PostScript

LETTERS

START is not the best triage stategy

I read with interest the article of Delaney and Drummond[1] in the April issue, and found it both useful and informative. However, I must disagree that in mass casualty situations "Most experts agree that START (simple triage and rapid treatment) . . . is the best strategy".

This recommendation should only be made if the system is the easiest to use for the people undertaking the triage process, or is the most accurate at triaging patients.

Three triage systems are currently in common use in the developed world: START, Careflight, and the Triage Sieve and Sort.

START was devised in the mid 1990s in the United States, and has since been modified. It bases triage around walking, breathing, presence or absence of a radial pulse, and the ability to follow commands, and categorises patients for immediate or delayed care, or as unsalvageable.

Careflight is used in many parts of Australia, and also uses walking as the first discriminator. It then relies on the ability to follow commands, presence of a radial pulse, and presence of breathing to assign an appropriate category. Patients are immediate, urgent, delayed, or dead.

The UK system, Triage Sieve and Sort, uses the same four triage categories. The Sieve is used for primary triage, at the scene, and patients are retriaged using the Sort at the casualty clearing station.

The Sieve first uses a walking filter, and then presence of breathing, respiration rate, and capillary refill time or heart rate to categorise patients. The Sort uses the triage revised trauma score, to which may be added anatomical information.

In terms of ease of use, the algorithm chosen must fulfil two criteria. The first is that it is simple to use: all three algorithms fulfil this requirement. The second is that users should be familiar with it. The triage Sort will be familiar to most UK pre-hospital personnel, as it is the system used by most UK ambulance services on a day to day basis. The Sieve will be familiar to all those who have attended the Major Incident Medical Management and Support (MIMMS) course[2] or the shorter one day version.

As increasing numbers of doctors, nurses, ambulance personnel, and other emergency services are now attending MIMMS courses, the Triage Sieve and Sort will become more familiar. The course is now taught in Sweden, Holland, Australia, Cyprus, and has recently been accepted by NATO. It is being considered in South Africa.

With regard to the accuracy of the algorithm, a recent article in the *Annals of Emergency Medicine*[3] retrospectively compared START, Careflight, and the Triage Sieve. The authors found that START had the same sensitivity and a lower specificity than Careflight for identifying critically ill patients. The use of Triage Sieve alone rather than Sieve and Sort makes interpretation of their results with regard to that system unreliable.

Many mass casualty situations involve children, and a triage algorithm that relies on walking or adult physiological values will over-triage many children. The Triage Sieve offers an alternative in the Paediatric Triage Tape, which is currently being prospectively validated in South Africa.

This combination of factors—familiarity to UK pre-hospital providers, accuracy, and accommodating injured children—should lead to the recommendation that, for mass casualty situations in the United Kingdom, the Triage Sieve and Sort should be the triage algorithm of choice.

Furthermore, all those providing medical care at mass gatherings such as sporting events should have attended a MIMMS course, which provides an excellent system in the unlikely event of a mass casualty situation.

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Computer based screening in concussion management: use versus abuse

As reviewed by Schnirring,[1] a number of user friendly, computer based systems for concussion management have been developed, including CogSport in Australia and HeadMinder and ImPACT in America. Important cautionary comments have been made about the appropriate use of such programmes (versus potential for their misuse),[1 2] which from a neuropsychological perspective warrant further elaboration. The computer based technology in question falls within the specialist field of the clinical neuropsychologist, whose area of expertise encompasses the development and use of psychometric tests for screening for brain damage. The problem to emphasise here is that there is the potential for malpractice when such computer based tests become separated from their professional—that is, neuropsychological—source.

There is a growing consensus that computerised test platforms such as referred to above have substantial practical advantages over conventional neuropsychological tests for use in the sports arena.[1–4] They offer automated assessment which can be conducted on groups of individuals, and they can be administered by a trained team doctor or school coach, or be web based, without the presence of a neuropsychologist. However, it is precisely herein—that is, the apparent ease with which these computer based systems can be applied—that the potential for misuse lies.

As Schnirring[1] points out, non-psychologists are not in a position to evaluate the various programmes being marketed. Developing this point further, there is a real danger that non-psychologists may fall into the trap of construing that the scores derived from such programmes can be used, in and of themselves, as a type of "litmus paper" for making decisions about the presence or absence of cerebral dysfunction in the individual case. This type of misconception occurred in the early days of neuropsychological test development, and has been a chronic source of inadequate practice in the discipline.[5 6] Accordingly, in modern neuropsychology the attribution of this type of diagnostic power in respect of a single neuropsychological test, or any set of tests in isolation—that is, in the absence of clinical and collateral data—goes against fundamental practice principles and is vehemently opposed.[5 6] In keeping with this, it is encouraging that top medical professionals involved in concussion management (as cited in Schnirring's article) have emphasised the following: computer based test results should be viewed as only one aspect of an assessment, together with the individual neurological examination, careful analysis of symptom presentation, possible imaging tests, and/or a more detailed neuropsychological examination.

From a neuropsychological perspective, such cautionary comments on computer based screening batteries cannot be too strongly endorsed. In practical terms this amounts to the following: return to play decisions should not be made on the basis of computer based test outcome alone in the absence of access to a clinical assessment of the individual, and importantly, nor should test results be interpreted by a practitioner without neuropsychological expertise. In the event of a medicolegal claim, such non-specialist use of computer based programmes is unlikely to be upheld as ethical practice. Due respect for the complexities involved in neurological interpretations of psychometric test results—that is, the professional terrain of the neuropsychologist—will ensure that the apparent ease of computer based testing does not result in its misuse.

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