



### New protocol for HIV screening for life assurance

**To the Editor:** The insurance industry has used the third-generation ELISA protocol as a screening test for human immunodeficiency virus (HIV) infection over the last number of years. In order to utilise new technology and keep up with developments in the clinical field, the fourth-generation Combi protocol has been developed in consultation with experts and discussion with the National Pathology Group. The third-generation protocol will be used concurrently with the fourth-generation protocol for the next 2 years.

This protocol uses one of the LOASPA approved fourth-generation combination HIV tests (Combi test). The Combi tests for both the HIV antibodies and the virus itself (P24, antigen component), shortening the window period from an average of 16 days to an average of 7 days.

The Medical and Underwriting Standing Committee (MUSC) of the Life Offices' Association of South Africa (LOA) has extensively investigated the results of the new test on local blood samples for the last 18 months. The aim was to ensure that there is not an increase in the false-positive test ratio, as this has serious implications. Two major studies have been done by Ampath and the University of Pretoria to compare the existing ELISA tests to the combination tests. The latter study is ongoing.

As with all underwriting tests, as well as the previous protocol, these tests must be regarded as screening tests and further testing is recommended in the event of a reactive test. Any further tests will be for the client's own cost.

A non-reactive Combi test result is reported as such and no follow-up test is done. A new category of 'low-reactive' results has been defined. Any low-reactive or reactive result will be retested with a third-generation ELISA immuno-assay to retest the antibody component. If this does not confirm the result of the first test, it will be followed with a P24 antigen test to retest the antigen component. Any low-reactive third-generation test will also be followed with a P-2 antigen test. All second and third line follow-up tests will be from a different manufacturer than that of the Combi test (Fig. 1).

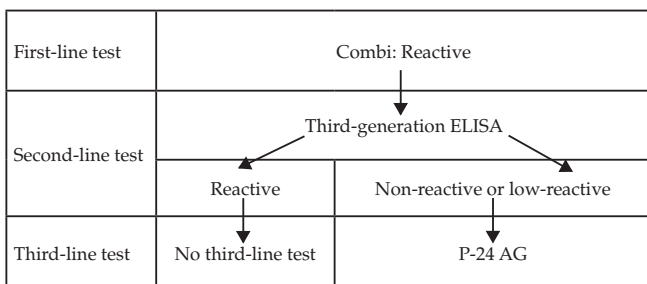


Fig. 1. New fourth-generation HIV test protocol.

Cut-off values for 'reactive' as well as 'low reactive' results for all approved third-generation ELISAs, as well as fourth-generation Combi tests, will be defined from time to time by mutual agreement between the National Pathology Group and the Medical and Underwriting Standing Committee of the LOA.

The LOA is confident that the use of 'low-reactive' values with sequential follow-up tests of both the antigen and antibody components will reduce the possible number of false-reactive results to a minimum.

Further information is available on <http://www.loa.co.za> Chapter 6 HIV Testing Protocol.

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### Streptococcus pneumoniae infections in neonates

**To the Editor:** While *Streptococcus pneumoniae* bacteraemia is not uncommon, clinicians and microbiologists might not think of it in terms of neonatal sepsis. Our interest was aroused recently by two cases of *S. pneumoniae* bacteraemia in neonates.

A 21-year-old primigravida had a spontaneous rupture of membranes at 34 weeks' gestation with clear liquor and no clinical or laboratory features of sepsis. She received intravenous ampicillin and metronidazole, and had a normal vaginal delivery approximately 40 hours after the rupture of membranes. At delivery the baby had good Apgar scores of 9 and 9, but was noted to be in respiratory distress with tachypnoea (respiratory rate of 72 breaths/minute), grunting and subcostal and intercostal recession. He was commenced on intravenous penicillin and gentamicin. *S. pneumoniae* was cultured from the blood, susceptible to penicillin (MIC as determined by Etest of 0.016 µg/ml). He had a good clinical response to 10 days of intravenous penicillin.

