Short cuts

What's new in the other general journals

How information on the performance of diagnostic tests is presented doesn't seem to matter

There's something of an industry among evidence based medicine experts in devising ways to present to practising clinicians numerical information on the performance of diagnostic tests. How useful they are in everyday practice is another matter. In a randomised experiment at a continuing medical education conference, 183 physicians were asked to estimate probabilities of common illnesses from vignettes of six patients. Each vignette described the symptoms and risk profile of the patient and contained the result of a commonly used diagnostic test. The accuracy of the test was described either in terms of sensitivity and specificity or as a likelihood ratio or as a simple graphic representation of the likelihood ratio. Participating doctors were randomly allocated to receive one of these descriptions.

Differences in estimates of the probability of disease between the groups assigned to different presentations were very small after the test. The authors admit that their findings are preliminary but think that presenting test performance as a likelihood ratio does not have much influence on the way doctors interpret the results. Another possibility, of course, is that clinicians are so familiar with the business of applying the results of diagnostic tests to patient management that they simply do not need these heuristics.

Annals of Internal Medicine 2005;143:184-9

Mortality in people with end stage renal disease depends on method of dialysis

People with end stage renal disease may receive treatment with either peritoneal dialysis or haemodialysis. Which is better? In the absence of data from randomised controlled trials, we cannot know for sure, but follow-up of a large group of such patients found that mortality was higher in those receiving peritoneal dialysis, although the difference became statistically significant only during the second year of treatment.

More than 1000 patients at 81 centres in 19 states of the United States took part. A quarter of the patients receiving peritoneal dialysis and 5% of those receiving haemodialysis switched methods

at least once within seven years. Not surprisingly, the reason for switching was often a consequence of the first method used. Patients who were initially treated with peritoneal dialysis tended to be healthier and of higher socioeconomic status than patients receiving haemodialysis. After adjusting for these baseline differences, risks for death among patients receiving peritoneal dialysis compared with those receiving haemodialysis were 1.39 (95% CI 0.64 to 3.06) during the first year of treatment and 2.34 (1.19 to 4.59) during the second year. The difference was greater when the analysis was restricted to patients who were treated only in clinics offering both types of dialysis. Further studies are now needed to evaluate a possible survival benefit of a timely change from peritoneal dialysis to haemodialysis.

Annals of Internal Medicine 2005;143:174-83

Arm circumference is a reliable indicator of severe malnutrition

Proper treatment of severe malnutrition in children, which includes broad spectrum antibiotics, vitamin and mineral supplements, careful attention to fluid and electrolyte intake, and use of F75 and F100 milk formulas, substantially reduces mortality. But accurate diagnosis isn't as easy as one might think. The World Health Organization's definition relies on measurement of height, which is hard in a child who is ill and distressed; weight, which requires calibrated and functioning scales; and the calculation of a weight for height z score, which needs a chart. A study from a rural hospital in Kenya has now shown that a much simpler measurement, the circumference of the middle upper arm, is at least as good.

A total of 8500 children aged 1-5 years admitted to the hospital were measured in both ways. A glance at the receiver operating characteristic (ROC) curves show how closely the two methods correspond in their ability to predict mortality. Further work is needed in settings of differing malaria transmission and HIV prevalence to be sure that the findings are generally applicable. But the simplicity and low cost of measurement of middle upper arm circumference and the fact that it can be carried out with equipment no more complicated than a non-stretch tape measure mean that it will surely prove useful.

JAMA 2005;294:591-597

Fetal malnutrition may be a cause of schizophrenia

During the second world war, between October 1944 and May 1945, Dutch people, especially those living in large cities, experienced severe famine as a result of a blockade of food transport imposed by occupying German forces. The risk of schizophrenia in people who were conceived during this time and born to malnourished mothers was twice the usual rate—one of the pieces of evidence that led to the idea that schizophrenia might be, at least in part, a neurodevelopmental disorder.

This finding has now been replicated in another setting. The Wuhu region of Anhui province in China was seriously affected during the famine of 1959-61. Using the medical records of the single psychiatric hospital that serves the region, researchers calculated the risk of schizophrenia among its inhabitants according to year of birth. People born in 1960 and 1961, and who therefore experienced the famine in fetal life, were twice as likely to be diagnosed as having schizophrenia as people born in 1959 or 1962.

Numerous interpretations of the increased risk of schizophrenia found in the Dutch famine have been proposed. In addition to fetal malnutrition, they include hormonal changes in response to the exceptionally severe winter that coincided with the famine, a toxic substance present in the tulip bulbs that the Dutch people were reduced to eating, the rapid re-feeding that occurred when the blockade was lifted, and some unidentified factor associated with the German occupation. As the accompanying editorial observes, the

replication of the Dutch findings in China, with much larger numbers of cases in quite different circumstances and in an ethnically and culturally dissimilar population, makes most of these explanations untenable. It now seems likely that it is indeed prenatal exposure to famine that is to blame, a conclusion that makes the continuing starvation in parts of Africa even more worrying.

