PUBLIC HEALTH ABSTRACTS

Professor James S. Lawson, Professor and Head of the School of Health Services Management at the University of NSW, has prepared the following public health items from the literature.

ASPIRIN HELPS REDUCE HEART DISEASE FATALITIES

In the prevention of cardiovascular events, aspirin has been shown to be beneficial in several trials. A Swedish trial with 2,035 patients demonstrated a 34 per cent reduction in myocardial infarction and sudden death after the taking of aspirin plus sotalol.

Juul-Moller S, Edvardsson N, Jahnmatz B, Rosen A et al. Double-blind trial of aspirin in primary prevention of myocardial infarction in patients with stable chronic angina pectoris. *Lancet* 1993; 340:1421-1425.

MEASURING LOW BONE DENSITY AT THE HIP

Prospective studies have shown that women with low bone density in the forearm or foot are at increased risk of hip fracture. An American study of more than 9,000 women has clearly demonstrated there is a substantial advantage in measuring the bone density of the neck of the femur as it is a much better predictor than other measurements. The measurements can be done reasonably easily and at reasonable cost. It is argued that efforts to prevent hip fractures should focus on women who have measured low hip bone density.

Cummings SR, Black DM, Nevitt MC, Browner W et al. Bone density at various sites for prediction of hip fractures. *Lancet* 1993; 341:72-75.

AUSTRALIAN EXPERIENCES WITH HEPATITIS B VACCINATION

The desirability of vaccinating high-risk individuals against hepatitis B virus is obvious. Before the advent of immunisation against hepatitis B virus, health care workers who had frequent contact with blood products had 5 to 10 times more risk of contracting the disease than the general population. A Melbourne group has determined that intradermal hepatitis B vaccination is a practical and inexpensive means of providing protection against hepatitis B in healthy young adults.

Thompson SC, Darlington R, Tallent D, Robins-Browne R et al. Effectiveness of low-dose intradermal hepatitis B vaccination. *Med J Aust* 1993; 158:372-375.

ETHNIC DIFFERENCES IN THE INCIDENCE OF SUDDEN INFANT DEATH SYNDROME

Sudden infant death syndrome is the most important cause of death in Australian and United Kingdom children aged between 1 and 12 months. The most appealing hypothesis at present has been developed by McKenna who argues that human infants are likely to experience problems in the regulation of their breathing because their immaturity coincides with a period of change that is specific to humans — that of the development of language. Thus development of crying and of developing speech requires sophisticated learned control of breathing. To this, McKenna adds the major change in Western industrial societies of placing infants to sleep on their own. Thus Western infants sleeping alone lose the external stimulation that may stabilise breathing.

These hypotheses are strongly supported by observations that the sudden infant death syndrome is rare in Hong Kong, Africa and Asia as compared to the United Kingdom, Ireland and Australia. A recent UK study has also confirmed the much lower incidence of deaths in the UK among infants of Bangladesh, as compared to UK ethnicity. The Bangladeshi infants sleep close to their mothers and others, both day and night, in complete contrast to the English parents.

Gantley M, Davies DP and Murcott A. Sudden infant death syndrome: links with infant care practices. *Br Med J* 1993; 306:16-20.

PUBLIC HEALTH LESSONS FROM VICTORIA

Coordinated legislation and voluntary action has been shown in Victoria to have a substantial impact on public behaviour. John Powles and Sandra Gifford have demonstrated that the introduction and enforcement of drink-driving laws and speed limits, backed up by education programs, have produced a large reduction in deaths from traffic crashes in the past decade. Similarly, they have shown that tobacco smoking has been reduced probably as a consequence of bans on advertising supplemented by the replacement of tobacco sponsorship of sports and the arts from special tobacco sales taxes.

Powles JW and Gifford S. Health of nations: lessons from Victoria, Australia. *Br Med J* 1993; 306:125-127.

CERVICAL CANCER — THE HUMAN PAPILLOMA VIRUS AND TOBACCO SMOKING

It has been established that cervical infection with the human papilloma virus is important in the causation of cervical cancer. In addition, it has long been known that tobacco smoking is a risk factor for cervical cancer. A new study of 180 women which controls for variables such as sexual behaviour and age has indicated there is an association between tobacco smoking and cervical cancer. The reason for this association is speculative. Smoking might produce a local immunological defect which may facilitate the infection and persistence of the human papilloma virus.

Burger MPM, Hollema H, Gouw ASH, Pieters WJLM and Quint WGV. Cigarette smoking and human papilloma virus in patients with reported cervical cytological abnormality. *Br Med J* 1993; 306:749-752.

SAVING THE FORESKIN

Knowledge about human foreskins in boys is necessarily limited because of the historical widespread practice of circumcision. A review of the limited knowledge based on studies in the UK has shown that the medical indications for circumcision are as low as 1 to 2 per cent of all boys. In this context it is important to indicate that it is normal for only 4 per cent of infants at birth to have fully retractile prepuces. By the age of 5 this rises to about 90 per cent of boys until by the age of 17 only 1 per cent remain non-retractile. This basic knowledge about what is normal is important in campaigns to save the foreskin.