A 19-year-old HIV-infected primigravida on highly active antiretroviral therapy (HAART) developed spontaneous rupture of membranes at 28 weeks' gestation and had a normal vaginal delivery approximately 24 hours after rupture of membranes. There was no clinical evidence of sepsis or chorioamnionitis. The mother received no intrapartum antibiotics. At delivery, the baby weighed 985 g and had Apgar scores of 4, 7 and 9 at 1, 5 and 10 minutes respectively. Subsequently he was noted to have alar flaring, subcostal and intercostal recession and grunting. He was transferred to the neonatal intensive care unit where he received ventilation, intravenous penicillin and gentamicin, and surfactant. The baby responded well to 10 days of intravenous penicillin. *S. pneumoniae* was cultured from the blood and the isolate was susceptible to penicillin (MIC of 0.012 µg/ml).



*S. pneumoniae* is an uncommon, but potentially serious neonatal pathogen. Earlier literature stressed early-onset disease with *S. pneumoniae*, similar to neonatal group B streptococcal infections. Most cases of early-onset disease are associated with prematurity and prolonged rupture of membranes. Infection is presumed to be acquired from the mother intra partum, either transplacentally or via ascending infection, as is likely in both the cases reported here, given the rapidity of onset of disease and that both mothers were clinically well. While *S. pneumoniae* is not considered to be part of the normal vaginal flora, transient pelvic colonisation can occur. Pneumococcal pelvic infections may occur in association with surgery, foreign bodies or delivery, and mothers may have invasive pneumococcal disease, e.g. meningitis.

Late-onset pneumococcal disease among neonates has been reported. In a study of *S. pneumoniae* infections in the neonate (SPIN) the mean age of onset was 18.1 days and 90% of the infants were term babies ( $\geq 38$  weeks' gestation). The source of acquisition of pneumococci in late-onset infections is not clear. Vertical transmission from the mother and horizontal transmission from siblings and other adults may occur.

Because of difficulties in diagnosis, the true incidence of *S. pneumoniae* infection in neonates is unknown. In developing countries *S. pneumoniae* probably causes about 25% of neonatal pneumonia and this may be becoming more frequent, particularly with HIV co-infection.

Neonatal diagnosis of *S. pneumoniae* sepsis has had limited significance since the infection would be adequately treated by empiric regimens for neonatal sepsis including penicillin. This may change with the increasing prevalence of non-susceptibility of *S. pneumoniae* to penicillin, particularly where meningitis cannot be excluded. In these settings a third-generation cephalosporin (such as cefotaxime or ceftriaxone) would be more appropriate. If resistance to the third-generation cephalosporins is prevalent, vancomycin may be indicated.

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## Educating bonesetters

**To the Editor:** We appreciate the noble work of Dr Onuminya in his community.<sup>1</sup> However, the attempt to bridge the gap between orthodox and traditional medicine is not new. Shah *et al.*<sup>2</sup> undertook training programmes for rural health practitioners in Nepal. At evaluation after 6 years they found significant improvements in the knowledge base and working skills of these practitioners after undergoing training programmes. In a 2-year prospective study, Eshete<sup>3</sup> found a reduction in amputation rates after a one-day instructional course offered to bonesetters in Ethiopia.

Because of local high patronage it seems that the traditional system of bone setting is here to stay. The above pilot reports<sup>1-3</sup> indicate that it is possible to educate bone setters and reduce morbidity. Because of widespread prevalence of bonesetters in developing countries (in India it is estimated that there are 70 000 traditional healers and bonesetters who treat 60% of all trauma patients), a national initiative is required to include them in the mainstream health care systems of developing countries. These bonesetters often work in remote places and villages where there are no trained doctors. With some basic education and training in the field of orthopaedic care they can become a most effective vehicle for patient care and referral.

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## Does access to better housing affect personal quality of life and well-being?

