LETTERS TO THE EDITOR

STUDY OF CASUALTIES FOR HOSPITAL COLLECTIVE TRAINING

From Brig (Retd) R. G. Robinson, L/RAMC
Sir,

I read the notes on the "Study of Casualties for Hospital Collective Training" by the Professor of Military Psychiatry and from DMSD with interest.

Concerning battleshock casualties. As exercise-director of the 1985 Petit Mash series I found that there was a Tactical Doctrine for the Field Medical Company but NOT for the BRUs and no CTRs promulgated, so that there was a danger of incorrect lessons being learned were casualties to be injected purporting to be (and documented as if) evacuated from BRUs and the FCZ. I therefore decided to limit battleshock casualties to those arising locally for direct admission, for which full and comprehensive guidance on management was available.

With the publication of the DMSD template in June 1985 the input of battleshock casualties to exercises will be able to be extended when and provided that proper tactical doctrines for the operation of the BRUs are promulgated and a suitable supply of F Med 26s provided for the "library". The latter had been requested many months previously but were still awaited when I left HQ AMS TA.

The DMSD note reveals a lack of understanding of the project reported in the article which was to prepare and test a protocol under which casualty profiles for a given hospital in a given exercise could be derived from the latest available casualty breakdowns and evacuation template.

On Exercise Petit Mash 85 one of the hospitals being exercised was a Field Hospital and the remainder RCZ General Hospitals. As explained in the article, casualty profiles were constructed for RCZ General Hospitals and Field Hospitals. Casualty profiles for RSC General Hospitals were NOT required for this exercise.

As noted in the article, allowance was made for "training needs" during the preparation of and use of the casualty profile. This catered for the requirement of the "RCZ General Hospital reinforced with specialist teams" and enabled suitable casualty input to be adjusted to the needs of the team members present on the exercise.

I can assure the author of the DMSD note that the project officer and I have been familiar with, working with and training on, the casualty evacuation chain in BAOR for a number of years now, and both know of the existence of RSC General Hospitals in the FCZ, and of the distribution of specialist teams.

Since the article was written a short protocol was prepared to accompany the library of F Med 26s held at HQ AMS TA in which the need to prepare a "casualty specification sheet" for the hospital being exercised based on the latest available template and casualty breakdown data was specified.

It is understood that this protocol was used successfully on Exercise Top Cat 86 (personal communication from Consultant I/C Casualty Control).

I am etc
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Note from the Professor of Military Psychiatry

The exercise director for the 1985 Petit Mash series was clearly handicapped by the lack of the Tactical Doctrine for Field Psychiatric Teams which was not promulgated until August of that year. However the CTR for Battleshock (CTR 16) had been issued two years previously and did give a few clues. A set of 24 battleshock casualty cards for use in combat units has been produced but the creation of a "library" of sound F Med 26s for use in hospital training, in the absence of any previous material, inevitably takes longer.

Note from DMSD

It is acknowledged that RSC General Hospital were not being exercised, but the RCE General Hospital which were, needed to have casualty profiles and F Med 26s showing primarily two cases coming from the RSC General Hospital and not from the Field Hospital.

MALARIA IN PAPUA NEW GUINEA TIME TO REFLECT

from Lt Col J C Richardson, RAMC
Sir,

The recent paper on the prevention of polyresistant malaria in troops training in Papua New Guinea¹ highlights the continuing problem of drug resistance, effective medical intelligence, and good military leadership with discipline. However the article gave the impression that the major factor was one of discipline rather than drug resistance. Two exercises were compared. Exercise I had 17 cases of malaria with poor prophylactic compliance in all but 5 cases. Exercise II had only 4 cases of malaria but "compliance was rigorously enforced". The survey was from December 1984 to November 1985, but Exercise II only finished in October 1985. Three more cases occurred before 10 December 1985 and 11 subsequently. These extra 14 cases alter the validity of the conclusions of the paper.

The exercises in Papua New Guinea (PNG) are split into two parts. An Infantry Company Group of 120 men go to one area (Wewak, 1985) and an Engineer Group who train elsewhere (Port Moresby District, 1985). The location of the exercises within PNG may vary from year

to year. In 1985 the SMO of PNG Defence Forces in Port Moresby was advising Chloroquine prophylaxis for Port Moresby District, and Maloprim and Chloroquine for Wewak. On Exercise II the soldiers were taking Chloroquine and Paludrine. There were no cases of malaria from the Queens Gurkha Engineers in the Port Moresby Area and all 18 cases of malaria came from Wewak, where no soldiers were taking Maloprim.

