

Appendix

Oral fluid testing procedures

Testing for antibodies to HIV was done with the Murex 1 + 2 GACELISA (VK61, Abbott Diagnostics, Maidenhead),^{22 23} with positive results confirmed by using a modified Clonesystems enzyme immunoassay (EIA; Biostat Diagnostics, Stockport). Anti-HBC testing used Murex ICE (Abbott Diagnostics, Maidenhead), with positive results confirmed with an in-house radioimmunoassay.²⁴ Testing for antibodies to hepatitis C virus used a modified protocol for the Ortho HCV 3.0 SAvE enzyme linked immunosorbent assay (ELISA; product No 940982, Ortho Diagnostics, Amersham); borderline results were further investigated with a modified Chiron recombinant immunoblot assay (RIBA) HCV 3.0 (product No 930780, Ortho Diagnostics, Amersham).

Estimation of sensitivity and specificity of oral fluid tests

The Ortho HCV 3.0 eSAVE ELISA was selected for the development of an assay for antibodies to hepatitis C virus in oral fluid on the basis of its superior sensitivity on serum testing. Dilutions were prepared of well characterised serum specimens positive and negative for antibodies to hepatitis C virus in which the IgG content was similar to that found in oral fluid. These dilutions were used to optimise conditions for the assay such that the discrimination between positive and negative specimens was maximised. Specimen volume and the duration, temperature, and effect of agitation on incubation of the specimen, conjugate, and substrate were studied. By using the optimum conditions identified, oral fluid specimens collected by Orasure from 291 blood donors who were negative for antibodies to hepatitis C virus were tested to establish the cut off for the assay. Tests on Orasure specimens from 318 people serologically negative for antibodies to hepatitis C virus were all negative (specificity 100%; 95% confidence interval 98.8% to 100%). Of 216 Orasure specimens from seropositive subjects, 188 (sensitivity 87.0%; 82.6% to 91.5%) were positive. Of the 216 oral fluid specimens from seropositive patients, however, 126 had been collected from patients with liver disease, and 116 (92%; 85.9% to 96.1%) of these were positive. The remaining 90 seropositive specimens came from a randomly sampled population of injecting drug users from London. Of these, 72 (80.0%; 70.2% to 87.7%) yielded positive results. As this latter group probably better represents the population of prisoners at risk of hepatitis C infection, this observation was used as a guide to the sensitivity of oral fluid antibodies to hepatitis C virus testing in the population of prisoners described in this paper.

- 1 Malliori M, Sypsa V, Psychogiou M, Touloumi G, Skoutelis A, Tassopoulos N, et al. A survey of bloodborne viruses and associated risk behaviours in Greek prisons. *Addiction* 1998;93:243-51.
- 2 Rotily M, Galinier-Pujol A, Vernay-Vaisse C. Risk behaviours of inmates in south-eastern France. *AIDS Care* 1995;7(suppl 1):89-93.
- 3 Crofts N, Stewart T, Hearne P, Ping XY, Breschkin AM, Locarnini SA. Spread of bloodborne viruses among Australian prison entrants. *BMJ* 1995;310:285-8.
- 4 O'Mahony P. *Mountjoy prisoners: a sociological and criminological profile*. Dublin: Stationery Office, 1997.
- 5 Dolan K, Hall W, Wodak A. The provision of methadone within prison settings. In: Ward J, Mattick RP, Hall W, eds. *Methadone maintenance*

treatment and other opioid replacement therapies. Amsterdam: Harwood Academic, 1998:379-95.

