

EXERCISE TRIPLE SERPENT 2008

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Abstract

Exercise Triple Serpent, the Surgeon General's biennial clinical conference, was held on 24-26 June 08. Several areas of DMS activity were covered during the course of the conference ranging from operations, through research and clinical development to the forthcoming DMS structural change. This paper provides a commentary on the principle themes and presentations.

Introduction

Exercise Triple Serpent is the Surgeon General's (SG's) biennial clinical conference and this year was held at HMS Collingwood on 24-28 June. It was attended by nearly 300 delegates from all Services, ranks and specialties of the Defence Medical Services (DMS). This article provides an overview of the proceedings, which drew heavily on the experiences published in the recent Combat Casualty Care Edition of this journal.

The View From The Top

The Surgeon General outlined the successes, lessons learned and challenges that face the DMS particularly at a time of enduring commitments in two theatres of operations which are generating casualty loads not seen at Role 3 since Korea. International collaborations are flourishing and clinical and laboratory research is generating high quality evidence on which to base clinical change. Evidence in the public domain demonstrated that clinical success is as high as it has ever been and for this we should congratulate ourselves; this represents the end of the phase whereby the DMS reacts to the medical agenda and the start of activity to see the DMS leading the agenda. In areas such as pain management, limb salvage, wound infection, hearing conservation and mild traumatic brain injury this is already happening.

The Challenges Ahead

Capability

Whilst the DMS was getting support from the Chain of Command and from Ministers in obtaining additional resources, it was noted that the DMS could not consistently provide the evidence required to back up our requests for these extra resources and more work was needed in this area.

Regulation

The decision to proactively seek the assistance of the Healthcare Commission in conducting the first external review of DMS Clinical Governance, for which special regulations have had to be put before Parliament, was highlighted. This evaluation will inevitably highlight areas where the DMS have further improvement to make. However, the report will provide the objective evidence that will support the DMS' position when it comes to bidding for additional resources at times of budgetary challenge.

Provision of high quality care on operations whilst working within a regulatory framework written specifically for the UK mainland is challenging and three options are available. Staying within the regulations may be difficult at times, getting the regulations changed is mostly not practicable, which leaves managing the risk. By Risk Management we have approached the regulators to seek their agreement in principle that our proposed actions are evidence based, proportionate and reasonable. In addition, the Advisory Group on Medical Countermeasures (AGMC) has been reviewed and an Advisory Group on Military Medicine (AGOMM) has been established with a wide range of subject matter experts able to give highly specialised advice to inform Defence medical decision making.

Dealing With the Unexpected

The SG felt that this challenge was exemplified by the public debate that now accompanied peer reviewed medical publication of DMS data. The DMS is now much more proactive about identifying issues that might be used to create tensions within Defence circles and our allies. This approach minimised the impact in the UK of the American experience relating to mild Traumatic Brain Injury (mTBI), dealt with the issue concerning Quality Assurance of blood and blood products received in coalition medical facilities and to publish a special edition of the Journal of the RAMC that was full of potential for high profile public debate. The effect of media coverage of DMS activity was discussed and two themes emerged. Experts from the Ministry of Defence Press Office should be approached as early as possible when issues of likely press interest arise. To some extent such issues can be avoided by DMS personnel considering the media impact of any presentation or publication before dissemination and by ensuring the highest levels of accuracy and quality to avoid potential misinterpretation.

The Future

Multinational cooperation is thriving in many areas and new opportunities are being actively sought, but the impact of divergences in clinical practices, training and traditions between nations might result in unforeseen consequences. Consequently, the UK has submitted a proposal via The NATO Committee of the Chiefs of Military Medical Services (COMEDS) to introduce an operational quality assurance (QA) framework, which has been welcomed by several allies. The UK Government Comprehensive Approach framework offers opportunities for Defence, including the DMS, engaged in numerous cross government work streams in such areas as the development of the UK's global health strategy as well as the strategic plan for the UK engagement in Afghanistan.