I do not have the Post Exercise Reports for 1982 and 1983 for precise details of cases and locations. However I know that the Company Group in 1982 had a number of cases while taking Paludrine. In 1983 the Company Group took Maloprim and had 3 (?) cases of malaria, all of which were attributed to non-compliance. The decision to use Paludrine 200 mg daily on Exercise I was made on the advice of the MOD and it was accepted that some cases of malaria may occur.

It is reported in the paper that there was no screening of soldiers after Exercise II because of the low pick up rate after Exercise I. Had screening taken place, some of the subsequent 14 cases may have been detected.

The lessons that have been learned from these two exercises are:

1. The importance of local medical intelligence, especially when it shows variations of disease within a country's borders. This should be co-ordinated at the Royal Army Medical College.

2. The relevance of reading previous post exercise reports.

3. The necessity for allowing time for the natural history of a disease to develop before publication.

4. That since the reputations of Corps, Regiments and individual officers can be affected by medical results so that it is important that the methodology of a trial is perfect, before attributing differences in morbidity are attributed to leadership and discipline of groups and individuals.

It is hoped that when the full results of these outbreaks of malaria are prepared, a supplementary paper will be published, acknowledging that the incidence of malaria in well trained and disciplined troops exercising in Wewak PNG can be as high as 15% when using Paludrine and Chloroquine as a prophylactic.

I am etc

J C RICHARDSON

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EPILEPSY AND ARMY PHYSICIANS

From Colonel (Retd) D. Hamilton, RAMC

Sir, I congratulate Majors Whiteoak and Findley on a most readable piece with excellent case descriptions. As a CILOM Consultant Physician who has served in the medical department of Military hospitals since July 1947 and whose opinion was not solicited, I offer some

comments. I do not agree with the authors concern, I found the results reassuring.

The Regs AMS let physicians off the hook by the instruction "normally" to be invalidated. Regulations not defining epilepsy would have the blessing of Sir Philip Sidney, Erasmus and Disraeli, all of whom deplored definitions but be disapproved of by Shakespeare, Voltaire and Edmund Burke, who liked them. I can't find the text but if I remember, Sir Philip wrote (of poetry) "he beginneth not with definitions which blurr the margent with interpretations and load the memory with doubtfulness but telleth a tale which holds children from play and old men from the chimney corner" (as the Majors' article does).

"By definition such patients do not have epilepsy" is wrong. "You do not have epilepsy". "That's a relief. How can you be sure?". "You don't fit the recognised definition". "Ehh". Are we talking about diagnosis which should be an assessment of the prognosis for the patient's health and so the best management of his care, or about the meaning of words? Harvey and Hopkins' definitions certainly suggests Sir Philip Sydney was right about blurred margents. Perhaps one might say epilepsy is a condition in which the patient is unduly prone to seizures. We have the advantages and disadvantages of English – the best language in the world for crosswords with its multiple meanings for words. Alan Spicer once told me of his case of pachydermal allergy, the patient's skin was not thickened, he was allergic to elephant dandruff in the circus where he worked.

Epilepsy is common in the Army. The commonest cause in early adult life is "idiopathic" epilepsy; in older men, by far and away, alcohol (or its withdrawal), and after alcohol, tumours or vascular lesions. The reservations of my colleagues in case 7 of the article certainly shows their excellent clinical judgement. Gamma scan frequently missed tumours, CT scan quite frequently does so.

When clinicians differ in individual well described cases the correct attitude is perhaps not so much to be found in worrying doubts as to the consistency of their judgement but in reflection on the following points.

Firstly epilepsy, asthma, etc., whilst clear cut conditions, are not invariably sharply distinguishable from normal health; the one merges into the other – as Pickering taught us with regard to hypertension. In these circumstances different opinions are to be expected in borderline cases.

Secondly, experts have not published prognostic analyses of the natural history of various clinical situations or agreed on them themselves. The first fit study goes over partly worked ground, though the influence of such common and vital features as epilepsy in a sibling or in relationship to alcohol has not been assessed prognostically to my knowledge. It is in any event unfair of those concerned in such a study to complain that physicians do not make consistently accurate prognoses. If the first fit study is necessary it is

because the situation is unclear and if it is unclear you cannot complain because physicians, decisions vary – or if they do not or should not vary and are or should be correct, the first fit study is barely necessary.

