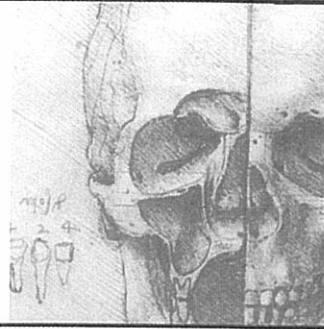
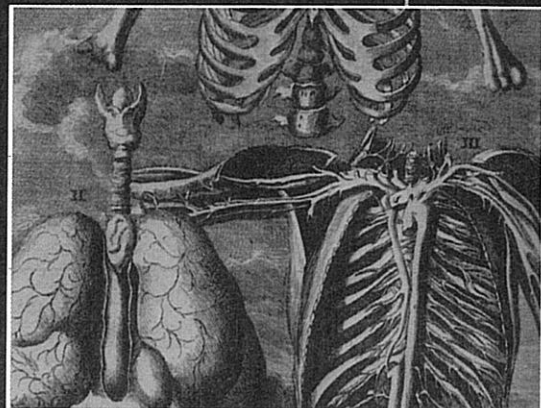
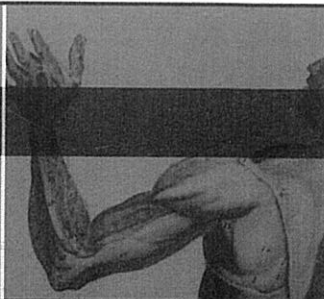




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AUSTRALIAN MILITARY MEDICINE ASSOCIATION

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STATEMENT OF OBJECTIVES

The Australian Military Medicine Association is an independent, professional scientific organisation of health professionals 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.

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EDITORIAL

Six months on...

IT IS NOW SIX MONTHS since the tragic and frightening attacks of 11 September (or 9-11 as the Americans now seem to refer to it). The new Bush government has gone from its initial unilateralist and isolationist stance to a more involved (although still often unilateral) role in world affairs. The Australian Defence Force is now actively involved in Afghanistan, the Persian Gulf and central Asia, as well as East Timor, Bougainville and the Solomon Islands, and in the seas to our north. For Navy, this has been one of the largest medical undertakings since the Vietnam War. Coupled with continued uniformed health personnel shortages, this has been a challenging time for all concerned.

I have been fortunate to attend two very good but very different conferences recently. The first of these was the Asia Pacific Military Medicine Conference, which was held in Kuala Lumpur. This conference, co-hosted by the Malaysian Armed Forces and the US Army Pacific, involved an interesting array of presentations and posters. A number of key themes emerged – infectious diseases of military importance, the need for syndromic surveillance systems, and the challenges of military medical interoperability between different nations.

The second conference I attended was the Emerging Trends in Terrorism conference held in Hobart. This conference provided a fascinating review of current trends in all aspects of terrorism, from chemical and biological terrorism to animal liberation movements and cyberterrorism. The overarching theme was that this problem is not going to disappear and we must continue to prepare for it in all its malignant forms.

In this issue, we see a number of different military medical themes, including operational medicine, medical readiness, health training and history. Operationally, the challenges of providing appropriate chemoprophylaxis to aircrew, deploying a Reserve specialist to East Timor and the progress in preventing and treating malaria in the field, are all addressed. Management of malaria and post-traumatic knee defects impact directly on medical readiness while medical simulation offers a solution for resuscitation



Australian, New Zealand and American military delegates at APMMC Meeting, Apr 02.

training. Finally, the challenge posed by a Private soldier who perished in World War I and the history of blood transfusion in Australia remind us of the real knowledge that comes from historical examples. As always, an excellent series of papers, which are now scanned by the National Library of Australia and are available to universities and other subscribers through the Australasian Medical Index.

The next six months promise to be as challenging as the last six months. The operational requirements will no doubt continue, uniformed shortages prevail and the shadow of the collapse of United Medical Protection hangs over all health care. At the very least, there should be a myriad of topics for future papers, reviews, editorials and letters to the Editor.

Andy Robertson

PRESIDENT'S MESSAGE

ONCE AGAIN, THIS YEAR HAS PASSED more rapidly than previous years.

The activities of the Australian Defence Force and its Health Services also continue apace in support of a variety of overseas operations.