JAMA 2005;294:557-62

Cognitive therapy reduces the frequency of further suicide attempts

Suicide is the fourth leading cause of death for adults between the ages of 18 and 65 years in the United States. Several studies have shown that one of the strongest risk factors for completed suicide is a history of previous attempts. Attempted suicide is much more common than completed suicide and so provides an opportunity to intervene in a high risk group.

120 adults who had attempted suicide and who had received a medical or psychiatric assessment within 48 hours were randomly allocated either to receiving 10 sessions of cognitive therapy or to usual care. During 18 months of follow-up, participants offered cognitive therapy were only half as likely to repeat a suicide attempt as those who received usual care. This may have been because they also tended to report a reduction in severity of depression and in feelings of hopelessness. However, rather puzzlingly, there were no differences between the groups in rates of suicide ideation. The results confirm those of a previous smaller randomised controlled trial of a similar intervention

JAMA 2005;294:563-70

Exercise capacity predicts mortality in women

Cardiorespiratory fitness, measured as exercise capacity, is a strong predictor of risk of death among both women and men. It holds good both in apparently healthy people and in those with cardiovascular and other diseases. Normative values for predicting exercise capacity at different ages are well established for men, even if not much used, but, until this study, no corresponding values were available for women.

Using data from 5721 asymptomatic women volunteers who took an exercise test, the investigators first developed a nomogram to compare a woman's exercise performance with what would be expected for her age. Then, during a follow-up period of eight years, they evaluated how well any shortfall predicted mortality among both the volunteers and in a large group of women who had had exercise testing for symptoms of suspected coronary artery disease. Risk of death among asymptomatic women whose exercise capacity was less than 85% of the value predicted by the nomogram was twice that among women whose exercise capacity was more than this value. The results were similar in the cohort of symptomatic women.

An accompanying editorial observes that, although exercise testing is widely used for investigating cardiac symptoms, clinicians tend to restrict their focus to the electrocardiogram. Given the prognostic value of cardiovascular fitness and the fact that it can be improved by small amounts of regular exercise, it may be time to rethink.

New England Journal of Medicine 2005; 353:468-75

Cambodian refugees continue to have high rates of mental illness 20 years after resettlement

Understandably enough, refugees from war zones have a high risk of acute psychiatric illness. But how do they fare in the long term? The findings of a cross sectional survey in Cambodian refugees living in the United States indicates that their mental health continues to be poor for many years.

Trained interviewers, themselves Cambodian refugees, carried out face to face interviews in the Khmer language in a random sample of households in one community in California. Nearly all of the people interviewed spoke of experiencing appalling trauma before immigration. Most had nearly starved to death and 90% had had a family member or friend murdered. Although more than 20 years had passed since they arrived in the United States, rates of post-traumatic stress disorder and major depression were extremely high. Only about 30% of refugees were free of mental health problems.

There has been some concern that, in previous studies of refugees, the sampling methods and screening instruments used have led to the magnitude of mental health problems being overestimated. This survey finds the opposite. As the authors point out, the lives of refugees continue to be fraught with difficulties for which they were inadequately prepared. Many had been uneducated farmers, illiterate even in their native language. They entered the US with no marketable skills and significant mental health problems. Only a minority have

learnt to speak English well. Asylum policies for future refugees need to be thought about not only in terms of removing vulnerable populations from life threatening danger but also with regard to promoting long term health and wellbeing.

JAMA 2005;294:571-9

Screening blood donations for West Nile virus has been effective

West Nile virus didn't arrive in the United States until 1999, but it spread fast and by 2003 was causing nearly 3000 cases of meningoencephalitis and 250 deaths each year. In 2002, after four recipients of organs from a single donor acquired the disease, it became clear that transmission could occur through blood transfusion, and a programme for detecting the virus in blood donations was started rapidly.

Two recent reports analyse the results. The positive yield varied hugely between states and by time of year. The highest rates occurred during a six week period from mid-July through mid-August. In 2003 and 2004, testing identified 540 positive donations, of which 67% were IgM negative and probably infectious.

Initially, screening was performed on samples pooled from 16 donors, but the viraemia of West Nile virus infection is of low titre and borders on the lower limit of sensitivity of the test. In 2004 the screening strategy was modified to include testing individual donations in regions with a high prevalence of positive results. This resulted in a 32% increase in identification of donations positive for West Nile virus.

It looks as if using a nucleic acid amplification test to screen for West Nile virus has made the blood supply in the US safer. There were no confirmed cases of West Nile virus infection among recipients of tested blood.

New England Journal of Medicine 2005;353:451-9, 460-7

Christopher Martyn associate editor
cmartyn@bmj.com