I am etc
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CERVICAL PATHOLOGY AND COLPOSCOPY

From Major A. M. McCullough, RAMC

Sir, It was interesting and valuable to read Young et al's analysis of their cervical pathology clinic¹ and particularly their comments on the importance of colposcopy.

However, I believe it would be mistaken not to remind readers that magnified viewing of the cervix, although the major use, is not the only gynaecological application of the colposcope. The instrument is a well recognised and proven tool for the diagnosis and treatment of a variety of other diseases particularly vaginal intraepithelial neoplasia (VAIN)² and vulvar intraepithelial neoplasia (VIN)³. VIN continues to increase in incidence and to appear in younger age groups than formerly³. Diagnostic and therapeutic applications of vulvar colposcopy will therefore be of increasing importance.

Early colposcopic assessment and directed biopsy with vital staining⁴ is an important aspect of our vulvar clinic at the Western Infirmary, Glasgow. Patients with a variety of vulvar disorders are seen by both gynaecologists and dermatologists with a special interest in vulvar disease and as with other centres colposcopically directed laser therapy is used for the treatment of VIN⁵ and other vulvar disorders⁶ in an effort to avoid mutilating conventional surgery.

Having made a preliminary analysis of their figures Young et al may now like to consider the instigation of detailed computerisation of their clinic and its data, as this will facilitate storage, retrieval and future analysis⁷. This would certainly be of value in ensuring the follow up of pre-malignant and malignant disease because many patients developing VIN will have had a previous genital tract malignancy⁸. In our experience at the clinic we have found this incidence to be as high as 50%.

I was surprised that Young et al made no case for the necessity of a carbon dioxide laser in their practice as this is regarded by a significant number of colposcopists as an essential part of the armamentarium against pre-malignant disease. The laser provides the conservative surgery so often required in our younger population nowadays and further referral of what must be a significant number of patients cannot be clinically satisfying.

It is certainly in the military community interest to provide a comprehensive tri-service approach to the management of genital pre-malignancy and I would certainly agree with Young et al's suggestion that the provision of one centre in each theatre is required.

The days of "borrowing the ENT microscope" should not only be over, with the realisation that colposcopy is now an established part of everyday gynaecological practice, but it must be recognised that the colposcope and its attendant treatment modalities continue to find increasing applications.

I am etc
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The above letter was referred to the authors of the article in question, and their response is printed below:

Sir, We are grateful to Major McCullough for his comments and we entirely agree that the colposcope is a very useful tool in the management of both vaginal and vulvar intraepithelial neoplasia. However, our paper was concerned with the **initial** experience of a **cervical** pathology clinic in a military hospital. The progression to vulvoscopy is one which can only be made as experience is gained and as material presents through

the outpatient clinic. To date very few cases have come our way.

As regards the case for the carbon dioxide laser, although this treatment is currently very popular and certainly great fun, the results of treatment by laser are not necessarily better than other modalities. Table 1 shows the failure rate of various treatment modalities for

Table 1

Results of Local Treatment of CIN (Singer 1985)

Lesion	Diathermy	Cryo	Laser	Cold Co-Agulation
CIN 1		5%	11%	2%
CIN 2		7%	11%	3%
Cin 3		12%	17%	2%
Total	2.7%	8%	13%	2.5%

Cummulative failure rates to 1983. Total 7061 cases.

CIN and it will be seen that the failure rate for laser therapy is considerable. These figures, however, are distorted because initial treatment was confined to destruction of the lesion only whereas when the laser is used to destroy the whole transformation zone failure rates are no worse than those achieved by cold coagulation. In our clinic now we regularly use cold coagulation, so far to good effect. In the Army Medical Services one must always take account of the cost effectiveness of a treatment modality, and it is not without significance that a carbon dioxide laser would cost approximately 35 times the cost of our cold coagulator. It would certainly not prove cost effective to install a carbon dioxide laser in each military hospital. However, we do agree that it is probably the only effective treatment modality in vulvar disease, which as we have said, is not currently common in our practice.

We also agree completely that detailed computerization of clinical data is highly desirable. Indeed, a requirement for a computer system which would allow this is currently being staffed through AMS CDC.