The health system in Australia has also been struck with a degree of frantic activity, in the cause of indemnity, that it has not seen for some time, and this has kept many in the civilian sector busy and in a state of uncertainty.

CHANGING OF THE GUARD

In February, Brigadier Wayne Ramsey resigned as Director General, Defence Health Services after just over two years in the position. Wayne was faced with an extraordinarily difficult task when he took over the position in 1999. The Defence Health Service had been through a turbulent period of change flowing from the Defence Reform Programme, and had really not settled down to its new structure with any degree of comfort. Many challenges faced him, not the least being the push for civilianisation in support areas while maintaining operational capability. There was also a need to provide a central policy and strategic planning organisation that was able to meet the needs of both the Health Services and the Service Chiefs. Complicating all of this were the significant gaps in staffing levels, particularly in the higher management areas.

Undaunted, Wayne embarked upon a series of radical overhauls of the Health Services, endeavouring to achieve the structural efficiencies, while maintaining operational capability and strengthening the organisational framework that supports those in the field. There have been many significant successes during Wayne's tenure but to a large extent the fruits of his endeavours will be borne in future years.

Wayne's term as Director General was the culmination of a highly successful career during which he contributed significantly to both the Defence Health Service and the operations it undertook. He led the first of the Health Service deployments to Rwanda, and spent a number of years in Land Command, during which time I personally came to know him and value his contributions and advice.

Wayne will, I am sure, flourish in the consultancy world that he has joined, and I am sure all members

of AMMA will join with me in wishing him well for the future.

Wayne's replacement, Air Commodore Tony Austin RAAF, comes to the position with equally impressive credentials. In recent times, Tony has led the Air Force team in Air Command, but has also spent a period working on quality management in Wentworth Area Health Service in the NSW health system. I am sure that this mix of operational and health management experience has well placed Tony to move the Defence Health Services forward into the future.

HM QUEEN ELIZABETH, THE QUEEN MOTHER

The recent death of Her Majesty Queen Elizabeth, the Queen Mother, while not unexpected, came as a reminder of our mortality and marked the end of a century of remarkable change.

Queen Elizabeth's passing was of particular sadness to the Royal Australian Army Medical Corps for whom she was the Colonel-in-Chief. Amongst the huge gathering that farewelled the Queen Mother could be seen the familiar slouch hat of representatives of the Corps, marking the close ceremonial links that the Australian Defence Force still has with the Royal Family.

MEDICAL INDEMNITY

The medical indemnity crisis has raised a number of key issues that are of significance to health.

We are all aware that many of the great advances of medicine were taken as a result of experiences during armed conflict. There was no science involved, and the hardships that soldiers endured as the medical world observed and learnt were too horrific to comprehend.

In the 20th century, medicine turned to science and research to make the advances that have given us the kind of health care that we now enjoy.

In the 21st century, we are looking at quality improvement techniques to go even further, both in terms of achieving better and more consistent outcomes, and ensuring that we are getting the best value for the health dollar spent.

But quality improvement demands that clinicians are prepared to acknowledge that they could have done things better, acknowledge, even, that they may

have made an error. But it is clearly true that many doctors are not prepared to make such open acknowledgements for fear of the litigation that may result (although there is evidence that early and open acknowledgement of error may, in fact, reduce the risk of litigation).

It seems to me that the only logical and sensible outcome of the indemnity crisis is the creation of a national medical compensation scheme, where compensation is determined in a logical way outside the court system, and without taking into account issues of individual fault (we all know that 80 percent of errors are system errors anyway, and probably most of the other 20 percent have a systems component). Where individual clinical performance could have been better, it is managed in the context of quality improvement, in an educative not blame culture, with significant shortcomings being dealt with by medical or health care complaints tribunals.

It is only through taking this great leap forward that we are going to be able to continue the improvements in health care that we all know are possible.

Will our governments be bold enough to make this kind of move?

DEFENCE HEALTH SYMPOSIUM

The big event, just around the corner, is the Defence Health Symposium to be held in Sydney from the 26th to the 28th of July. Co-hosted by the Defence Health Services, the Australian Disaster Management Group, the Australian Centre for Posttraumatic Mental Health and the Australian Military Medicine Association, this conference will be the one of the biggest military health conferences held in Australia in recent years. We are proud to be involved with this conference, and it will also offer an opportunity to promote the Association to delegates from around Australia and overseas who might not know of, or might not be members of AMMA. Already, nearly 250 delegates have registered, and the programme is chock full of excellent presentations.