Gordon A and Collin J. Save the normal foreskin. *Br Med J* 1993; 306:1-2.

A VACCINE FOR MALARIA?

Malaria is one of the leading causes of disease and death in large parts of the world. A vaccine has been developed and shown to be protective for about 50 per cent of those at risk in a major study in Colombia. This study has been treated

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Whooping cough

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Efficacy of whooping cough vaccine
People fully immunised were five times less likely to contract whooping cough compared with people with other immunisation status (i.e. partially immunised, homeopathically immunised, unimmunised or unknown immunisation status). OR = 0.20; 95%CI 0.03-0.84. This is a statistically lower risk in fully immunised people.

Efficacy of homeopathic immunisation
The comparison of the efficacy of homeopathic immunisation with no immunisation showed no difference in controlling whooping cough. (OR = 2.08; 95%CI 0.21-22.15). While not statistically significant, the results suggest that TA immunisation is more protective against whooping cough than homeopathic immunisation. (OR = 0.13; 95%CI 0.01-1.18).

Effect of whooping cough morbidity on the community
During the outbreak, 24 per cent of respondents stayed away from school or work because they had whooping cough and 5 per cent stayed away in order to avoid catching it. The average number of days away from school or work during the outbreak was 3.7.

Discussion

The Public Health Act 1991 requires medical practitioners, hospital chief executive officers and laboratories to notify cases of whooping cough to the local PHU, but in this study only one-third of cases of whooping cough were notified by a medical practitioner. The other cases were detected by means of the study questionnaire.

The study suggested that TA immunisation was an effective means of protecting people against whooping cough. However, three respondents who were fully immunised with TA did contract the disease. It is estimated that TA immunisation provides about 80 per cent protection against whooping cough and this protection is known to wane over time[1]. Infants aged under one year (who are most at risk of serious consequences from whooping cough) obtain the highest level of protection from immunisation. Older children and teenagers have an increased risk of acquiring and transmitting disease.

The study results suggested that homeopathic immunisation was no more effective in protecting against whooping cough than no immunisation at all.

Limitations of the validity of the findings were:

- Possible recall bias. Respondents were required to recall events which had occurred at least six weeks previously.
- Self-report of immunisation status. It was not possible to verify self-reported immunisation.
- Power of the study. The sample size was too small to demonstrate possibly significant effects.

Conclusions

To minimise the transmission of whooping cough in school-age children, a fifth dose of whooping cough vaccine at the time of the pre-school booster may be warranted[2]. Whooping cough immunisation of adolescents and adults could also be considered with the routine 10-year tetanus and diphtheria boosters.

Evidence from this study suggested homeopathic immunisation was not effective in preventing whooping cough, in contrast to TA.

1. National Health & Medical Research Council. Immunisation Procedures. 4th Edition. Australian Government Publishing Service, Canberra 1991.
2. Australian College of Paediatrics. Report of the immunisation subcommittee on whooping cough immunisation. Policy Statement. *Journal of Paediatric and Child Health* (1991) 27:16-20.

Public health abstracts

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with considerable skepticism despite its apparent scientific rigour. Only time will tell whether this skepticism is justified.

Valero MV, Amador LR, Galindo G, Figueroa J et al. Vaccination with SPf66, a chemically synthesized vaccine, against Plasmodium falciparum malaria in Colombia. *Lancet* 1993; 341:705-710.

High dietary calcium reduces the incidence of kidney stones

Kidney stones are a major cause of morbidity. A high dietary calcium intake has been strongly suspected of raising the risk that a kidney stone will form. However, an enormous study involving more than 45,000 men in the United States has shown that the reverse is the case, that is, a high dietary calcium intake actually decreases the risk of kidney stones. This finding is intriguing and perhaps counter-intuitive. A possible explanation involves the role of the chemical oxalate. Restricted calcium intake increases the absorption of oxalate in the gut. This is a complex issue which also involves dietary fat which binds with calcium in the gut. Accordingly, the general policy of calcium restriction for patients who have had kidney stones containing calcium should be re-examined.

Curhan GC, Willett WC, Rimm EB and Stampfer MJ. A prospective study of dietary calcium and other nutrients and the risk of symptomatic kidney stones. *New Engl Med J* 1993; 328:833-838.

Elderly donors can offer renal transplants

Renal transplantation is the treatment of choice for end-stage renal failure providing a vastly improved quality of life. An Australian group at the Royal Melbourne Hospital has demonstrated that the use of elderly patients, most of whom have died from stroke, is an excellent source of effective renal donors. In this context, there are thought to be more than 1000 patients awaiting renal transplantation, with fewer than 500 being performed each year.

Smith KCG, Martyn BN, Walker RG, Davis SM et al. The potential for elderly donors to increase renal transplantation rates in Australia. *Med J Aust* 1993; 158:588-590.