Readers may be interested to know that by the end of 1986 a colposcopy service should be available as an outpatient procedure in BMH Berlin, BMH Rinteln, CMH Aldershot, BMH Munster, RAF Wroughton, RAF Hospital Wegberg, RAF Hospital Akrotiri, and RAF Hospital Ely. There is now no reason why any patient of all three services should not find easy access to colposcopy.

K. R. YOUNG
R. C. MENZIES

HEAT ILLNESS

From Dr Alan Porter, General Practitioner

Sir, I read with interest the detailed account of 45 cases of heat illness from Hong Kong by Major Henderson and his colleagues (June 1986, p. 76). My

own interest in this subject arose when I became aware that, in contrast to army recruits, marathon runners seemed to be relatively immune to death from heat illness. Last year I did a series of experiments, using myself as the subject, and demonstrated the rather obvious, but often ignored, fact that when the body is producing excess heat an appreciable area of skin, particularly the scalp, should be left uncovered in order to permit heat dissipation¹.

I find myself uneasy about three aspects arising from the Hong Kong paper. The first is that a reader might be left with the impression that heat illness is just a problem in the heat and humidity of Hong Kong and is unlikely to be a problem in the U.K. Major Henderson and his colleagues did stress that "indicates below BLACK do not equate with safety", but in Table 1 "normal work" is recommended by acclimatised troops in a WBGT index temperature of 26°C. It depends what is meant by normal work, but when I jogged in a wet bulb temperature of only 21/22° with forearms and head covered my core temperature eventually climbed in a steep manner. Recruits can, and do, die in quite cool conditions^{2,3,4,5}.

My second misgiving is the failure of the authors to discuss heat dissipation in more detail. My own small study emphasized to me that the scalp is the main heat dissipating organ of the body and it is vital to leave it exposed for effective prophylaxis of heat illness. I believe that the British Army fails to make a clear distinction between training operationally and subjecting soldiers to endurance tests. The grim and fatal training run in full battle kit of 1948 described by Dr Haines⁶ and remembered by myself involve circumstances which were quite artificial and can only rarely be paralleled on a battlefield.

Although there is something of each in the other, an operational exercise is different from a sustained endurance test and this should be reflected in the clothing worn. I have to hand a photograph from a local paper of Para recruits running up a hill carrying a log against a summer background. Though their forearms are bare they are wearing helmets and thus they are being exposed to an unnecessary risk.

My third misgiving relates to water intake. I accept the authors' conclusion that the Gurkhas suffered more severely than the other soldiers because of fluid restriction. But it does not follow that adequate hydration is a prophylaxis against heat illness. I believe that most victims are adequately hydrated at the time of their collapse. I, myself, was still sweating profusely when my temperature was climbing steeply. The present policy of full water bottles, whilst laudable, is probably largely irrelevant in the U.K. setting.

Colonel Brown, when criticising my paper⁷, wrote that "great efforts are made to ensure that all physical training instructors and training staff are well versed in the hazards of heat illness . . .". To an outsider this would not appear to be always true for there is contrary

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evidence from the inquests on two recruits^{4,5}, the television programme on "The Paras" (BBC1, 3 March 1983), when the response to the collapse of a recruit seemed to be inappropriate, and the recent tragedy at Portsmouth.

Is there any reason why all army recruits should not be subjected to sustained endurance tests at all times, except perhaps deep winter, with their forearms and scalps exposed? I believe that this simple measure would almost entirely eliminate the risk of heat illness in recruits in the U.K.

I am etc
A M W PORTER

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HEAT ILLNESS

From Lt Col J R Brown, RAMC

Sir, Thank you for the opportunity to comment on the article by Henderson et al¹ and the above letter from Dr. Porter. Preventive medicine is a thankless task at the best of times and I hope that Dr Porter's letter will help raise interest in some aspects of our training methods.

Henderson et al¹ emphasise the importance of adequate rest stops for cooling and rehydration. They reinforce my own view that the use of salt should form no part of our instructions as to the prevention or first aid treatment of heat illness. However, they claim that the thermal insult in Groups I and II were similar but do little to substantiate this. Work rates, time involved, clothing states, equipment carried or distance covered in a specific time are not elaborated on. From the details available it would appear that the Gurkhas in Group II were involved in much more prolonged and strenuous activity than the members of Group I. This ex Gurkha RMO finds it sad to learn of the apparent poor water discipline practised by the Gurkha troops as they had always prided themselves on the reverse.