I look forward to seeing you all in July.

Russell Schedlich

AUSTRALIAN MILITARY MEDICINE ASSOCIATION
NOTICE OF THE
11TH ANNUAL GENERAL MEETING

26 July 2002

Notice is hereby given that the 2002 Annual General Meeting of the Australian Military Medicine Association will be held at the Wentworth Hotel, Perth Room, 61 Phillip Street, Sydney, commencing at 5.15pm.

Any member desiring to bring any business forward at this meeting is to give notice in writing to the Honorary Secretary no later than 1700 on Friday 21 June 2002.

ORIGINAL ARTICLES

An Assessment of the Tolerability and Compliance of Malaria Chemoprophylaxis in Australian Army Aviation Personnel¹

Anthony Lourensen, Scott Kitchener and Peter Nasveld²

ABSTRACT

THE AUSTRALIAN DEFENCE FORCE (ADF) is currently maintaining large numbers of soldiers including aviators in malarious areas of East Timor for peacekeeping duties. The only approved malaria chemosuppressive agent for this group is doxycycline with primaquine post-exposure prophylaxis for vivax malaria. Aircrews are suspended from flying duties for the period of the post-exposure prophylaxis.

All Australian Army Aviation (AAAvn) personnel stationed in East Timor in July 2001 were interviewed on their opinions and experiences of the current chemoprophylaxis for malaria. Aircrew particularly reported erratic or poor compliance with doxycycline and dissatisfaction with primaquine post-exposure prophylaxis. Most aircrew delayed post-exposure prophylaxis on return to Australia due to tasking requirements during which many also reported difficulties with doxycycline compliance. There is a pressing need for the investigation of a flexible antimalarial regime that is suited to the unique needs of AAAvn aircrew.

INTRODUCTION

THE AUSTRALIAN DEFENCE FORCE (ADF) is currently maintaining large numbers of soldiers including aviators in East Timor for peacekeeping duties. The area of operations is known to be malarious¹. The first choice of malaria chemoprophylaxis is doxycycline (100mg once daily) beginning one day prior to malaria exposure and continued until 14 days after return to Australia. Primaquine (15mg twice daily) is given concurrently with the final 14 days of doxycycline administration for post-exposure prophylaxis². Mefloquine and Malarone³ are alternatives if doxycycline is poorly tolerated³.

Currently, Australian Army Aviation (AAAvn) aircrew are only approved to use doxycycline as a chemoprophylaxis agent whilst performing flying duties, as neither mefloquine nor Malarone³ are approved for use by aircrew. Recently, a study in aircrew of the Israeli Air Force found that mefloquine was safe and better accepted than doxycycline⁴, suggesting that further studies are needed to assess the safety of mefloquine in aircrew. Australian (AAAvn) aircrew who are intolerant of doxycycline are not

currently authorised to use mefloquine and are classified as non-deployable into malaria endemic areas.

The use of primaquine for 14 days of post-exposure prophylaxis is known to cause side effects and be associated with compliance difficulties⁵. Aircrew are suspended from flying duties for the period of the post-exposure prophylaxis due to inadequate information on the effects of primaquine on aviation high level tasks. Additionally, aircrew are often required to delay primaquine post-exposure prophylaxis until recreation leave is taken in order to continue flying in the interim. In this case, daily suppressive doxycycline is continued until primaquine post exposure chemoprophylaxis can be initiated.

Concerns of classification as non-deployable to a malarious area creates the potential for aircrew to avoid declaring adverse drug reactions to either doxycycline or primaquine. The potential also exists for non-compliance with primaquine post-exposure chemoprophylaxis if aircrew are delayed in initiating it due to continuing tasking requirements after return from the malarious area.

1. Lourensen A, Kitchener S, Nasveld P. An assessment of the tolerability and compliance of malaria chemoprophylaxis in Australian Army Aviation personnel. *Aust Mil Med* 2002; 11(1).
2. Major Anthony Lourensen AAAvn, is attached to the Western Australian University Regiment, Artillery Barracks, Fremantle, Western Australia. Major Scott Kitchener RAAMC, was attached to Army Malaria Institute, Gallipoli Barracks, Enoggera, Queensland and Lieutenant Colonel Peter Nasveld RAAMC, is attached to Seventh Brigade, Gallipoli Barracks, Enoggera, Queensland.