**To the Editor:** Since 1994 a concerted effort has been underway to improve the living conditions of all South Africans through providing/upgrading housing.<sup>1</sup> Although over 1 million houses had been delivered or were under construction by the end of 2000,<sup>2</sup> there is a paucity of information on the short- and long-term effects of housing delivery on quality of life and well-being. A study was therefore conducted involving 334 adult residents of an informal settlement in Soweto in 1999 (before relocation to a new housing estate or site tenure allocated), and in 2001 and 2003 (after relocation). Comparisons were made



between three groups, namely new housing estate residents (N = 73), site tenure residents (N = 158), and a group living in informal housing (N = 103).

From the repeated measures analyses, estimated marginal means showed significant group and time effects for overall quality of life (Fig. 1). Although there were no differences between new housing estate and site tenure residents with regard to quality of life (p > 0.05), both these groups had a better quality of life than informal housing residents (p < 0.05). This finding was not unexpected as previous research has shown that quality of life is very poor in the latter.<sup>3</sup> In 2001, quality of life was significantly better than in 1999 (p < 0.01), but returned to similar levels to 1999 in 2003 (p > 0.05). It is possible that changes in living circumstances in 2001 were responsible for this effect. A more likely explanation is provided by the classic study of the effects of fortune and misfortune on quality of life.<sup>4</sup> The study found that lottery winners' quality of life shot up, while that of accident victims decreased dramatically immediately after the event, only to return to previous levels at a later date.<sup>4</sup>

There were no significant group or time effects (p > 0.05) for wellbeing (Fig. 1). This lack of group or time effects provides support for the model of homeostatic wellbeing.<sup>5</sup> Analogous to the homeostatic maintenance of blood pressure and temperature, this model considers that wellbeing is actively controlled and maintained by psychological factors that function under the influence of personality.<sup>5</sup>

Overall findings revealed that access to better housing positively affects quality of life; there is habituation of quality of life in the long term, as people adapt to both positive and negative

life events; and, irrespective of living conditions, wellbeing is maintained at a homeostatic level.

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Post-exposure prophylaxis for rape survivors

To the Editor: In a recent incident in the Eastern Cape a cocaine addict was arrested on drug possession charges and put in a holding cell. Sadly, during his time in the cells he was raped. Naturally the victim was very concerned about the possibility of having contracted HIV. However, the attending district surgeon refused to provide antiretrovirals (ARVs) as part of post-exposure prophylaxis (PEP). SANCA drug counsellors were faced with this distressed and traumatised victim when he turned to them for help after his release and were quite perplexed by the failure of the district surgeon to prescribe PEP for 28 days.

Why were the ARVs not provided? One possibility is that there may have been a supposition of potential poor medication adherence. Predicting a person's adherence based on speculation would seem to be unfair. Is there in fact proof that substance dependence causes poor adherence to ARV medication? The evidence is mixed, with a review of the issue showing that 11 of 26 studies found no association with substance abuse.<sup>1</sup>

The second possibility is that there may have been a concern around the pharmacological interaction between cocaine and ARVs. One review on the issue does mention an increased risk of a cocaine overdose with antiretroviral therapy, citing that the administration of a potent CYP 3A4 inhibitor could result in a cocaine overdose. ARVs that induce CYP 3A4 activity, such as nevirapine, may shift the metabolism of cocaine from hydroxylation to N-demethylation and create a higher level of the potentially toxic metabolite.<sup>2</sup> However the article does not mention the likelihood of this event occurring, and nevirapine is in any case not used in any PEP regimens.

