

- Chair: A/Prof Susan Neuhaus CSC, Clinical Associate Professor, University of Adelaide, Colonel RAAMC
- Dr John Costi, Chair Research Management Committee, Repatriation General Hospital
- Professor Alexander McFarlane, Head, Centre for Military and Veteran Health, Adelaide University Node, Group Captain, RAAF

Some of South Australia's leading researchers presented on their research projects. The two presenters delivering the *Best Scientific Paper* and the *Best Defence and Veteran Health Paper*, were each awarded \$1,000. The awards were sponsored by Veterans SA.

Endocrinologist Dr Morton Burt presented diabetes screening research which was judged as the *Best Scientific Paper*, and research presented by Dr Dan Billing from the Defence Science and Technology Organisation (DSTO) was awarded the *Best Defence and Veteran Health Paper*.

Next year's event will be held Saturday, 17th July 2010. Advance Notice and details of the event will be distributed early February 2010.

For further information about Foundation Daw Park visit their website: www.foundationdawpark.org.au.

Patrons:

His Excellency Rear Admiral
Kevin Scarce AC CSC RANR
Governor of South Australia
Sir Donald Dunstan AC KBE CB
Mr Graham Cornes

Foundation Daw Park Inc.
C/- Repatriation General Hospital
Daws Road, Daw Park, SA 5041
T: (08) 8275 1039
F: (08) 8277 9401
www.foundationdawpark.org.au
ABN: 48 079 836 837

Abstracts

Health Surveillance in the 21st Century:
An Integrated Approach to the Assessment of
Health and the Maintenance of Performance in
the ADF

Prof Alexander MacFarlane

Purpose: Previously, major epidemiological studies have been done of Australian veterans when expressed concerns emerged within the veterans' community about the impact of exposures during a deployment. These include the Gulf War Veterans' Study, The Korean Veterans' Study, and the Study of the Psychological Outcomes of Vietnam Veterans. Since 2002, there has been an active program of perspective surveillance of serving veterans. The studies of the near north deployments, the Solomon Islands, Bougainville, and East Timor have now been completed. The Centre for Military and Veterans' Health is about to commence the studies of the Middle East Area of Operations.

Methods and Outcomes: The Middle East study will have two components. The first will be a census study looking at the 23,000 members who have deployed to the Middle East. This will attempt to identify whether particular exposures are associated with either adverse mental health or physical outcomes. Background information from the studies that have already been published from the US, UK, and Dutch cohorts will be presented. A second body of research will examine the force formations that are prospectively going to be deployed to the Middle East. This provides a unique opportunity to make comparisons within an individual in terms of dimensional biological systems such as inflammatory mediators, immunological reactivity, and lipid metabolism. There is now a significant body of research which suggests there are significant common diatheses that underpin both the physical and psychological morbidity associated with exposure to combat environments. A better understanding of these underlying mechanisms will allow the maintenance of the health and performance of serving ADF personnel.

Conclusion: Health surveillance of troops has now moved simply beyond identifying substantial patterns of morbidity amongst individuals who have deployed. The aim is now to commence the surveillance of serving personnel so as to identify early shifts in morbidity so that preventative interventions can be taken prior to the emergence of disease.

*Contact author: Prof Alexander MacFarlane Centre for
Military and Veterans' Health - Adelaide University node
Email: alexander.mcfarlane@adelaide.edu.au*

Management of Prostate Cancer - A Major Health
Care Dilemma!

S Chopra, C Pinnock, D Tamblyn, T Kopsaftis, A Stapleton

Purpose: Prostate cancer is now the most common cancer diagnosis in men and the second most common cause of cancer death. Nevertheless ongoing controversies about testing and treatment have created confusion amongst both patients and clinicians about optimal care. In addition, increasing pressure on the health system means that the timeliness of care once tested and diagnosed may be compromised. Prostate cancer is curable by surgery or radiotherapy only if detected while still contained to the gland. Such treatment extends survival in men to a life expectancy of ≥ 10 years. We undertook a retrospective analysis of intervals between points of care and associated PSA changes prior to diagnosis amongst patients attending a South Australian public hospital in order to ascertain the timing of investigations prior to diagnosis with prostate cancer and whether short-term testing was associated with evidence of progression.

Method: We identified 241 patients referred between 1998 and 2006 with a primary care referral because of an elevated PSA result ($>4\text{ng/ml}$) and no previous prostate biopsy. PSA results and intervals between PSA testing, specialist clinic referral, appointment and biopsy were stratified by age at diagnosis: less than 75 yrs (group A) and 75 or more years (group B). The Repatriation General Hospital Research and Ethics Committee provided ethical approval.

Results: Median times between first abnormal PSA, referral, consultation and biopsy were modest (see Table), nevertheless associated with progressive increases in PSA at each point of care. Extended delays (>20 months) between first abnormal PSA and referral occurred in 25% younger men. In 18% younger men these carried a high risk of progression to extra-prostatic disease. Decisions to delay referral were associated with a PSA $< 10\text{ng/ml}$.

Table: Duration between Points of Care and PSA values

Duration between points of care (months)	Group A : < 75 years, Median (IQ range), N=121	Group B: >=75 years, Median (IQ range), N=120
First PSA to Referral	5.1 (0.5 – 34.0)	11.3 (0.6 – 41.9)
First abnormal PSA to referral	1.15 (0.29 – 20.3)	1.87 (0.4 – 28.3)
First abnormal PSA to biopsy	3.75 (1.9 – 20.4)	9.5 (2.7 – 35.3)
First abnormal PSA to treatment	5.79 (3.53 – 24.6)	18.93 (4.4 – 40.4)
Referral to OPD	1.18 (0.6 – 2.0)	1.57 (0.6 – 2.7)
Referral to Biopsy	1.81 (0.9 – 3.5)	2.42 (1.0 – 4.3)
Biopsy to Treatment	1.96 (1.1 – 3.4)	1.55 (0.3 – 4.7)

Conclusion: The study shows extended delays for a proportion of men in the Southern region with associated PSA rises that may compromise outcomes because of extra-prostatic spread. The findings have considerable implications for our centre, being the regional centre for Veterans Health in South Australia. Delays in the clinic-to treatment interval are assumed to be a reflection of the general workload and waiting list management problems at our centre. If the PSA test is used, then prompt follow up is needed to achieve the purpose of the test. If there is uncertainty about the timing of referral, the patient should be informed of the potential risks of delaying further investigations.

Corresponding author: S Chopra, Repatriation General Hospital Email: : Doctor_chopra@yahoo.com

Investigation of Driving Performance in Obstructive Sleep Apnoea Patients

Andrew Vakulin, S Baulk, P Catcheside, N Antic, C vanden Heuvel, J Dorrian, R McEvoy

Purpose: Obstructive sleep apnoea (OSA) is a common condition with a 2-7 fold increased risk of a motor vehicle accident (MVA). Under monotonous driving conditions, sleep restriction and alcohol negatively affect driving performance in healthy subjects however the impact of these stressors on OSA patients is unclear. In addition, it is unclear whether driving impairment in OSA patients exists during short metropolitan driving situations and what are the common errors experienced by patients during metropolitan driving. To address these questions, we have designed two studies, first involving a monotonous driving simulation task to assess the effects of sleep restriction and alcohol on OSA patients and the second study involves comparing real on-road driving performance in OSA patients and controls to determine any differences in relatively short metropolitan driving. We hypothesized that

compared to controls, OSA patients would be more affected by additional sleep restriction and alcohol during monotonous driving simulator conditions and would show a greater frequency of minor errors during an on-road metropolitan driving test, but would not differ in occurrence of major errors and overall driving performance score.

Methods: 38 OSA patients and 20 controls underwent 90 minute driving simulator tests under 3 randomised conditions of normal sleep (NS), sleep restriction (SR) and alcohol (ALC). At this stage 6 OSA patients and 14 controls underwent 45 minute on-road driving tests under normal sleep conditions only assessed by a Transport SA accredited driving instructor who assessed driving using a log book approach. The instructor assessed an overall pass or fail of the test as well as minor errors (e.g. late signals, mirror checking late braking), major errors (e.g. collisions) and law infringements (e.g. ignoring road signs, running red lights).

Results: Compared to controls OSA patients were more affected by sleep restriction with greater steering deviation (P=0.01) and higher crash rate (p<0.01) during monotonous driving simulator tests. Alcohol also increased crash rate in OSA patients (p<0.01) compared to controls. During the on-road driving experiments, no significant differences in pass/fail rates, minor errors, major errors and law infringements between OSA patients and healthy controls were observed at this stage.