METHODS

All AAAvn unit personnel stationed in East Timor in July 2001 were interviewed on their opinions and experiences of the current chemoprophylaxis for malaria. Personnel were provided with a guarantee of anonymity in order to facilitate open and frank responses without consequences of disciplinary action.

Seventy-nine volunteers (30 aircrew and 49 non-aircrew) from two AAAvn units based in East Timor were interviewed. A standardised questionnaire was

used and administered by a single interviewer. Four non-aircrew reported probable previous adverse drug reactions to doxycycline and were taking mefloquine as malaria chemoprophylaxis. They were included in the study. The East Timor postings for AAAvn units were four months in duration, with most aircrew interviewed undertaking their second tour of duty.

RESULTS

The results are summarised in the following tables:

TABLE 1:

Responses to: 'How long have you been taking doxycycline continuously?'	Aircrew	Non-aircrew
Mefloquine	0	4 (8%)
No chemoprophylaxis	1 (3%)	0
Less than one week	4 (13%)	0
One to six weeks	0	0
More than six, but less than 16 weeks	23 (77%)	44 (90%)
More than 16 weeks, but less than 12 months	0	0
12 months or more	2 (6%)	1 (2%)
Total	30	49

TABLE 2:

Responses to: 'Tell me about your experiences with doxycycline'	Aircrew	Non-aircrew
Difficult to remember to take it daily	6 (20%)	5 (10%)
Dislike taking it daily	2 (7%)	1 (2%)
Concerned about long term effects	2 (7%)	0
Concerned about drug interactions	1 (3%)	1 (2%)
Unsure of need, as few mosquitoes seen	1 (3%)	0
Suffer side effects, so don't take it	1 (3%)	0
Suffer side effects, so take mefloquine	0	4 (8%)
No concerns	17 (57%)	38 (78%)

TABLE 3:

Responses to: 'It's quite difficult to remember to take medications daily – what has been your experience on this deployment?'	Aircrew	Non-aircrew
Missed about 10 days	6 (20%)	0
Missed about 7 days	0	1 (2%)
Missed about 5 days	3 (10%)	6 (12%)
Missed about 2 days	13 (43%)	12 (24%)
Never missed a day	7 (23%)	26 (53%)
Taking mefloquine	0	4 (8%)
No chemoprophylaxis	1 (3%)	0

TABLE 4:

Responses to: 'There are some side effects associated with doxycycline – do you think you've had any?' with a request for elaboration as appropriate. (More than one response was received from some individuals.)

	Previous exposure, no symptoms now		1st fortnight		Ongoing		At night or without food	
	Aircrew	Non-aircrew	Aircrew	Non-aircrew	Aircrew	Non-aircrew	Aircrew	Non-aircrew
Nausea	2 (8%)	1 (3%)	1 (3%)	0	1 (3%)	3 (9%)	0	3 (9%)
Vomiting	0	1 (3%)	0	0	0	0	0	3 (9%)
'Burning throat' or 'indigestion'	2 (8%)	1 (3%)	0	0	4 (13%)	1 (3%)	5 (17%)	7 (21%)
Photosensitivity	3 (12%)	6 (17%)	3 (10%)	1 (3%)	4 (13%)	7 (21%)	0	0
Diarrhoea	0	0	2 (7%)	0	1 (3%)	0	0	0
Slow healing	0	0	0	0	2 (7%)	0	0	0

This was the first exposure to doxycycline for five aircrew and 13 non-aircrew. Of those, four non-aircrew were taking mefloquine, two had suffered side effects with doxycycline previously and had deployed on this occasion using mefloquine, and two had commenced this deployment using doxycycline and been changed to mefloquine following intoler-

ance. Some personnel had suffered side effects on previous exposure to doxycycline, and now had no side effects. Others reported transient side effects that had since resolved, whilst some individuals reported ongoing side effects. Several respondents reported side effects from doxycycline when taken at night or without food.

TABLE 5:

Responses to: 'Have you missed or shortened a post-exposure prophylaxis course?'