- 6 Ministerial Task Force on Measures to Reduce the Demand for Drugs. *Second report*. Dublin: Department of the Taoiseach, 1997.
- 7 Bird AG, Gore SM, Jolliffe DW, Burns S. Anonymous HIV surveillance in Soughton Prison, Edinburgh. *AIDS* 1992;6:725-33.
- 8 Bird AG, Gore SM, Burns SM, Duggie JG. Study of infection with HIV and related risk factors in young offenders' institution. *BMJ* 1993;307:228-31.
- 9 Gore SM, Bird AG, Burns SM, Goldberg DJ, Ross AJ, Macgregor J. Drug injection and HIV prevalence in inmates of Glenochill prison. *BMJ* 1995;310:293-6.
- 10 Bird AG, Gore SM, Cameron S, Ross AJ, Goldberg DJ. Anonymous HIV surveillance with risk factor elicitation at Scotlands largest prison, Barlinnie. *AIDS* 1995;9:801-8.
- 11 Gore SM, Bird AG, Burns S, Ross AJ, Goldberg D. Anonymous HIV surveillance with risk-factors elicitation: at Perth (for men) and Cornton Vale (for women) prisons in Scotland. *Int J STD AIDS* 1997;8:166-75.
- 12 Principia Products. *Remark office OMR-version 4*. Paoli, PA: Principia Products, 1997.
- 13 Sall J, Lehman A. (SAS Institute). *JMP start statistics:version 3.2*. Belmont, New York: Duxbury, 1996.
- 14 Bird AG, Gore SM, Hutchinson SJ, Lewis SC, Cameron S, Burns S. Harm reduction measures and injecting inside prison versus mandatory drugs testing: results of a cross sectional anonymous questionnaire survey. *BMJ* 1997;315:21-4.
- 15 Bellis MA, Weild AR, Beeching NJ, Mutton KJ, Syed Q. Prevalence of HIV and injecting drug use in men entering Liverpool prison. *BMJ* 1997;315:30-1.
- 16 Gaughwin MD, Douglas RM, Liew C, Davies L, Mylvaganam A, Treffke H, et al. HIV prevalence and risk behaviours for HIV transmission in South Australian prisons. *AIDS* 1991;5:845-51.
- 17 Langani TL, Davidson KL, Hope VD, Luutu JW, Newham JA, Parry JV, et al. Poor hepatitis B vaccine coverage in injecting drug users: England. *Commun Dis Public Health* 1999;2:174-7.
- 18 Smyth B, Keenan E, O'Connor JJ. Evaluation of the impact of Dublin's expanded harm reduction programme on the prevalence of hepatitis C among injecting drug users with short injecting histories. *J Epidemiol Community Health* 1999;53:434-5.
- 19 Gore SM, Bird AG, Cameron SO, Hutchinson SJ, Burns SM, Goldberg DJ. Prevalence of hepatitis C in prisons: WASH C surveillance linked to self reported risk behaviours. *Q J Med* 1999;92:25-32.
- 20 Butler TG, Dolan KA, Ferson MJ, McGuinness LM, Brown PR, Robertson PW. Hepatitis B and C in New South Wales prisons: prevalence and risk factors. *Med J Aust* 1997;166:127-30.
- 21 Farrell M, Howes S, Vester A, Davoli M. *Reviewing current practice in drug substitution treatment in Europe*. London: National Addiction Centre, EMCDDA, Osservatorio Epidemiologico, 1999.
- 22 Connell JA, Parry JV, Mortimer PP, Duncan J. Novel assay for the detection of immunoglobulin G anti-human immunodeficiency virus in untreated saliva and urine. *J Med Virol* 1993;41:159-64.
- 23 Connell JA, Parry JV. Detection of anti-HIV in saliva and urine at the time of seroconversion. *Clin Diag Virol* 1994;1:299-311.
- 24 Parry JV, Perry KR, Mortimer PP. Sensitive assays for viral antibodies in saliva: an alternative to tests on serum. *Lancet* 1987;ii:72-5.

(Accepted 30 March 2000)

Corrections and clarifications

Smoking and dementia in male British doctors: prospective study

A formula was incomplete in this paper by Richard Doll and colleagues (22 April, pp 1097-102). In the last sentence of the statistical methods section the formula for the 95% confidence limit of the relative risk should have been given as: "exp (b ± SE × 1.96) [not exp(b SE 1.96)], where b is the log relative risk and SE its standard error."

Editor's choice

Some errors in the *BMJ* lie dormant for quite some time before detection, as has happened with a reference cited in Editor's Choice from 10 April 1999 (vol 318). In the first paragraph the image of the "champagne glass of world poverty" was wrongly attributed to a World Bank report. In fact, it can be found in the United Nations Development Programme's *Human Development Report 1992* at www.undp.org/hdro/92.htm.

Medicine and the media

In the article entitled "The steady drip of biased reporting" (20 May, p 1414) we misquoted Claire Rayner in the last paragraph. The final sentence should have started: "If the NHS has been fatally flawed . . ."