Conclusions: The first study shows that OSA patients are more vulnerable to additional sleep restriction and alcohol compared to controls and has important clinical implications. Warning OSA patients about the hazards of further sleep loss and alcohol prior to long distance driving is warranted. Thus far it seems that metropolitan driving is not different between OSA patients and healthy controls in respect to minor errors, major errors or law infringements. This study is ongoing and recruitment of more OSA patients is necessary to confirm current observations. At this point we can speculate that OSA patient are able to adequately deal with driving in metropolitan areas, where the demand for divided attention and the need for multitasking is much greater than monotonous country driving.

We gratefully acknowledge Foundation Daw Park for their generosity in helping to fund this research, also the NH&MRC, Mitcham driving school and the AusEd driving simulator developers.

Corresponding author: Andrew Vakulin, Adelaide Institute for Sleep Health, RGH Email: andrew.vakulin@health.sa.gov.au

The Impact of Sea State on Functional Survival Time of Military Aircrew Immersed in Cold Water

Adrian Smith

Purpose: Survival time in heavy sea states is known to be less than survival in water of the same temperature in calmer water. As well as increasing the risk of drowning, heavy sea states distort the watertight seals on immersion suits and allow ingress of water which reduces the effective insulation of underlying thermal garments, leading to the development of hypothermia. On the other hand, wearing excessive insulation under an immersion suit can increase the thermal burden and reduce the performance of aircrew during normal flight operations. It is important to evaluate the impact of sea state on estimated survival time of military aircrew who have ditched into cold water, in order to guide pre-flight planning, selection of appropriate immersion ensemble for the conditions, and provision of an adequate search-and-rescue response.

Methods: Simulated immersion scenarios were entered into a cold-exposure survival model software to generate predicted functional survival times for immersion in water temperatures between 0°C and 20°C for the following variables: sea state (light, heavy), immersion suit ensemble (with light, medium, and heavy undergarments), gender, and build (very light and medium build, equivalent to 10th and 50th percentile male weight).

Results: Heavy sea states reduced functional survival time by approximately 30% when the immersion suit remained watertight; however, ingress of water into the immersion suit reduced functional survival time by as much as 85%. Survival time for female and very thin aircrew in light and heavy sea states was approximately 30% lower than that for a medium-build male.

Conclusions: Survival time in cold water is significantly lower in heavy sea states than in calm water, more so for female and very thin aircrew. Software modeling of cold-water survival provides military aircrew flying over cold water with a gender-and build-specific estimate of survival time that predicts survival more accurately than a generic table. As a result, aircrew can select a level of immersion protection that is appropriate for personal factors, water temperature and sea state, and the likely search-and-rescue time, without causing undue heat stress.

Contact author: Dr. Adrian Smith, RAAF Institute of Aviation Medicine, RAAF Base, Edinburgh 5111
Email: Adrian.smith14@defence.gov.au

Aircraft and Aircrew Anthropometry using Laser Scanning & Computer Modelling

Bhupinder Singh

Introduction: Australian Defence Force aircrew are recruited to meet specific anthropometric standards in terms of their stature, sitting height, buttock-knee and buttock-heel length to ensure that they are able to be accommodated in the cockpit and perform various aircrew tasks efficiently and safely. Although each aircraft type has specific limitations in terms of the size of aircrew that can be accommodated therein, the ADF recruitment standards are based on the most limiting of the platforms that aircrew would be required to operate during the course of their careers. There is a need to update those standards periodically and to ensure that they are based on the current fleet of ADF aircraft, especially as newer aircraft are inducted into service. ADF acquires aircraft that are designed and built almost exclusively overseas, and are based on the body dimensions of the populations of UK and USA. To determine the proportion of ADF aircrew that would fit in the current and newly acquired aircraft, a detailed and updated database of the anthropometric measurements of the ADF aircrew population is required. During the last three to four decades, the Australian population has grown bigger and heavier and there are now many women aircrew in the ADF. The traditional method of obtaining measurements of aircraft cockpits/cabins and aircrew body dimensions involved the use of physical methods like tape measures and calipers. Such methods, while still valid, are cumbersome and time consuming. The advent of LASER scanners and modelling software has made the task of obtaining measurements and determining man-machine interface much faster, and more efficient.

Purpose: To obtain accommodation information of cockpits of ADF aircraft, and body sizing information of ADF aircrew using laser scanning technology in order to achieve optimum man-machine interface and help develop anthropometric standards for the recruitment of ADF aircrew.

Methods: Cockpits of all major ADF aircraft were laser scanned to construct a computer model of each cockpit. Samples of ADF aircrew population and potential recruit population were subjected to whole-body laser scanning to construct a computer model of each aircrew member. The cockpit and aircrew models are being used to determine aircrew-aircraft compatibility for optimum performance and safety, and help develop aircrew recruitment standards. The presentation discusses the technology and the status of the ongoing project.

Contact author: Bhupinder Singh, RAAF Institute of Aviation Medicine Email: bhupinder.singh@defence.gov.au

Effort Perception and Aerobic Capacity in Specialised Military Fitness Assessment

Eugene Aidman, R Cramer

Exercisers can detect first signs of perceived exertion (Borg, 1973, 1982). The proportion of exercise time after this detection has been shown to be relatively stable (Ilyin, 1980; Aidman 1986) and individually distinct. This proportion was termed “mental effort ratio” (MER) and a psychometric procedure for its measurement has been developed using a modified hypoxemic (breath-holding) test (Aidman, 1995, 2005). The paper will present a series of studies with elite endurance athletes (Aidman, 1995, 2005; Miotti, 1996) and military personnel (Aidman & Cramer, 2006) that examined the relationship between MER, endurance performance and health costs associated with it. In particular, Aidman & Cramer, (2006) examined the relationship between MER and aerobic capacity in a group of 82 Army officers who undertook physical fitness assessment in order to join a Special Forces regiment. As part of this comprehensive and challenging assessment, aerobic capacity was estimated during a standard 2.4 km road run. All participants wore a Polar heart rate monitor and their

HR dynamics were captured. VO₂max estimates were derived from these data. MER testing preceded the 2.4 km run and involved a standard sequence of practice trials (Aidman, 2005) to establish the discomfort threshold, followed by an all-out trial, in which this breath-holding threshold was measured as a split-time. MER values ranged from below 40% (known as “mental sprinter” type) through high range of above 65% (known as “mental stayer” type). MER significantly correlated with the time of the 2.4 km run ($r = -.23$, $p < .04$), but more importantly – with VO₂ estimates ($r = .31$, $p < .005$). Results confirm the validity of MER in estimating aerobic capacity at the high end of fitness range. It is also useful in estimating health risks of endurance training, such as metabolic inefficiency, overtraining and burnout. This makes it an attractive practical addition to assessment protocols used for selection into military and other physically demanding occupations.

*Corresponding author: Eugene Aidman,
Defence, Science and Technology Organisation
Email: Eugene.Aidman@dsto.defence.gov.au*

References

- 1 Aidman, E.V. (2005). Measuring Subjective Components of Fatigue: the Role of Effort Perception. In T. Morris, P. Terry, S. Gordon, S. Hanrahan, L. Ievleva, G. Kolt, & P. Tremayne. (Eds.), *Promoting Health and Performance for Life: Proceedings of the ISSP 11th World Congress of Sport Psychology*. Sydney: International Society of Sport Psychology.
- 2 Aidman, E. V. (1995). Perception of Effort in the Prediction of Anaerobic Threshold and Health Risks of Endurance Training. In: Hawkins, K. & Nastasi, R. (Eds.) *Viewing the Year 2000*. (pp. 390 -400). Wisconsin: W. C. Brown & Benchmark.
- 3 Aidman, E.V., & Cramer, R. (2006). Effort Perception and Aerobic Capacity in Specialised Military Fitness Assessment. Paper presented at 2006 SMA Conference, October 2006.
- 4 Borg, G. (1973). Perceived exertion. A note on history and methods. *Medicine & Science in Sports*, 5, 90-93.
- 5 Borg, G. (1982). Psychophysical basis of sports and exercise. *Medicine and Science in Sports and Exercise*, 14, 371-381.
- 6 Ilyin E.P. (1980). *Psychophysiology of sport and physical education*. Moscow: Physical Culture & Sport.