	Aircrew	Non-aircrew
Completed all courses fully	9 (36%)	21 (62%)
Missed more than one post-exposure prophylaxis course	3 (12%)*	0
Missed one post-exposure prophylaxis course	6 (24%)	4 (12%)
Shortened to seven days or less	10 (40%)**	5 (15%)
Shortened to greater than seven days, but less than 14	1 (4%)	1 (3%)**
Erratic compliance	1 (4%)	1 (3%)
Intends to miss post-exposure prophylaxis course if symptom free after stopping doxycycline	2 (8%)	1 (3%)

(*One aircrew missed one course due to 'adverse events'; **One aircrew due to 'adverse events')

Five aircrew and 15 non-aircrew had not previously used post-exposure prophylaxis. Of the 15 non-aircrew, one was taking doxycycline long term (two years and 10 months) and intended to continue to do so on return to Australia in order to continue flying duties. Another had been evacuated from a previous deployment due to suffering an adverse drug reaction to doxycycline and post-exposure pro-

phylaxis was not undertaken, and another individual was involved in a trial of tafenoquine post-exposure prophylaxis following a previous deployment.

36% of aircrew and 12% of non-aircrew had omitted post-exposure prophylaxis with primaquine, while 44% of aircrew and 18% of non-aircrew had shortened their post-exposure prophylaxis courses without medical direction.

TABLE 6:
Responses to discussion about 'eradication' (post-exposure prophylaxis) and the question 'Tell me about your experiences with the post-exposure prophylaxis course'

	Aircrew	Non-aircrew		Aircrew	Non-aircrew
Nausea	6 (24%)	4 (12%)	Post-exposure prophylaxis delayed until leave due to tasking requirements	16 (64%)	0
Vomiting	1 (4%)	1 (3%)	Doxycycline compliance erratic when post-exposure prophylaxis delayed	7 (28%)	0
Diarrhoea	2 (8%)	0	Non flying component hampers the operations of the unit	2 (8%)	1 (3%)
Abdominal pain	1 (4%)	2 (6%)	Alcohol abstinence is socially restrictive, especially on post-exposure prophylaxis on leave	7 (28%)	10 (29%)
Wind or bloating	0	2 (6%)	Delay post-exposure prophylaxis on leave by one week so can drink alcohol	3 (12%)	5 (15%)
Headaches	1 (4%)	2 (6%)	Drinks alcohol on post-exposure prophylaxis	9 (36%)	17 (50%)
'Not right'*	4 (16%)	4 (12%)	Unaware of belief to abstain from alcohol	2 (8%)	0
No side effects	11 (44%)	21 (62%)	Will forego post-exposure prophylaxis	2 (8%)	1 (3%)

(*This group consistently found it very difficult to describe how they felt whilst using post-exposure prophylaxis. It was described variously as 'not feeling right', 'not feeling 100%', 'not myself', 'difficulty in concentrating', and 'difficulty in planning things'.)

TABLE 7:
Responses to: 'Do you have any suggestions as to how the chemoprophylaxis and post-exposure prophylaxis courses could be improved?' Some personnel gave more than one response.

	Aircrew	Non-aircrew
Weekly chemoprophylaxis	14 (47%)	14 (29%)
Habituate personnel to malaria chemoprophylaxis by using vitamin C tablets when on exercise	0	2 (4%)
Chemoprophylaxis which does not requires post-exposure prophylaxis	5 (17%)	1 (2%)
A shorter post-exposure prophylaxis course	9 (30%)	6 (12%)
A post-exposure prophylaxis course compatible with flying duties	6 (20%)	1 (2%)
An alternative to primaquine due to the side effects	0	2 (4%)
Post-exposure prophylaxis that is compatible with alcohol consumption	1 (3%)	1 (2%)
Delay post-exposure prophylaxis so personnel can enjoy unrestricted social activities post deployment	0	1 (2%)
No suggestion for improvement	1 (3%)	10 (20%)
Happy with the current system	2 (6%)	13 (27%)

DISCUSSION

A higher proportion of aircrew reported difficulty remembering to take doxycycline and displayed erratic or poor compliance when compared to the non-aircrew. This difference may be due to variations in the

daily routine of aircrew, including rotating between day and night crewing, and spending time away from base on missions. Non-aircrew are generally not exposed to these variations, tending to have a set daily routine. Both AAAvn units approached made doxycy