

Asian-born mothers,<sup>3</sup> we predict that the prevalence of GDM in Victoria will rise.

Davey correctly points out that our article does not refer to a relevant 1997 study by the Toronto group.<sup>4</sup> However, we do actually refer to a later publication by the same group.<sup>5</sup>

The problem of ethnicity and migration arises in studies of conditions that are not only polygenic but also a result of complex interactions between a person's genes and his or her environment.

Lastly, the source of information on macrosomia was 1996 population data. We have since produced a percentile chart of weight (g) for gestational age (weeks) based on 15 years of Victorian data.<sup>6</sup>

1. Stone CA, McLachlan KA, Halliday JL, et al. Gestational diabetes in Victoria in 1996: incidence, risk factors and outcomes. *Med J Aust* 2002; 177: 486-491.
2. Davey RX, Hamblin PS. Selective versus universal screening for gestational diabetes mellitus: an evaluation of predictive risk factors. *Med J Aust* 2001; 174: 118-121.
3. Riley M, Halliday J. Births in Victoria 1999-2000. Melbourne: Perinatal Data Collection Unit, Victorian Government Department of Human Services, 2001.
4. Naylor CD, Sermer M, Chen E, Farine D. Selective screening for gestational diabetes mellitus. Toronto Trihospital Gestational Diabetes Project Investigators. *N Engl J Med* 1997; 337: 1594-1596.
5. Sermer M, Naylor CD, Farine D, et al. The Toronto Tri-Hospital Gestational Diabetes Project. A preliminary review. *Diabetes Care* 1998; 21 Suppl 2: B33-B42.
6. Halliday J, Ellis I, Stone C. WUDWAW: "Who usually delivers whom and where". Report on models of antenatal care. Melbourne: Perinatal Data Collection Unit, Department of Human Services, 1999. □

## Injecting drug use in Australia: needle/syringe programs prove their worth, but hepatitis C still on the increase

Michael Copeman

Paediatrician, Department of Paediatrics, Manly and Mona Vale Hospitals, Darley Road, Manly, NSW 2095  
mccopeman@bigpond.net.au

**TO THE EDITOR:** Law and Batey<sup>1</sup> rely on a flawed study for their conclusion that needle/syringe programs (NSPs) have saved lives and money.

The study in question<sup>2</sup> compared the incidence of HIV and hepatitis C virus (HCV) infections in cities round the world and concluded that cities with NSPs had achieved reductions in HIV incidence that were not seen in cities without NSPs. However, interestingly, no similar reduction in HCV incidence was reported.

Detailed reading of the study shows that a third of the cities (22/67) without

NSPs were in Thailand — a country in which, unfortunately, there are many other reasons why HIV incidence is increasing rapidly. Given the large proportion of Thai cities included in the study, it is plausible that the rapid rise in HIV incidence in these cities biased the overall results of the study, leading to an erroneous conclusion that NSPs themselves were associated with a reduction in HIV incidence in cities worldwide.

Further reading of the study shows that HCV incidence was not measured in any studies in Thailand. So, the reported lack of effect of NSPs on HCV incidence depends on comparisons between cities with and without NSPs from other parts of the world, perhaps less affected by some of the problems in Thailand.

In conclusion, if Thai cities had been excluded from the study, it seems likely that no change in the incidence of either HCV or HIV might have been found in association with NSPs. The original study needs urgent re-analysis to see if this is in fact the case.

1. Law MG, Batey RG. Injecting drug use in Australia: needle/syringe programs prove their worth, but hepatitis C still on the increase. *Med J Aust* 2003; 178: 197-198.
2. Commonwealth Department of Health and Ageing. Return on investment in needle and syringe programs in Australia. Canberra: Department of Health and Ageing, 2002. Available at: <http://www.health.gov.au/pubhlth/publicat/hac.htm> (accessed Jun 2003). □

Matthew G Law,\* Robert G Batey†

Statistician, National Centre in HIV Epidemiology and Clinical Research, University of New South Wales, 376 Victoria Street, Darlinghurst, NSW 2010; †Clinical Chair, Division of Medicine, John Hunter Hospital, Newcastle, NSW. mlaw@nchecr.unsw.edu.au

**IN REPLY:** Copeman's criticism of the report *Return on investment in needle and syringe programs in Australia*<sup>1</sup> is essentially that the comparison of the effectiveness of needle/syringe programs (NSPs) is confounded by other factors. This point, and its implications for the results, was extensively discussed in that report. Copeman suggests that the estimated reduction in HIV due to NSPs might largely be attributable to the inclusion of data from many cities in Thailand that do not have NSPs. This criticism is not supported by the data. A sensitivity analysis including only cities from developed countries was performed at the time of the report (see Methods, Section 3.1.2, page 13<sup>1</sup>), but was not included among the

report's results because of space constraints and because it didn't alter the main findings. The analysis of cities in developed countries showed an overall mean reduction in the annual rate of change in HIV seroprevalence of -30.0%, compared with -24.7% based on all cities, albeit with lower statistical significance ( $P=0.105$  v  $P=0.057$ ), reflecting the loss in power through exclusion of cities.

Copeman's assertion that the report indicated that NSPs had no effect on rates of hepatitis C virus (HCV) infection is incorrect. The report estimated that, following the introduction of NSPs, HCV prevalence among injecting drug users declined by 2% per annum, compared with no introduction of NSPs ( $P<0.001$ ).

The report is freely available on the Internet,<sup>1</sup> and we encourage readers to look at it for themselves.

1. Commonwealth Department of Health and Ageing. Return on investment in needle and syringe programs in Australia. Canberra: Department of Health and Ageing, 2002. Available at: <http://www.health.gov.au/pubhlth/publicat/hac.htm> (accessed Jun 2003). □

## Statistical methods in clinical trials

Peter J Goadsby

Professor of Clinical Neurology, Institute of Neurology, National Hospital for Neurology and Neurosurgery, Queen's Square, London, WC1N 3BG, United Kingdom. peterg@ion.ucl.ac.uk

**TO THE EDITOR:** GebSKI and Keech describe with clarity and accuracy the important basic concepts of statistical analysis for physicians.<sup>1</sup> I would like to draw attention to two issues.

Firstly, the authors refer to common measurement scales that are used in medicine. It is crucial to understand the limits of a measurement to begin to appreciate results from any study. They describe the continuous scale and offer blood pressure and temperature measurements as examples. This scale refers to data determined such that the distance between any two points is known and measurable. Siegel used the term "ratio scale" if there was a true zero point to the measurement.<sup>2</sup> This contrasts to an ordinal categorical scale, in which the intervals are not constant. The scale referred to can be transformed, and is anchored with respect to