Development of All-Corps Soldier (ACS) Physical Employment Standards (PES) for the Australian Army

Daniel Billing, A Laing, R Attwells, D Ham, M Jaffrey, A Fogarty

Purpose:

As directed by Director Army Health (DAH), the Human Protection and Performance Division (HPPD) of DSTO have developed scientifically valid and defensible Physical Employment Standards (PES) for the Australian Army All Corps Soldier (ACS). ACS PES allow a soldier's physical capabilities to be measured, documented,

and evaluated via a standardised physical testing procedure and compared with physical exposures that are required to perform critical ACS tasks.

Methods: Tasks, identified as being both physically demanding, critical and common to all soldiers regardless of trade classification, rank, age, or gender, were first identified. Tasks were then observed and quantified under simulated operational conditions. A number of scientific measures were collected during field observations. Heart rate and metabolic cost were measured to quantify the physiological response. Global positioning system (GPS) data were collected to quantify task characteristics (location, route, distance, speed,

altitude, barometric pressure, air temperature, time to task completion and work-rest ratios). Furthermore, sensory perception (rating of perceived exhaustion and discomfort) was assessed and cognitive demands were documented. All this information was cross referenced to time-in-motion analysis to add context to the quantitative and qualitative data gathered. The key physical capacities required in the performance of the physical demanding tasks were then identified and a benchmark or criterion task (i.e. most physically demanding) for each physical capacity was determined. In undertaking the above research process 125 soldiers (95 males, 30 females, average age of 25.8 ± 6.1 y, range 18-47) have been involved in this study with broad representation across Corps (RAInf-21, RACT-30, RAA-3, AACC-6, RAAOC-40, RAE-2, RAAMC-11, AIC-1, RAEME-11) and rank (PTE-89, GNR-3, SPR-1, CFN-7, LCPL-8, CPL-8, SGT-3, WO2-1, LT-2, CAPT-3).

Results: The most important physical capacities for the performance of ACS tasks were identified as aerobic power, anaerobic power, muscular endurance and muscular strength. Accordingly, four assessments were developed based on the criterion or benchmark physically demanding task for each physical capacity identified above, including:

- Aerobic Power: Forced March (FM) Assessment
- Anaerobic Power: Break Contact Drill (BCD) Assessment
- Muscular Endurance; Lift and Carry (LC) Assessment
- Muscular Strength: Box Lift and Place (BLP) Assessment The assessments are designed to use movement patterns, muscle groups and energy systems relevant to the performance of ACS tasks. As a collective, the four assessments provide full coverage of the important physical capacities required for military service as an ACS.

Conclusions: The implementation of ACS PES will ensure that all Australian Army personnel have the physical capacity commensurate with the performance of critical tasks. Failure to meet the ACS PES to a minimum acceptable standard may place the individual, their colleagues, and ultimately the full complement of personnel at risk in an operational scenario. Objective and valid ACS PES can be broadly applied to achieve the following objectives:

- Ensure soldiers are physically hardened against the rigors of both their ACS occupational requirements (employable requirement) and modern close combat (deployable requirement).
- Mechanism to recruit, train and retain capable personnel for specific occupations and roles through a systematic approach to managing human resources.

- Improve the ability of commanders to satisfy their duty-of-care requirements and subsequently enhance force preservation.
- Reduce ADF health care and compensation costs (through a reduction in trade-related injuries)

*Corresponding author: Daniel Billing, Defence, Science and Technology Organisation
Email: daniel.billing@dsto.defence.gov.au*

Should third molars be removed prior to deployment?

J F Scott

Since the 1990s, the Australian Defence Force has been sending troops overseas on Peace Keeping and Peace Monitoring missions and more recently on combat missions. Prior to these deployments, it is recommended that members have any partially erupted third molar (wisdom) teeth removed. In the current Defence climate of cost containment, now more than ever, this policy is being challenged as mostly the surgery needs to be performed by specialists on a fee for service basis.

This paper will examine the rationale behind this decision to remove third molars and compare it with the current Defence Health Directives on third molars. It will also examine more recent literature on the long term gingival health surrounding third molars which may have implications for the long term health of the Veteran community.

Many Defence members deploying overseas are in the age group where impacted third molars are likely to cause a problem (18-25). Many factors that are known to increase the incidence of pericoronitis are present in a hostile environment (stress, lack of time for oral hygiene, increased incidence of smoking etc.) and given that definitive dental care may not be available locally, it seems that the recommendations are prudent.

These factors will be examined, together with the dental casualty rates of ongoing overseas deployments.

Recommendations will be made for dental deployment advice for any future overseas or remote area deployment.

Contact author: J F Scott, Veterans Health Advisory Council, South Australia Email: JFScott@adam.com.au

Engaging stakeholders in systems design - The Flinders chroniccare self management program for Vietnam veterans with alcohol-related conditions & PTSD

Dr Jill Beattie & Professor John Condon

Purpose:

1) To investigate the efficacy of the clinical application of the Flinders Model of chronic condition self-management care planning on the alcohol, psychosocial and quality of life outcomes of Vietnam veterans with alcohol-related chronic conditions. 2) To investigate the health economic effects of the use of the Flinders model of chronic condition self-management in veterans with alcohol related chronic conditions. 3) To investigate the use of the Flinders model to improve the coordination of care with the aim of placing the veteran at the centre of care, linked effectively with their hospital, community, specialist and primary care services. This paper will present the process used to address the third aim of the study.

Methods:

1) RCT -Implementation & evaluation of the Flinders Program of chronic condition self management care planning – FP versus usual care 2) Quality improvement/Systems design: A series of plan-do-study-act cycles

Summary of results: The PDSA cycles and the evaluation methods used in each will be reported. Participation in systems design processes can be a challenge for busy practitioners and health services and yet their participation is vital.

*Corresponding author: Dr Jill Beattie,
Email: jbeatti@bigpond.net.au*

Minimal Brain Injury – The signature injury of current operations

*Professor (MAJGEN) Jeffrey Rosenfeld
Email: j.rosenfeld@alfred.org.au*

The application of consumer driven research methods to the development of research priorities for the Middle East Area of Operations Health Study

*C Barton, A McFarlane, S Treloar, C McClintock, P Nasveld
M Devine, A Dobson*

Purpose: The Middle East Area of Operations (MEAO) Health Study is the next component of the Deployment Health Surveillance Program (DHSP) being undertaken by the Centre for Military and Veterans Health. Consumer driven research methods have been incorporated into the development of the

MEAO health study to establish research priorities, set specific research questions, and consolidate the design of the project. Consumer participation in research is promoted in Australia by the National Health and Medical Research Council (NHMRC) who released a vision statement in 2005 stating: 'Consumers and researchers working in partnerships based on understanding, respect and shared commitment to research that will improve the health of human kind.' A number of objectives have been developed by the NHMRC around consumer participation in research including that 'the partnership of consumers and researchers will shape decisions about research priorities, specific research questions and design of research projects in a way that recognises and responds to the rights of all voices to be heard'. This objective has guided the final stages of development of methods, procedures and tools for the MEAO health study.

Method and Outcomes: Consumer engagement has included meetings with stakeholders, focus groups and piloting instruments and procedures with serving and ex-serving defence force personnel. Stakeholder meetings targeting key Defence and Veteran stakeholders were conducted to gain feedback on the proposed study design and assessments, in addition to the ongoing input and support from Defence and DVA directly. Focus groups were conducted with serving and ex-serving ADF personnel to complement the process already undertaken to select instruments for the study and assign priority to the assessments following a review of the literature and review of hazard assessment team (HAT) reports, experience of the investigators, and the input of a Scientific Advisory Committee and the Defence Program Management Board who oversee the program. Focus groups were the primary method used to engage current and ex-serving ADF members in the project and to understand the experiences and health concerns of MEAO veterans so that these could be mapped to the health and exposure questionnaire and to check the validity, relevance and priority of items to be assessed. Each focus group included discussion of health concerns, positive and negative aspects of deployment, experiences after returning from deployment, and strategies for recruitment to the study and the use of incentives.

Conclusion: Increasingly policy makers and researchers are recognising the importance of consumer participation in research and this is a priority for the MEAO health study investigators. The approach has been used to establish research priorities, specific research questions and the design of the project.