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Worries remain about the fragile nature of communication processes from the tactical level up and its implication for governance. Mistakes are inevitable during war but failure to communicate those errors in a timely manner up the Chain of Command was an issue to be addressed to stop potentially embarrassing media disclosures. This was not withstanding the congratulations due to the DMS for the high regard in which it is held amongst both the Defence and medical communities and for 'one of the most satisfactory' House of Commons Defence Select Committee enquiries ever conducted within the Defence environment.

The Vice Chief of Defence Staff (VCDS) was confident that we would achieve success in our current operational endeavours although timescales were unclear and several potential flash points around the world may have an effect on the UK and its potential courses of action in response to these global challenges. In more immediate terms the Deputy Chief of Defence Staff (Health) (DCDS(H)) advised that the planned move of the DMS to the Midlands represents only the latest phase of change within the organisation observing that change is nothing new and is vital if organisations are to remain relevant.

Operational Update

The key message was that medical capability is constantly being reviewed in order to ensure that operational needs are met and the balance between being too lean, and providing sub optimal care and too fat, causing sustainment problems are managed. This included a description of the "rule of 1/3rds" such that in the current campaign context, 1/3 of personnel at any time are from the Regular DMS, 1/3 are from the Reserves and 1/3 are from Contractors on Deployed Operations (CONDO)/International collaboration with sponsored reserves also being developed. Individual equipment sponsors were urged to engage actively in the process of getting enhancements into the equipment programme. As current operations move onto a campaign footing, a new medical phase had started in which expectation has risen and acceptance of risk fallen; this coupled with the observation that only 1/3 of current clinical activity is generated by UK forces. These factors together raise issues that were not at the forefront of the planning process for initial operations that must now be considered.

Defence Analytical and Statistical Agency and the Defence Professor of Emergency Medicine outlined current operational medical information management including the problems of agreeing epidemiological definitions that were internationally consistent to allow valid comparison. Despite the statistically small numbers, the UK Case Fatality Ratio (CFR) is stable and there is no significant difference in the Died of Wounds (DOW)/Killed in Action (KIA) data between theatres. The Operational Emergency Department Attendance Register (OpEDAR) was presented as an epidemiological tool for operational health surveillance, as J97/Epinato is becoming less useful. The Standardised Mortality Ratio (SMR) methodology [1] was also described including the downward trend in mortality on operations from Kosovo to the present day, which provides the evidence to support SG's public assertion that "all who can be medically saved are being saved" [2].

The current mortality distribution shows that most fatalities die immediately with the secondary mortality peak at the 1-2 hour point now virtually absent, suggesting that future improved survival lies in improved force protection such as personal body armour and protected mobility rather than as an immediate medical care issue.

Medical Emergency Response Teams (MERT)

Previous MERT tasking procedures were viewed as relatively insensitive resulting in unnecessary MERT missions, risks to high

value assets and lost opportunities for more effective MERT tasking. New procedures saw enhanced clinical information gathering, including direct communication with the medical personnel on the ground, to allow development of a more considered retrieval plan. Response times are unaffected and unnecessary taskings have been reduced. More fundamental, was the discussion on the requirement – or not – of a doctor on the MERT [3]. Data is not currently available to answer this question decisively but work continues to evaluate the contribution of medical staff, in terms of both interventions performed and perhaps more critically, the medical decisions not to intervene.

Clinical Hot Topics

Transfusion Medicine

The Medicines and Healthcare Products Regulatory Agency (MHRA) has accepted that the DMS policy to extend the shelf life of defrosted Fresh Frozen Plasma (FFP) is proportionate and reasonable to conserve FFP stocks. Introduction of the Massive Transfusion Protocols were examined including its consequences in terms of sustainability. The DMS was now a world leader in the ability to provide platelet for transfusion including the deployment of a platelet apheresis capability. The problems of hyperkalaemia and microemboli in massive transfusion are being mitigated by the use of blood less than 19 days old.

Limb and Soft Tissue Injury

The lower limb trauma working group at the Academic Department of Surgery and Trauma [4] continues to develop consensus definitions to inform future research and allow future comparative studies to be undertaken. The thorny issue of the role of through knee amputations was revisited and evidence confirmed this amputation could be justified and was associated with good outcomes. Insights into an ongoing collaborative study into bone morphogenic proteins were also presented. The plastic and reconstructive surgery cadre discussed the current challenges in the management of complex wounds which for them centre on the role of infection and the required interventions as the wound evolves: at initial contamination, as the contamination becomes colonisation and when it develops into both local and systemic infection. The enhancements in wound management that have translated into better outcomes were discussed.