But are any of these issues relevant considerations in this case? Shouldn't all rape survivors have the right to ARVs,

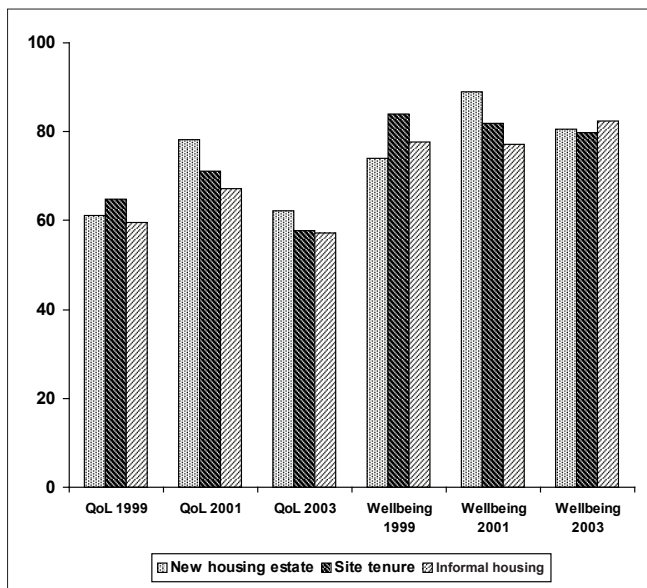


Fig. 1. Overall quality of life (QoL) and wellbeing in 1999, 2001 and 2003 among new housing estate, site tenure and informal housing residents.



whether or not they are drug dependent? In our opinion this should be a critical part of the medical and psychiatric treatment of the traumatic event.

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## Triage in emergency departments

**To the Editor:** We value the opportunity to reply to the letter by MacFarlane and Naidoo<sup>1</sup> regarding triage in South African emergency departments (EDs). We note with deep regret the recent passing of Professor MacFarlane; the whole emergency medicine community will feel his absence.

The triage tool they propose is a modification of a modified tool – while both the original Australasian Triage Score and the Canadian modification have been shown to work well at identifying priorities in their settings, there is no evidence that this could be extrapolated to our setting. We are not aware of any evidence that the suggested modification is evidence based.

Furthermore, our own studies have shown that the reliability and validity of the triage scores applied are related to the complexity of the tool and the level of the triage nurse. We would argue that the suggested tool is too complex for enrolled nurse assistants (ENAs)/enrolled nurses. It is in this group of health care professionals that an available pool of triage nurses is likely to be found, and it is this group that the Cape Triage Score (CTS) is aimed at.

As the authors point out, the CTS was developed by the Cape Triage Group and reported on in this *Journal*.<sup>2</sup> This tool was

launched across all public EDs in the Western Cape in January 2006, and is also used throughout the MediClinic group nationally. The tool was validated on 25 000 patients in both the public and private sector, and has been shown to dramatically reduce ED waiting times. We have submitted the findings of one large study to this *Journal*, and a number of other articles are being written up for publication at this time. While it would be inappropriate to pre-empt these articles, we can state that the CTS clearly identifies the most ill patients, and performs well in distinguishing between other groups of acuity. It predicts death, the need for admission, resource usage and departmental length of stay. It further reduces mortality and improves waiting times. Finally, current studies show that ENAs can use the tool as accurately as doctors or registered nurses.

We held the inaugural meeting of the South African Triage Group (SATG) in Durban in June 2006, consisting of 59 representatives from all nine provinces. The SATG has the aim of introducing the CTS as a national triage tool – the South African Triage Scale (SATS) – throughout the country. The national Department of Health has been approached to facilitate this process. We will keep readers of this *Journal* informed of progress in this regard.

The SATS is a living tool. Research will continue, and if changes are required they will be made in time for the International Emergency Medicine Conference in South Africa (October 2007). In the meantime the SATS is a tool that has been developed to fit local needs, and that has been shown to have a significant positive impact on patient care.

The Emergency Medicine Society of South Africa has provided the SATG with a 'home', while the Council for Health Service Accreditation of South Africa has recognised this triage tool.

Readers wishing to receive more information on the SATS should contact [capetriage@bvr.co.za](mailto:capetriage@bvr.co.za) or visit [www.triagesa.co.za](http://www.triagesa.co.za)

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