Corresponding author: Dr. Christopher Barton, Centre for Military and Veterans' Health, 122 Frome Street, Adelaide 5001 Email: christopher.barton@adelaide.edu.au

Topiramate Treatment for Post Traumatic Stress Disorder in Australian Veterans

Chris Alderman, L McCarthy, J Condon, A Marwood, J Fuller

Purpose: Post-traumatic stress disorder (PTSD) is a disabling psychiatric disorder that is common amongst combat veterans and may lead to very poor sleep, and disturbing nightmares. The primary objective was to examine the safety and effectiveness of topiramate as an add-on therapy for the management of combat-related PTSD. Secondary objectives were to examine the effects of topiramate on sleep and alcohol consumption.

Methods: Australian combat veterans were enrolled in an 8-week open-label pilot study of topiramate for treatment of PTSD. Psychometric, sleep and alcohol consumption assessments were conducted at baseline and week-8.

Results: The 8-week study protocol was completed by 29 subjects. Significant reductions in Clinician-Administered PTSD Scale (CAPS) score were observed at the 8-week end-point (from 86.3 ± 21.1 to 67.1 ± 25.1 , $p < 0.01$). The Stanford Sleepiness Scale score was unchanged (10.5 ± 0.72 to 9.0 ± 0.58 , $p = 0.08$) and Mississippi PTSD scores decreased but the extent of the change did not attain statistical significance (120.4 ± 6.5 to 111.5 ± 20.9 , $p = 0.08$). There was a significant reduction in the proportion of patients with nightmares (100% to 62% ($p < 0.001$)); those experiencing anxiety interfering with sleep (90% to 62% ($p < 0.05$)); and those with high-risk drinking patterns (31% to 14%). Two serious adverse events were reported during the study: increase in low back pain, and an episode of acute confusion.

Conclusion: When used in addition to other empirical therapy, topiramate may be effective at reducing general symptoms of combat related PTSD, as well as reducing high-risk alcohol intake and nightmares. Further randomized controlled trials of topiramate for the treatment of combat related PTSD are warranted.

*Corresponding author: Chris Alderman, Repatriation General Hospital
Email: Chris.Alderman@health.sa.gov.au*

Traumatic Optic Neuropathy

*Dr (COL) John Crompton
Email: jlcrompton@internode.on.net*

Comparison on Fasting Glucose with the Oral Glucose Tolerance Test to Screen For Diabetes in Subjects Receiving Chronic Low Dose Glucocorticoid Therapy

Morton Burt

Purpose: Chronic glucocorticoid (GC) therapy, which is common treatment for inflammatory and autoimmune disease in elderly subjects, may increase the prevalence of diabetes. Patients are usually screened for diabetes by measuring fasting glucose, with an oral glucose tolerance test (OGTT) recommended when fasting glucose is non-diagnostically elevated (5.6-6.9 mmol/L). The aim was to investigate whether fasting glucose can diagnose diabetes in subjects receiving long-term low dose GC therapy. As GCs exert a greater effect on postprandial than fasting glucose, we hypothesized that fasting glucose would have poor sensitivity in this patient group.

Methods: Plasma glucose was measured before and 2 hrs after a 75 g glucose load in 60 subjects (37 women) who were not known to have diabetes and who were receiving chronic (>6 months) prednisolone 4-10 mg/d for inflammatory arthritis or polymyalgia rheumatica. The diagnosis of diabetes was based on WHO criteria (fasting glucose ≥ 7.0 mmol/L, 2 hr glucose ≥ 11.0 mmol/L). HbA1c and clinical characteristics were also recorded. The sensitivity and specificity for a fasting glucose of ≥ 5.6 mmol/L (the threshold for an OGTT) to detect diabetes was calculated. The primary outcome was the area under the receiver operator characteristic (ROC) curve for fasting glucose. Fasting glucose was then combined with HbA1c in a logistic regression model.

Results: The subjects mean age = 70 ± 10 yrs, BMI = 28.9 ± 5.9 kg/m², waist-hip ratio (WHR) = 0.90 ± 0.11 , prednisolone dose = 6.5 ± 2.1 mg/d and duration of continuous GC use = 73 ± 72 months. The prevalence of diabetes in this group was 15% (9 of 60 subjects). However, fasting glucose was < 7 mmol/L (4.2-6.6 mmol/L) in all diabetic subjects. Subjects with diabetes reported urinary frequency more often (7/9 vs 10/41, $p = 0.001$), had a higher HbA1c (6.2 ± 0.8 vs $5.7 \pm 0.4\%$, $p = 0.01$) and tended to be older (75 ± 10 vs 69 ± 10 yrs, $p = 0.09$), but did not differ significantly from non-diabetics in gender distribution, BMI, WHR, family history of diabetes, prednisolone dose or duration of GC use. A fasting glucose ≥ 5.6 mmol/L had 86% specificity but only 33% sensitivity to diagnose diabetes. The area under the ROC curves for fasting glucose alone (0.71, 95% CI = 0.57 to 0.82) and combined with HbA1c (0.76, 95% CI = 0.63-0.86) were not significantly different ($p = 0.49$).

Conclusions: In summary, fasting glucose, HbA1c and clinical characteristics do not reliably predict the presence of diabetes in subjects on long-term GC therapy. We conclude that subjects receiving chronic GC therapy should be screened for diabetes using an OGTT.

**** Acknowledgements:** Research nurse Venecia Willenberg, Professor Malcolm Smith, Associate-Professor Michael Ahern and Dr Stephen Stranks also contributed to this study. The study was supported by a grant from Foundation Daw Park.

Contact author: Morton Burt, SouthernAdelaide
Diabetes and Endocrine Services
Email: morton.burt@health.sa.gov.au

Medicines information - What Veterans Need and What is Provided by Doctors and Pharmacists

Tammy LeBlanc, A Gilbert, M Harris

Purpose: Many patients wish to have information on their health care treatments, and require this information if they are to participate in their own health care. In response, policies have been put in place in many countries to improve the quality and availability of medicine information. It is important to know whether older people in particular are now receiving adequate medicines information as they often deal with multiple medications³. There are few recent studies of older peoples' views on provision of medicines information⁴. This paper reports on the findings of a national survey designed to support the continuing improvement of the Veterans' MATES Program, a quality use of medicines program funded by The Department of Veterans' Affairs (DVA) and implemented by the University of South Australia. The aim of the study was to identify the information veterans wanted and information they received from doctors and pharmacists on their medicines.

Methods: A quantitative survey was mailed to 10,000 veterans randomly selected from a qualifying cohort of 62,700 veterans. The response rate was 41%, with a final sample of 4,126 veterans (mean age 82 years, 62% male). Respondents were asked what information they needed about a medicine when it was prescribed for the first time, what information was provided and the amount of information provided in relation to their needs.

Results: The four most common items of information sought by veterans were the purpose of the medicine (78%), instruction for use (67%), possible side effects (56%) and the name of the medicine (52%). Medicine information most commonly recalled as provided by the doctor included the purpose of the medicine (76%), instructions for use (67%) and the name of the medicine (60%). Pharmacists provided similar information but significantly less often. The largest significant discrepancy between information needed and information provided was for 'information on potential side effects' (56% needing information vs. 37% receiving information, $p \leq .001$). Analysis of the quantity of medicine information provided relative to what veterans perceived as being ideal indicated a need for greater information on all topics but in particular 'actions to take in event of side effects', 'other ways to assist managing the condition' and 'interactions with other medicines'.

Conclusions: While medicine topics covered by health professionals were fairly consistent with those needed by veterans, veterans wanted but often did not receive information on 'side effects', 'what to do about side effects', and 'drug interactions'. Strategies used in the Veterans' MATES program aim to address these information gaps.

Corresponding author: Tammy LeBlanc, Gilbert A,
Harris M Sansom Institute; University of South Australia
Email: tammy.leblanc@unisa.edu.au

References

- 1 Dickson D & Raynor DK. Ask the patients-they may want to know more than you think. *BMJ* 2003; 327:861.
- 2 Woolf SH et al. Promoting Informed Choice: Transforming Health Care to Dispense Knowledge for Decision Making. *Annals of Internal Medicine* 2005; 143(40):293-300.
- 3 Yancik R et al. Report of the National Institute on Aging Task Force on Comorbidity. *Journal of Gerontology: Medical Sciences* 2007;62A(3):275-280
- 4 Grime J et al. The role and value of written information for patients about individual medicines: a systematic review. *Health expectations* 2007; 10:286-298.