Whilst I agree with Dr Porter that greater discussion by Henderson et al¹ of human heat production, its dissipation and attendant effects on core temperature might have been useful, I think that theirs was

essentially a report concerning the clinical aspects of heat illness with particular emphasis on medical management. I should be dismayed if any medical officer was under the impression that heat illness was primarily a problem of hot climates for a considerable number of cases are reported in UK and BAOR each year. Indeed the majority of fatal casualties have occurred in Western Europe². General awareness of the problem should be high as the recognition and management of heat illness forms part of the mandatory three year training cycle for all soldiers³. The risk in temperate climates is specifically mentioned. Nonetheless we cannot deny that these points require continual reinforcement to all Arms and Services.

Dr Porter enquires as to what is normal work. Though vague I imagine the term is adequately understood by those to whom it refers. In more scientific terms, eg for the purposes of trials, normal work can be taken to equate to "moderate" work which is permutations of marching, digging in clay, vehicle maintenance, light resupply (not too much lifting and carrying!) and sedentary periods. Heavy or strenuous work will include heavy resupply, forced marches, assaults and difficult or forced pace digging in.

I am not qualified to comment on mortality rates for marathon runners *vis a vis* military recruits though the former are at least self selected and usually run in appropriate attire. We cannot pretend that battle order even without the added encumbrance and heat insulation of Nuclear, Biological and Chemical protective equipment is ideal for exercising in. Unfortunately experience in the field has shown that only by training as they expect to fight can soldiers properly adjust to their environment which includes their dress and equipment. Only then do they minimize effort and experience true working conditions. I do not believe that the Army does confuse 'training operationally and subjecting soldiers to endurance tests'. Both are directed to the same end which is to produce a fit soldier who can best operate and survive in a very hostile environment. I appreciate that sometimes men undergo training in inappropriate dress possibly due to the mistaken idea of their leaders that such training enhances men's fitness and stamina. The subject is much too large to expand on in a letter but suffice to say that training to increase stamina in inappropriate dress is self defeating as the soldier is prevented from fully stressing himself by the early onset of heat stress. It is vital that medical officers educate those with responsibility for training so they appreciate the likely effects of any training programme on the health of the individual soldier. Fitness training is fraught with danger but it must be remembered that it was the high state of fitness of parachute and commando forces which allowed their successful 'Yomp' across the Falklands - many line regiments might not have fared so well.

I do not understand Dr Porter's view that full water bottles are largely irrelevant in the temperate zone.

unless he is dealing in semantics. In his own study⁴ he cites a sweat loss of over 2 litres per hour. The water bottles¹ contents could have gone a considerable way to offset this. It is absolutely true that heat illness can cause casualties before sweating ceases, indeed sweating is far more commonly seen than dry hot skin, but I doubt if this relates to the more serious cases which one would describe as heat stroke. Heat casualties will start to occur in a group when core temperature rises above 39°C in correlation with a body weight loss of 3% or more (mostly water). Frequent drinking of small quantities of water on the move allied with the most relaxed dress compatible with the aim of the training and ensuring appropriate rest periods is the way to avoid heat casualties.

In the final analysis I believe that action to prevent heat injury must be directed at enlightening the training staff and cannot depend on mandatory regulations as to dress states to be employed during various types of physical training. If we are successful in this then pure fitness training will take place in the appropriate dress and "inappropriate" military dress will be reserved for when specific training requires it. We must not avoid

unphysiological dress assemblies because they pose a hazard, rather we must fully recognize the extent of that hazard and control it.

The occasional sad and unfortunate death should not make us overlook the fact that much effort is being put into ensuring that training is safe and in this the medical services give support to the many skilled and experienced members of the Army Physical Training Corps and other instructors throughout the Army. The Army is a large organisation whose basis is the individual soldier. This man needs to be fit so he needs to train. It is only by constant effort that we will be able to reduce heat and other casualties to a base minimum.

J R BROWN

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NOTICE OF A MEETING OF MILITARY SURGEONS

The 93rd Annual Meeting of the Association of Military Surgeons of the United States will take place 2-7 November 1986 at San Antonio Texas. The themes will be "Medical Readiness in Peace and War/Terrorism".

Details from: Linda Hines, Convention Manager, AMSUS, PO Box 104, KENSINGTON MD 20895 USA.