

of the degree of dental development as it relates to chronological age. The purpose of this current study was to test the applicability of one such system, the Demirjian system, to a Sydney sample population, and to develop and test age prediction models using a large sample of Sydney children (1624 girls, 1637 boys). The use of the Demirjian standards resulted in consistent overestimates of chronological age in children under the age of 14 years by as much as a mean of 0.97 years, and underestimates of chronological age in children over 14 years by as much as a mean of 2.18 years in 16 year-old females. Of the alternative predictive models derived from the Sydney sample, those that provided the most accurate age estimates are applicable for the age ranges 2-14 years, with a coefficient of determination value of $R^2=0.94$ and a 95% confidence interval of ± 1.8 years. The Sydney based standards provided significantly different and more accurate estimates of age for that sample when compared to the published standards of Demirjian.

CMDR Matt Blenkin has served 18 years in the Royal Australian Navy, about 4 of which have been at sea as a Ships Dentist. He undertook a MSc in Forensic Odontology at the University of Sydney in 99-2000. Since that time he has been involved in the forensic investigation of fatalities for State Coroners, the military, and the Australian Government both domestically and internationally. He is currently 'Staff Officer - Projects' in the Defence Health services Division in Canberra.

Email: matthew.blenkin@defence.gov.au

Heal Thy Self? - The Personal Mental Health Challenges Faced by Military Health Professionals

M Suen*, SE Hodson, N Bennett

Australian military health professionals have a proud operational deployment history. They have saved and enhanced the lives of not only military personnel but civilian in war torn countries and disaster situations. However, what are the costs of this service? Are there specific psychological challenges for military health professionals in the modern battle-space and operational environments? What can be done to ensure operational deployments result in enhanced resilience?

This paper will utilise research data from a number of ADF deployments to highlight the psychological challenges for military health professionals. It will explore the theoretical constructs that assist us to understand these challenges and will consider strategies for enhance post-deployment growth and resilience.

CAPT Mathew Suen is currently posted to the 1st Psychology Unit. He has deployed to Sumatra and the Middle East.

Email: stephanie.hodson@defence.gov.au

The Characterisation and Referral of Severe Trauma in North Queensland. Implications for Military Medical Units Operating in Isolated Areas

A McDonnell*, P Aitken, M Elcock, C Vietch

Introduction: Trauma is the leading cause of death for all people aged between one and 34 years and the leading cause of disability for all people aged less than 65 years. It is a major cause of disability and death in military, rural and remote settings, with the death rate increasing with increasing remoteness. Patients in remote locations have difficulties accessing care and it is postulated that this difficulty with access compromises patient outcome. Australian Defence Force (ADF) medical units frequently deliver health care in isolated areas and refer trauma to civilian health facilities

Methods: Retrospective observational case series of trauma patients referred to The Townsville Hospital (TTH) from January to December 2004 (pre-intervention) and following the introduction of the Early Notification of Trauma Guidelines (ENofTG) into nine rural health facilities, a prospective series from February to June 2005. Inclusion criteria were Injury Severity Score (ISS) >15 ; in-hospital death; or mechanical ventilation for more than 24 hours. Outcome measures were expressed as time interval to referral, prehospital and retrieval/referral time intervals, and cause and nature of injury.

Results: One hundred and four patients experiencing severe trauma were transferred to TTH during 2004. Fifty per cent of transfers were from the three base hospitals in the North Queensland Health Zone. Twenty-eight per cent were from rural health facilities without 24-hour surgical cover and 22% were conveyed directly to TTH from the site of trauma. Transportation by air was the mode of transport for 77% of patients.

Road trauma ($n = 43$; 41%), falls ($n = 24$; 23%) and interpersonal violence ($n = 23$; 22%) were the most common mechanisms of injury, and injuries to the head and neck were the primary diagnosis in 71 per cent of cases. Males in the 15 to 29 year age group were significantly over-represented in the referral data ($P = 0.0001$). Correlations between Injury Severity Score (ISS) and radial distance to Townsville and ARIA score were significant at the $P = 0.05$ and $P = 0.01$ levels respectively. Median time to tertiary care was 8.0 (range: 2.5 – 58.4) hours.

Discussion: Before the introduction of the ENofTG, 29 patients were transported from rural health facilities and seven patients were transported in the same set of rural facilities after their introduction. The median time to referral before the introduction of the ENofTG was 30.0 (range: 1 – 122) minutes and 26 (range: 10 – 175) minutes ($P = 0.931$) after their introduction.

Conclusion: The time interval between injury and definitive care was long in this study and further research directed at finding strategies that can reduce this interval are urgently needed. A trend towards reduced referral times