The effect of a new therapy approach (prism glasses and visual scanning practice) on functional tasks for patients with chronic stroke

Kate Laver

Background: Unilateral Spatial Neglect is a common consequence of stroke with approximately 42% of patients experiencing symptoms after right hemisphere stroke (Bowen et al 1999). Unilateral Spatial Neglect is associated with greater functional disability and longer length of rehabilitation stay (Kalra et al 1997; Cherney & Halper 2001). A recent Cochrane review reported that there was no high quality evidence that current treatment approaches had a long lasting effect on performance of functional tasks (Bowen & Lincoln 2007).

Aims of the study: To evaluate whether combining prism adaptation with visual scanning training (using Dynavision) results in long term improvements in performance of functional tasks (measured by the Behavioural Inattention Test BIT and Assessment of Motor and Process Skills AMPS.)

References

1. Bowen, A, McKenna, K & Tallis, R 1999, 'Reasons for variability in the reported rate of occurrence of unilateral spatial neglect after stroke', *Stroke*, vol. 30, pp. 1196-1202.
2. Kalra, L, Perez, I, Gupta, S & Wittink, M 1997, 'The influence of visual neglect on stroke rehabilitation', *Stroke*, vol. 28, no. 7, pp. 1386-1391.
3. Cherney, L & Halper, A 2001, 'Unilateral visual neglect in right hemisphere stroke: a longitudinal study', *Brain injury*, vol. 15, no. 7, pp. 585-592.
4. Bowen, A & Lincoln, N 2007, 'Cognitive Rehabilitation for spatial neglect following stroke', *Cochrane Database of Systematic Reviews*, Issue 2, Art No. CD003586. DOI: 10.1002/14651858.CD003586.pub2.

The Veterans' MATES Project -Delivering improved health outcomes for Veterans

L Kalisch, A Gilbert

Background: The Commonwealth Department of Veterans' Affairs, in partnership with the UniSA, delivers a national prescriber feedback and intervention program, Veterans' Medicines Advice and Therapeutics Education Service (Veterans' MATES). Veterans' MATES team uses DVA's databases to conduct studies in the data and uses expert advice from health practitioners and veterans to develop materials which include a brief distillation of current clinical evidence on the topic, patient-specific prescriber feedback for GPs involved in the care of veterans, and a topic specific information brochure for veterans. The team consists of the Quality Use of medicines and Pharmacy Research Centre UniSA, DATIS, Pharmacy RGH, AMH, NPS, and Public Health and General Practice, AU. New topic materials are produced and mailed to relevant GPs and veterans every 13 weeks. 18 modules have been developed and mailed to 226000 veterans,

Recruitment: The study will aim to recruit four patients that participated in an RGH stroke rehabilitation program more than 6 months ago and were discharged with ongoing symptoms of neglect.

Intervention: Participants will wear glasses with inbuilt prisms while reaching for visual targets on the Dynavision with their ipsilesional hand. There will be 5 intervention sessions scheduled over 3 weeks with each session expected to last approximately 20-30 minutes.

Outcome assessment: The BIT and AMPS will be used at baseline and at 1 week and 3 months after the end of the intervention period to evaluate effect of the intervention on performance of functional tasks.

Contact authors: Kate Laver, Department of Rehabilitation and Aged Care, RGH Email: Kate.Laver@health.sa.gov.au

22000 GPs, 5800 pharmacies and 1700 accredited and hospital pharmacists. This paper reports on the combined results across 18 modules in terms of doctor, pharmacist and veteran satisfaction with the program materials, the usefulness of the material and the influence of the programs on medication use, health service utilization, health outcomes for veterans and cost savings to the health system.

Aim: To improve health outcomes for veterans.

Methods: Administrative health databases are interrogated to identify medication-related problems and patient-specific prescriber feedback is used to prevent or resolve these problems.

Results: Across all 18 modules over 70% of GPs, pharmacist and veteran report high satisfaction levels with module materials. Over 80% of GPs, report that the patient-specific prescriber feedback is helpful. Over 50% of GPs indicating at least one of their patients identified in feedback was reviewed. The project has been effective in increasing home

medicine review rates, increasing beta-blocker use in heart failure, increasing cardiovascular medicine use in diabetes, reducing NSAID use in heart failure and diabetes patients, reducing complexity of respiratory device use, reducing doses of proton pump inhibitors, reducing antipsychotic use and reducing inappropriate combinations with clopidogrel. Improvements in health outcomes were demonstrated through reduced NSAID use leading to reduced hospitalisation for NSAID adverse events, reduced PPI use leading to reduced hospitalisation for pneumonia, reduced use of contraindicated medicines leading to reduced hospitalisation, and increased use of Home Medicines Review leading to reduced hospitalisation rates for patients with heart failure and patients taking warfarin. Savings to the health system through were shown through an additional 4,000 Home Medicine Reviews at a cost savings over \$1.3 million/

year, an additional 600 people on beta-blockers with a reduction of 5-6% in hospitalisations for heart failure and ~\$200,000 saving in hospital costs in 2005, an additional 1800 people at high risk of adverse effects ceased the NSAID with a reduction in hospitalisations for GI ulcer, heart failure and ~ \$360,000 saving in hospital costs in 2005/6.

Conclusion: The effective techniques developed in this project have wide application in improving routine clinical care, for post-marketing surveillance and for identifying potential medication-related problems.

Corresponding author: L Kalisch,

2009 Queens Birthday Honours

The Australian Military Medicine Association is pleased to note, honour and congratulate the following health professional on their receipt of Queen's Birthday Honours in 2009.

MEMBER (AM) IN THE GENERAL DIVISION

Dr Anthony Duckett WHITE RFD

Randwick NSW

For service to dermatology through contributions to remote area practice, the management of skin disease in the Pacific Islands and education.

Eulogy For Major Raffaele Scicchitano - By Lieutenant Colonel Stanley Papastamatis, CO 3 HSB 8th October 2009

Few men can have had as many rich, varied and ultimately satisfying lives as Raffaele. Physician, teacher, mentor, scholar and finally Officer in the Australian Defence Force within the Royal Australian Army Medical Corps. Raffaele Scicchitano was commissioned as a Major on the 28th October 2004 and posted to the 3rd Health Support Battalion. He had come to the point in his life where he needed a fulfilling professional challenge and the Australian Army filled that void.

In his short career Major Scicchitano deployed 5 times, including OP PAKISTAN ASSIST 2006-2006. His compassion for his patients under the most trying of conditions, the cold and bleak highlands of Pakistan was a trademark of Raffaele's style. Buoyed by the challenges of Army life he deployed again in 2006 he deployed, not once, but twice to OP CATALYST. His fourth deployment was 4 months on OP SLIPPER and his final deployment in June of this year was in support of OP RESOLUTE.

What was most impressive about Raffaele, was his inquisitive nature, infectious smile and his phenomenal capacity for work. Raffaele's involvement in the medical preparation of nearly 250 South Australian reservists demonstrated his remarkable willingness to help, caveated only by the need for real coffee not, as he put it that "strained through socks stuff". Raffaele had a great affinity, love and respect for military life.

He was sincere and humble man. He was always professional, loyal and dedicated and remarkable in his willingness to work as a humble RMO – a great contrast to his Professorial position within the Royal Adelaide Hospital as a thoracic physician. Loving, caring, compassionate and so very close to his wife and family, Raffaele was a remarkable man. His example is an inspiration to us all.

May you rest in Peace.

Paulatim

JMVH Vol.17 No.4 - October 2009

Please note the following correction to JMVH Vol.17 No.4 - October 2009

Page 1 - Table of Contents

Book Reviews

Therapeutic Guidelines: Dermatology

Authors should be Dermatology Expert Group not
Nikki Blackwell, Carole Foot, Christopher Thomas.

1. Purpose and scope

The Journal of Military and Veterans' Health is a peer reviewed journal published by the Australian Military Medicine Association. The aim of the journal is to promote excellence in the discipline of military and veterans' health, to promote research and to inform and educate all those practising as health professionals or who have an ongoing interest in this area. The scope of the journal covers all aspects of health of service personnel from enlistment and service within a military organisation to post service health care as a veteran. Environmental and related aspects of employment are included in this scope so that the journal provides a unique forum for discussion and research related to a wide range of health issues arising from exposure to military environments. This scope is very broad including, for example, mental health, trauma, health training and effects of environment on health.

