

CME: Trauma

Trauma is a major source of mortality and morbidity in South Africa (SA). An estimated 48 000 South Africans die as a result of trauma annually, with a further 3.5 million needing treatment. SA's overall injury death rate is nearly twice the global average. Rising levels of poverty and unemployment, limited access to education, alcohol and drug abuse, widespread access to firearms and other weapons, exposure to violence in childhood and a weak culture of enforcement are just few of the many factors contributing to this carnage.

Having campaigns and strategies in place to curb the attitude of violence and address the underlying contributing factors is vital. The rates of both transport accident-related (11% v. 11.6%) and assault-related deaths (10.2% v. 15.7%) as a percentage of total non-natural deaths in SA's Eastern Cape Province, for example, are worryingly higher than the national average, which is in keeping with the high levels of poverty in the province. However, the ability to provide quality care to the victims of these injuries is just as important. It is the latter that poses the biggest challenge for the Eastern Cape.

While the algorithms in this month's CME were developed in the Eastern Cape, the trauma that they aim to manage is apparent throughout the country. A junior medical officer and a consultant working in the surgical disciplines in the East London Hospital Complex have produced the *Surgery Survival Guide*. It is from the pages of this 200-page handbook that the algorithms are taken. They are broadly applicable, and should serve as quick references for those working in situations where trauma is common.

A good complaints system

The practice of medicine is a risky business, and the expectations of the public regarding the professional and ethical standards of their doctors are higher than ever before. Errors and mistakes are an unavoidable part of professional practice, despite the best of intentions on the part of doctors.

A dissatisfied patient, lacking the opportunity to make a complaint, is likely to report a doctor to the Health Professions Council of South Africa, or instruct attorneys to make a claim for clinical negligence.

Howarth *et al.*^[1] suggest that a key step in avoiding litigation is the establishment of a good complaints system, and offer the ingredients of such a system while outlining the principles of excellent complaints handling.

See also 'SAMA pitches in to help victims of medical negligence.'^[2]

Surgical outcomes in SA

The South African Surgical Outcomes Study,^[3] a 7-day prospective observational cohort study contributed to by surgeons from across the country, sought to investigate perioperative mortality and need for critical care admission in patients ≥ 16 years of age undergoing inpatient non-cardiac surgery between 19 and 26 May 2014 at 50 public sector, government-funded hospitals.

In the context of the fact that, according to the just-released *Lancet* Commission on Global Surgery report^[4] (Martin Smith, co-author of the editorial on p. 451, having served as a commissioner), 5 billion people in the world (and 93% in sub-Saharan Africa) cannot obtain basic surgical care (see Fig. 2^[4]), this extensive survey paints a happy picture for SA. However, there is no room for complacency (see Fig. 10^[4]), which suggests the necessary future scale-up to meet projected 2030 requirements. While access to surgical care is essential for reduction of mortality and morbidity from surgical conditions, most patients in SA's public sector hospitals require urgent and emergency surgery, which is strongly associated with mortality and unplanned critical care admissions. Non-communicable diseases have a larger proportional contribution to mortality than infections

and injuries. Significantly, HIV infection, although the most common comorbidity, was not associated with in-hospital mortality.

What do major laparoscopic bile duct injuries cost to repair?

In their cost analysis of operative repair of major laparoscopic bile duct injuries, Hofmeyr *et al.*^[5] calculate the total in-hospital cost of surgical repair of major bile duct injuries sustained during laparoscopic cholecystectomy. The cohort of 44 patients, all of whom had major bile duct injuries repaired by Roux-en-Y hepaticojejunostomy, is unique in respect of the number of patients evaluated.

The implications of a major bile duct injury can be profound, with the spectre of protracted hospitalisation and invasive investigations, the anxiety of major reconstructive surgery, a lengthy rehabilitation period, decreased quality of life, loss of income and, in some cases (particularly in the present SA medicolegal environment – see above), prolonged and unpleasant litigation. The financial burden implicit in injury management (the cost of repair of a major laparoscopic bile duct injury is substantial, averaging ZAR215 711 (range ZAR68 764 - 980 830) – a reflection of prolonged admission to hospital, complex surgical intervention, and intensive imaging requirements) and the consequences for the patient are significant. Thomson and Smith^[6] also stress in an accompanying editorial that the costs of the repair are not the only financial costs. Medicolegal costs can be considerable, and there are substantial non-fiscal 'costs' for the patient, the 'injuring' surgeon and their families.

Prevention must remain the top priority during laparoscopic cholecystectomy.^[5,6]

The management of burns begins at home

Burns are one of the leading causes of disability-adjusted life years lost, with approximately 3.2% of South Africans suffering thermal injuries each year. The timeous access of burns patients to appropriate medical care is emphasised in an article describing the Edendale Hospital Emergency Department experience of prehospital cooling of severe burns^[7] and an accompanying editorial.^[8] Children are at particular risk of hot-water scalds and burns in household accidents involving cooking pots, open fires and stoves. Fortunately, nine out of ten hot-water burn injuries are minor, and first-aid measures are effective – application of cool (not iced) water to burns for 10 - 20 minutes early after the injury affords relief of pain and limits tissue necrosis, with improved healing and reduced complications. Even cooling up to 3 hours after a burn has been shown to be beneficial.

Of great concern is the number of non-accidental burn injuries (NAIs) in children. Some 5% of burns in children in KwaZulu-Natal are NAIs, resulting primarily from immersion of the child's limbs and buttocks in hot water.

Non-alcohol-related Wernicke's encephalopathy (WE)

In their report of three cases of non-alcohol-related WE, Antel *et al.*^[9] remind us that WE may not be a sign of alcoholism, but may represent thiamine deficiency secondary to persistent vomiting.

WE is always a medical emergency, and non-alcohol-related WE tends to be more catastrophic in onset and less likely to present with the classic features. It may be seen in the malnourished, in the elderly and in chronic illness.^[10] All high-risk individuals presenting to the emergency room should receive 200 mg parenteral thiamine before any administration of glucose. Thereafter the recommendation is intravenous thiamine (200 - 500 mg) given in 100 ml normal saline or 5% glucose over 30 minutes, three times daily for 3 days, followed by

200 mg three times daily until the patient has improved substantially, when 100 mg daily orally will suffice.

Authors and readers please note

With this June *SAMJ*, we are moving to a policy of publishing most, if not all, research papers in full online, with their abstracts – which if artfully written should ‘tell the whole story’ of the research and whet the appetites of interested readers^[11] – in the print edition.

The rationale is partly cost-containment and partly the need to move into the digital space, as with so much publishing today, in the knowledge that our young readership is impatient of print, preferring to access their reading on smart phones and tablets.

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