The improvements in initial wound management set the scene for how the Defence Medical Rehabilitation Centre (DMRC) is evolving to enhance patient outcomes and manage the many challenges facing Headley Court. Areas discussed ranged from infrastructure to the application of new technology, management of expectation of casualties and their relatives and the introduction of additional clinical specialists to manage an enlarging cohort of patients with significantly more complex needs than 5 years ago.

Pain Management

Pain management is a multidisciplinary issue being taken forward by a specific working group. Current aims include identifying new interventions to manage pain further down the care pathway as well as trying to obtain a better understanding of the patient's perception of pain by recording subjective pain scores in the Joint Theatre Trauma Register. The UK in collaboration with American specialists is investigating the practicalities of the forward use of regional nerve blocks and the role of adjuvant analgesics such as amitriptylline. "Pain Pods" were also described, which provide the patient with their projected daily analgesic requirements and allows them to manage their own pain relief rather than being dependant on medical staff.

Head Injury

Mild traumatic brain injury (mTBI) has achieved a high profile in the USA, having been described as the signature illness of the modern campaign era. Analysis of the UK perspective on mTBI [5], including clinical and laboratory evidence reports that there is no evidence that mTBI is impacting on combat effectiveness and that the incidence of mTBI in the UK population is greatly lower than the US population, for reasons that remain unclear. Despite this low rate, a mTBI programme has been developed, led by DMRC and arranged in 4 levels:

- Level 1 is educational, with an associated disease surveillance program.
- Level 2 involves initial contact with medical services but no formal follow up.
- Level 3 is out patient care.
- Level 4 inpatient care.

Psychiatry

UK rates of Post Traumatic Stress Disorder (PTSD) are very much lower than US rates and the Academic Centre for Defence Mental Health (ACDMH) at King's College have examined the evidence in order to try and explain these differences. Clinical instruments for identifying PTSD differ between the two countries and various cultural issues might also be affecting the rates. Studies to date have not shown that onset of PTSD is affected by pre-deployment briefings, post tour decompressions or the Trauma Risk Management (TRiM) process, but has linked a higher risk of PTSD with longer tour lengths and to adverse social experiences in younger life.

Research

Whilst the DMS is an active research partner with many national and international organisations and increasingly successful in turning research proposals into funded projects, there remains a requirement for greater efficiency by ensuring maximum use of the emerging research results to inform clinical practice and minimising duplication by identifying where proposals might be merged. It was also stressed that this principle of efficiency should be applied not just to our internal process but to our external collaborations in order to ensure that scarce research resources were used most effectively.

Logistic Issues

Clinical accommodation on the refitted PCRf and future new large aircraft carriers is likely to be considerably enhanced compared to current capability. Providing AEROMED remains as challenging as ever and although there have been advances in strategic AEROMED retrieval and evacuation of the most critically injured casualties, the importance of having AEROMED staffs engaged in patient management from the earliest possible point in the care pathway was re-emphasised.

The Medical and General Stores Integrated Project Team (Med and GS IPT) review outlined its processes and outcomes to re-establish end-user confidence in its systems which included the introduction of new technology and a more responsive process developed which had now seen a significant improvement in the IPT's ability to service demand.

References

1. Smith J, Hodgetts T, Mahoney P et al. Trauma Governance in the UK Defence Medical Services. *JR Army Med Corps* 2007; 153(4): 239-242
2. Lillywhite LP. Foreword to the Combat Casualty Care Issue. *JR Army Med Corps* 2007; 153(4): 232-233.
3. Davis PR, Richards AC, Ollerton JE. Determining the composition and benefit of the pre-hospital medical response team in the conflict setting. *JR Army Med Corps* 2007; 153(4): 269-273.
4. Clasper J and the Lower Limb Trauma Working Group. Amputations of the lower limb: a multidisciplinary consensus. *J R Army Med Corps* 2007; 153(3):172-4.
5. DMSD 16/01/03 dated 25 Mar 2008.