Editorial Office

Please address all non-electronic correspondence to:

Journal of Military and Veterans' Health
113 Harrington Street
Hobart TASMANIA 7000
AUSTRALIA

Email: editorial@jmvh.org

Tel: 613 6234 7844

Fax: 613 6234 5958

URL: <http://www.jmvh.org>

Submission of manuscripts

Electronic submission of manuscripts is mandatory.

Manuscript requirements

Manuscripts submitted to the Journal of Military and Veterans' Health must conform with the *Uniform requirements for manuscripts submitted to biomedical journals* (www.icmje.org).

2. Categories of manuscripts

The Journal of Military and Veterans' Health publishes articles related to health of military personnel and veterans within two broad areas of interest:

Research and practice related	Informative and commentary
Original Research/ Original Articles	Editorials
Short Communication	Letters to the editor
Review articles	Biographies
Reprinted Articles	History
Case Studies	Obituaries
Abstracts from the Literature	Book reviews
	Commentary
	View from the Front

Each issue may not contain all categories of articles. The word limit does not include text in the abstract, references, figures and tables. The requirements for submission categories, which are peer reviewed, are summarised below:

Category	Maximum word count	Maximum number of	
		Tables and/or figures	References
Editorials	1000	1	3
Original research	3500	6	30
Short communication	1500	3	10
Review article	5000	8	60
Case studies	1000	3	10
Letters to the editor	800	2	10
History	3000	6	20
Commentary	1500	3	10
View from the Front	2000	5	20
Obituaries	200	1	4

Instructions to Authors

Original research

This category is the primary mode in the journal for communication of findings from original research studies.

Short communications

This category is for communicating the findings from small-scale research studies however other subject material will be considered.

Review articles

Authors who wish to submit a review should first contact the editors to determine its suitability for publication in the journal. The editors encourage authors to submit systematic reviews for publication.

Reprinted articles

This section will include full length copies of articles reprinted with permission from other journals. These articles must be keynote and valuable contributions to health issues in the military and veterans' areas. Readers are invited to email details of papers that should be considered for this category. Any proposal should be accompanied by a short commentary (maximum 200 words) outlining why this historical paper was important in shaping some aspect of military or veteran health practice. The commentary will be published with the keynote article.

Case studies

This category is primarily designed to present details of interesting or unusual clinical cases and a summary is required with a limit of 100 words. The text should be presented using the following headings; background, history, examination findings, special investigations, discussion including differential diagnosis. The article should succinctly illustrate important points.

Abstracts from the literature

This category will include abstracts of seminal work published in other journals which is related to the scope of the Journal of Military and Veterans' Health. Readers are invited to email references to papers that are considered to be valuable to healthcare professionals and others in the military and veterans domains. The editors acknowledge that many of our readers may not have facilitated access to comprehensive reference libraries.

Letters to the Editor

Letters may comment on material that has recently been published in the journal or may address new topics, such as use of new equipment or instrumentation in

the field or a new technique applicable to preventive medicine. Where the subject matter is directed towards a previous publication the editors will usually send the letter first to the authors of the original paper so that their comments may be published at the same time as the letter.

Editorials

Submissions are encouraged for publication in this category and these will be subjected to the peer review process. Topics of interest must fall within the scope of the Journal of Military and Veterans' Health. Guest editorials may be invited from time to time by the editor; suggestions for topics for editorials should be directed to the editor.

Biographies

Biographical accounts of the work of individuals who have made outstanding contributions to the health and care of military personnel and veterans will be considered for publication. If you wish to submit a biographical article the editor should be consulted prior to preparation of the article. The editorial board may solicit such articles directly.

History

Articles describing notable themes related to health and care of military personnel and veterans are invited for publication. The scope is broad and could include, for example, the conduct and outcome of military operations, effect of climate, improvements in trauma care, surgical techniques and mental health. The article should focus on health care delivery and practise as the main theme and may compare changes from earlier practise to those in use today. The editorial board may invite such articles directly however if you wish to submit a manuscript the editor should be consulted in advance. The style of this category will be the same as that applied to a review article.

Obituaries

The editorial board will accept obituaries for individuals who have served as health professionals within the Australian Defence Force. These have been very successful in the British Medical Journal (BMJ) to provide information to the wider health readership. Guidance for preparing an obituary can be found on the BMJ web site, www.bmj.com (e.g. *BMJ* 1995;311:680-681 (9 September) and *BMJ* 1995;311:143-144 (15 July)). Obituaries should be submitted within one month of death and will be subject to editing if required.

Book reviews

Reviews of publications which have a direct focus on military and veterans' health for educational, informative, reference or other reasons will be invited. The author/s would be expected to be independent, have considerable experience and/or a track record and a direct involvement in the field which is addressed by the publication.

Commentary

Commentaries will be short articles which provide incisive, informative and balanced comment on current health issues. The editors may invite commentary on a research paper published in the same edition of the journal. All commentary articles will be peer reviewed and the article style will be that of an editorial.

A view from the front

This category will consider submissions from health individuals at the front line of health care and health delivery to serving personnel and veterans. These articles should be topical, recent, may contain an individual's personal view of a health delivery system and will be subject to peer review.

3. Editorial policy

Original material

The Journal of Military and Veterans' Health publishes original work describing health related research studies. Submitted manuscripts must not have been published or submitted for publication elsewhere, either in whole or in part. This applies to both paper and electronic methods of publication but not to abstracts presented to scientific meetings. Authors planning to submit review articles should first contact the Editorial Office to ensure the appropriateness of the subject material.

Disclaimer

While the Editorial Board makes every effort to ensure that no inaccurate or misleading data, opinions or statements are published in the journal, all data, results and opinions appearing in articles and advertisements are the responsibility of the contributor/s and/or the advertiser concerned. Accordingly the Editorial Board and their respective employees, officers and agents accept no liability whatsoever for the consequences of any such inaccurate or misleading data, results, opinions or statements. While every effort is made to ensure that all data are accurately presented, new methods and techniques should only be considered

in conjunction with published literature from manufacturers.

Ethics approvals

All studies that involve participation of humans, information on participants or which would otherwise be considered to require ethical approval related to the principles set forth in the Helsinki Declaration should be conducted in accordance with such principles. Studies of this nature must contain a statement indicating that approval has been granted by a properly established Human Research Ethics Committee.

All studies involving experiments with animals must contain a statement indicating that the protocol *was approved by an appropriately constituted ethics committee or institutional review board in compliance with guidelines* established by that country's government. A statement must be included that indicates that all animals received humane care in compliance with these guidelines.

Confidentiality

Confidentiality must be maintained in relation to all participants. All presented data must be de-identified. If a participant is able to be identified from illustrations, photographs, case studies or other study data then release forms or copies of permission for publication must be submitted with the manuscript.

All potentially identifying information (including patient likenesses, identification numbers, names and initials) must be removed from images, tables, graphs, charts and text before the manuscript is submitted.

If a reference is made in the text to personal communication (oral or written) as a source of information, a signed statement of permission is required from each source. The year of receipt of these statements should be provided in the text. Use of personal communication as a reference will only be accepted in special instances.

Informed consent

A statement must be included indicating that informed consent was obtained from all participants if data were obtained from or were related to human participants.

Authors Process form

Each author must complete this form and forward the original signed copy to the editorial office. A faxed or scanned image may be submitted electronically to

Instructions to Authors

maintain the editorial process however the original completed form must be received by the editorial office before publication.

Copyright assignment

Copyright for each submission is to be assigned to the Journal of Military and Veterans' Health or provision for a licensing arrangement must be completed (*Authors Process* form).

Conflict of interest and funding

Authors are responsible for recognising and disclosing financial and other conflicts of interest that may bias or could be perceived to bias their work. They should acknowledge in the manuscript all financial support for the work including any control over publication by funding bodies and other financial or personal connections to the work. Each author must complete the conflict of interest and funding section of the *Authors Process* form.

Authorship and acknowledgments

Each author must indicate their contribution to preparation of the manuscript (*Authors Process* form). The corresponding author is responsible for ensuring that all individuals who do not satisfy the criteria for authorship are noted in the acknowledgements section together with a brief description of their contribution.

Sole submission

Authors must indicate that the work is original and has not been published or submitted for publication in another journal (*Authors Process* form) as the same or similar material. This includes submission by the authors and their colleagues in the interval before this work is published. Submission by authors of similar material to advertising, news media or other forms of publication must be indicated when the Journal of Military and Veterans' Health receives your manuscript and a copy of that material should be provided with your manuscript.

Peer review

Two or more referees are assigned to review each submission (except for Book Reviews and Reprinted Articles). Acceptance of original articles is based on significance, originality, scientific quality and interest to the Journal of Military and Veterans' Health readership. If the submission is accepted for publication, editorial revisions may be made to aid clarity and understanding without altering the meaning. Authors are given the opportunity to nominate reviewers whom they believe are expert and impartial in their area of interest.

Offprints

A copy of the final paper will be provided to the corresponding author in pdf format. A copy will be available from the journal website (www.jmvh.org) for interested individuals to download. These copies are made available for single, personal use only and are not available for commercial or other use.

Rights and permissions

Written permission to reproduce any previously published tables or figures must be obtained from the copyright holder (and authors as applicable) and a copy of this permission provided with your submission. Any reproduced material must be clearly identified and its source and permission noted in the manuscript.

Clinical trial registration

We define a clinical trial as "Any project that prospectively assigns human subjects to intervention and comparison groups to study the cause-and-effect relationship between a medical intervention and a health outcome (ICMJE definition). These should be registered, including early phase uncontrolled trials (phase I) in patients or healthy volunteers (WHO Recommendation)".

The Journal of Military and Veterans' Health requires all clinical trials to be registered with a registry that is accessible to the public (at no charge); is searchable using standard, electronic (internet) means; is open to all prospective registrants at minimal or no cost; validates registered information; identifies trials with a unique number; and includes basic information related to the researchers and the trial.

If you are submitting a randomised controlled trial, add the registration number of the trial and the name of the trial registry in the acknowledgements section of your manuscript. Other trial registers that currently meet all of the International Committee of Medical Journal Editors (ICMJE) and World Health Organization (WHO) requirements can be found at <http://www.icmje.org/faq.pdf>.

Registries that meet these criteria include:

- Australian Clinical Trials Registry (www.actr.org.au/)
- US National Library of Medicine (sponsor) (www.clinicaltrials.gov)
- The International Standard Randomised Controlled Trial Number registry (www.controlled-trials.com)

Instructions to Authors

- The National (UK) Research Register (www.update-software.com/national/)
- European Clinical Trials Database (<http://eudract.emea.europa.eu/>)

Language

All manuscripts must be written in English. Spelling and phraseology should be to either standard English or standard American usage and should be consistent throughout the manuscript. Contributors with a non-English native language are encouraged to seek the help of a competent linguist who is familiar with medical terminology prior to submission. It is the author's responsibility to have the language revised before submitting the work for publication. Only minor language revisions are provided after submission.

Review process

Receipt of all submitted papers is acknowledged by email. Manuscripts are initially assessed by the editors and then sent for external review to experts in the field. The corresponding author will be notified by email when a decision is reached. To aid in the peer review process we invite authors to suggest potential reviewers, with their contact details, in the cover letter.

Reproduction of articles, figures and tables

If you would like permission to reproduce an item from material published by the Journal of Military and Veterans' Health, contact the editorial office by email editorial@jmwh.org.

Software and format

The manuscript must be supplied in Microsoft Word in .doc format (Word 2007 file format not accepted at this point in time) or in rich text format. Files prepared in other packages will only be accepted and considered provided they are compatible with Microsoft Word and that *any reformatting is minor*. Files prepared in various desktop publishing proprietary formats will not be accepted.

4. Organisation of manuscripts

Papers will differ in structure depending on category. These instructions refer to sections of manuscripts independent of category where these sections are included. For original research articles the structure should follow the order below with each section beginning on a new page. Reviews should commence with an abstract and then be organised such that the information is presented in a logical sequence with

informative headings and sub-headings related to the content.

Title page

The manuscript should be preceded by a title page which includes the following information:

- Concise title of manuscript
- Name, address, title, highest qualification, affiliation and contact details (email, postal address, telephone and fax) for each author
- Identify corresponding author
- Identify (email) address for correspondence (corresponding author)
- Short running title (maximum 50 characters including spaces)
- Word count (text of paper only – excludes abstract, references, figures and tables)

Abstract

The abstract for original articles should be structured under the following headings: Background, Purpose, Material and Methods, Results, Conclusion. The Background must be a maximum of two sentences. Maximum length of the summary should be 250 words with three to five key words or phrases included below the abstract or summary.

Conflict of Interest

All conflicts of interest must be disclosed in full in this section of the manuscript. These may include, but not be limited to, specific or "in kind" interests, incentives and relationships in respect of the manuscript (e.g. grants, funding, honoraria, stock ownerships, royalties, payment of expenses). This section applies to all authors.

Introduction

It should be assumed that the reader does not have a comprehensive knowledge in the field and you should therefore provide a concise account of the background (including relevant literature references) and reasons for this study.

Materials and methods

Descriptions of any techniques and methods must provide sufficient detail such that a reader can replicate the procedures. Methods that have been published elsewhere should not be described in detail and should be referenced to the original work

Statistics. A full description of the statistical methods used should be provided.

Results

Description of results, while concise, should permit repetition of the procedures and direct comparison with similar data by others. Data should not be repeated unnecessarily in the text, figures and tables and appropriate selection of significant figures for numerical data presentation should be applied. Significance should be expressed as values of probability. Where appropriate, results should be presented as figures rather than tables of data.

Discussion

The discussion should not simply reiterate the results presented; the authors should present their analysis and conclusions with reference to the current knowledge base related to this work. Any assumptions on which conclusions may be based should be stated and there should be some discussion of strengths and weaknesses of the research.

Acknowledgements

These should be brief and should include references to sources of support including financial, logistical and access to material not commercially available. Any individuals named must be given the opportunity to read the paper and approve their inclusion in the acknowledgements before the paper is submitted.

References

A list of references should be provided starting on a new page. Only published references or those genuinely in press should be included.

Tables (including legends to tables)

Tables are to be placed at the end of the manuscript in order of appearance in the text with one table per page. Captions to tables should be short and concise, not exceed one sentence and be on the same page as the table.

Illustrations

These are to be submitted as a separate electronic file for each image.

5. Preparation of manuscripts

Style

References. A standard English dictionary should be used (e.g. Oxford English Dictionary 2007) for spelling or hyphenation of non-medical terms and Dorland's Illustrated Medical Dictionary (WB Saunders, Philadelphia) is recommended for medical

terms. A source for general style including grammar, punctuation and capitalisation is the *Style manual for authors, editors and printers*, Sixth edition 2002 (John Wiley and Sons, Australia).

Numbers. Use numerals for all units of measure and time and for all sets of numbers (e.g. 1 m, 2 hours, 5 years, 4%, 2 of 6 observations). Spell out the numbers one through nine only for general usage (e.g. "we had two opportunities"). Spell out numbers beginning a sentence.

Abbreviations. Abbreviations should be kept to a minimum to avoid confusion with readers who may not be familiar with the subject material. Only standard abbreviations, as listed in a style manual or accepted internationally for use within a subject area, may be used without definition. Terms used frequently within a manuscript may be abbreviated however these should be spelled out at first citation with the abbreviation in parenthesis. Abbreviations in speciality areas must conform to accepted use in that area.

Layout. Headings and sub-headings should be consistent throughout the article and conform to the style used in articles previously published in the journal. No text should be underlined. Prepare the manuscript with double-spacing and allow margins of 2.5 cm.

Tables

Tables should be on separate pages at the end of the paper (following the References section) and be capable of interpretation without reference to the text. They should be numbered consecutively with Arabic numerals (e.g. Table 1). A concise, descriptive caption must be provided for each table. Units in which results are expressed should be given in brackets at the top of each column and not repeated on each line of the table. Ditto signs are not acceptable. An indication should be provided in the manuscript as a guide to indicate where the table should be inserted.

Image files

All images must be submitted as separate files. Images embedded in word processing files are not acceptable. Each image must be referred to in the text and an indication should be provided in the text as to the preferred position of the image. Lettering and lines should be of uniform density and the lines unbroken. Image size and layout should be constructed so that each can be placed within a single column or page width.

At submission all files must satisfy the following criteria for resolution, file format and file size and be

submitted in the actual size to be used. Image width should be constructed to be either one or two column width.

- Halftone images
600 dpi
- Colour images
400 dpi (saved as CMYK)
- Images containing text
600 dpi
- Black and white line art
1200 dpi
- File types
TIF, EPS (JPG and GIF are not suitable)
- Figure width (single column)
-- mm
- Figure width (double column)
-- mm
- Font size
8 point (must be readable after reduction)
- Font type
Times, Times New Roman, Helvetica, Arial
- Line width
Between 0.5 and 1.0 point

Illustrations. These should be referred to in the text as figures (e.g. Figure 1) and numbered consecutively with Arabic numerals. Photographs and illustrations will only be accepted as digital images and should be either composed or cropped before submission to ensure there is no unwanted material in the frame. Digital files judged to be unacceptable in the review process must be resubmitted by the authors.

Graphs, charts and figures. All graphs, charts and figures must be submitted in electronic format (.EPS or .TIF files) and should be prepared by a suitable software package. These should be referred to in the text as figures (e.g. Figure 1). Images of hand drawn material will generally not be accepted. Symbols which are to appear in the figure (and not in the caption) should be chosen from the following available types:

• ◦ ◻ ◼ ▼ ▲ ◆ ◇ + △

Footnotes

The following symbols should be used in the order given to reference footnotes:

* , † , ‡ , § , || , ¶ , ** , †† , ‡‡

References

The list of references should appear at the end of the manuscript. References should be numbered consecutively in the order in which they are first mentioned in the text. References in text, tables and legends should be identified by Arabic numbers and appear in the text in superscript, for example text¹ or text²⁻⁴ or text^{5,6-7}. Where punctuation (e.g. comma, period) follows a reference number then the punctuation should appear after the reference.

The format of references should follow the "Vancouver" style as described in the *Uniform requirements for manuscripts submitted to biomedical journals* (www.icmje.org/). The Journal of Military and Veterans' Health varies in two respects from these guidelines: Surnames and initials of no more than the first three authors [et al.] are cited and the first and last page numbers of a reference are cited in full. Journal names should be abbreviated as accepted in Index Medicus (<http://www.nlm.nih.gov/tsd/serials/lji.html>) and a period is not used after journal name abbreviations (e.g. J Mil Vet Health). A list providing detailed examples of references for many types of publication is available at http://www.nlm.nih.gov/bsd/uniform_requirements.html. Where appropriate, cite the type of reference (e.g. letter, editorial, abstract or supplement).

Authors should verify references against the original documents and are responsible for checking that none of the references cite retracted articles except in the context of referring to the retraction. For articles published in journals indexed in MEDLINE, the International Committee of Medical Journal Editors considers PubMed (<http://www.ncbi.nlm.nih.gov/sites/entrez/>) the authoritative source for information about retractions. Authors can identify retracted articles in MEDLINE by using the following search term, where pt in square brackets stands for publication type: Retracted publication [pt] in pubmed.

An example of the reference system is as follows:

1. Quail G. Asthma in the military. *Aust Mil Med* 2000; 9(3):129-137.

Units of measurement

The International System of Units (SI) must be used. For values less than zero enter a zero before the decimal point e.g. 0.123. The style should include a solidus e.g. mg/L.

Abbreviations

Use of abbreviations should be minimised. Spell out non-standard abbreviations at their first mention in the text followed by the abbreviation in parentheses. Avoid uncommon abbreviations and jargon.

6. Checklist

Check the following items before submitting your manuscript.

- Covering letter
- Authors Process Form completed by all authors
- Copy of permission to publish material from other sources (copyright holders)
- All individuals named in Acknowledgements have read the paper and approved their inclusion.
- Copy of all permissions to reproduce material from other sources
- All graphs, charts and figures as separate files, referred to in text of paper and position in paper identified
- All illustrations as separate files, referred to in text of paper and position in paper identified
- All tables included, referred to in text of paper and position in paper identified
- Permission obtained for use of *Personal communication* as a reference
- Copies of any part of the manuscript that may have been published previously
- Copies of any advertising or other material that includes any of the submitted material or data
- Statement on ethics approval/s included

7. Submission of manuscripts

Covering letter

Your covering letter should be submitted electronically with the manuscript as a separate file. It can contain author identifying information as it will not be shown to peer reviewers. It should include:

- Why the paper should be published in the Journal of Military and Veterans' Health
- Details of suggested reviewers

Proofs

Proofs will be sent in electronic form as a PDF to the corresponding author who should read them carefully. Major alterations to the text cannot be accepted at this stage. The proofs should be corrected and returned to the Editorial Office by fax or email (image) within 48 hours of receipt.

Software file requirements

The software files must be named so that each is uniquely identified and attributable to your submission. All files submitted should be named to include the following information in the order below:

- Corresponding author surname
- Corresponding author initials
- Title of paper (may be abbreviated)
- Supplementary identifier to indicate contents of file (e.g. for a figure, include *figure* and unique identifier which can be related to that figure).

Examples:

Quail G Asthma in the military Text of paper.doc
Quail G Asthma in the military Figure 1.eps

Electronic submission of paper

The files can be compressed using a .zip compression format. File size must not exceed 10 Mb for a given email. If there are file size concerns contact the Editorial Office.

Copyright Policy

Journal of Military and Veterans' Health (JMVH)
Author Process Form

Each author must read the authorship, licence to publish, conflict of interest and acknowledgements sections of this form and then acknowledge agreement with each section by ticking the check boxes. The corresponding author must also read and sign the statement on the acknowledgements section. Original signed copies of the form must be sent to the JMVH 113 Harrington Street, Hobart.

Your Name (Print): _____

Manuscript Title: _____

Email: _____

Telephone: _____

Fax: _____

Corresponding Author: _____

1. Authorship. Each author must acknowledge their contributions by checking the appropriate statement. An individual must be able to check all boxes in this section to qualify as an author.

I certify that:

- The manuscript presents original, accurate and valid results. I accept responsibility for all subject material and data on which the manuscript is based and for the integrity and veracity of this paper and its conclusions. I may be called upon to defend the veracity of this paper, should it ever be questioned or criticized in part or in full.
- The manuscript has not previously been published (except in abstract form), in part or in total and has not been submitted elsewhere for publications (attach a letter of explanation if part or wholly submitted elsewhere).
- The manuscript shall not be published elsewhere in any language without written consent of the journal and will not be stored electronically or otherwise in any form without consent of the journal.
- If the manuscript has more than one author, the corresponding author nominated above will communicate with the JMVH editorial office to review edited proofs and make decisions regarding the manuscript.

I certify that I have made substantial contributions to the intellectual content of the manuscript for all of the following:

- Conception and design of the study or analysis and interpretation of data.
- Drafting or critically reviewing the manuscript for intellectual content.
- Giving approval of the submitted manuscript.

2. Licence to Publish. Check the appropriate box:

I certify that JMVH has been assigned an exclusive *Licence to Publish* the manuscript in part or in total in printed and electronic form. This licence shall include all parts of the manuscript including text, tables, figures, video, audio and any other related material as:

- The copyright belongs to me.
- The copyright belongs to my employer from whom I have obtained written permission for a *Licence to Publish*.
- The copyright belongs to the funding body/bodies for this work from whom I have obtained written permission for a *Licence to Publish*.
- The copyright for the manuscript and its content belongs wholly in the public domain and no *Licence to Publish* is required.

3. Financial Disclosure and Conflict of Interest. Check one of the boxes below as applicable. The statements refer to the previous five years and the foreseeable future.

I certify that:

- I have no conflict of interest including but not limited to specific financial incentives, relationships or affiliations and have received no "in kind" considerations in relation to this manuscript OR
- I have disclosed all conflicts of interest including but not limited to specific or "in kind" interests, incentives and relationships in respect of the manuscript (e.g. grants, any control of publication by funding body, honoraria, stock ownerships, royalties, payment of expenses) and these are disclosed in full in the Conflict of Interest section of the manuscript.

Your Signature

Date

4. Acknowledgements Section. I certify that (both boxes must be checked):

- Written permission has been provided by all individuals noted in the Acknowledgements section of the manuscript.
- All individuals who have made a significant contribution to the content reported in this manuscript but who do not satisfy the criteria for authorship are noted with their specific contributions described.

Corresponding Author Signature

Date



AMMA MEMBERSHIP

Become an AMMA Member and receive a welcome gift and certificate plus receive the *Journal of Military and Veterans' Health* quarterly.

To become an AMMA Member contact the AMMA Secretariat:

P: 03 6234 7844

E: secretariat@amma.asn.au

www.amma.asn.au



DISCLAIMER

The views expressed in this journal are those of the authors, and do not reflect in any way official Defence Force policy, or the views of the Surgeon General, Australian Defence Force, or any Military authority

www.jmvh.org