# Mandatory hepatitis B virus testing for doctors

Sir-We welcome the announcement that Canada intends to introduce mandatory hepatitis B virus (HBV) testing for doctors and dentists in an Aug 8 news item (p 466).<sup>1</sup> Too many patients have been infected by their physicians during exposure-prone procedures. Even knowledge about the infectious status and careful adherence to recommendations cannot reliably prevent transmission. Mandatory vaccination and proof of immunity, as requested by the Canadian Health Authority, (http://www.hc-sc) seems to be an effective way to identify physicians without protection. Then further testing will eventually detect existing HBV infection. According to the Canadian Guidelines, HBeAgpositive physicians will not be allowed continue exposure-prone to procedures.2 This approach is in our opinion inadequate. HBeAg-negative mutants of HBV may reach high titres and may cause particularly severe Β. Furthermore, hepatitis transmissions of HBV from four HBeAg-negative surgeons to patients have been documented.3

A more reliable estimate of the infectivity can be obtained by testing serum concentrations of HBV DNA. In 1992, a committee of the German Society of Virology published a recommendation that HBsAg-positive physicians with 105 HBV genomes/mL or lower need not be excluded from exposure-prone work.4 In fact, all of the four HBeAg-negative surgeons who transmitted HBV had higher HBV DNA concentrations. If such a recommendation is adopted, then accurate assays of HBV DNA are needed. However, available test kits and in-house tests give highly divergent results and most assays underestimate the true number of genomes by a factor of 10–50. If one corrects the published data in view of new calibrations, the recommendation would be to exclude only those doctors and dentists with more than 10<sup>6</sup> genomes/mL. All four infectious surgeons had more than 107 genomes if the published genome concentrations are corrected. On the other hand, those 20% of e antigenpositive surgeons with 10<sup>6</sup> or fewer genomes/mL need not be excluded.

There is at least one test kit (Quantiplex from Chiron Corp, Emeryville, CA, USA) available that is accurately calibrated. Although HBV DNA-assays are more expensive than the assay of HBeAg, we believe that the importance of the decision deserves application of best methodology. Another limitation of the Canadian policy are non-responders to the current HBV vaccine; more immunogenic vaccines could possibly alleviate this situation.<sup>5</sup>

Gregor Caspari, \*Wolfram H Gerlich Institute of Medical Virology, Justus-Liebig-University, D35392 Giessen, Germany (e-mail: Wolfram.H.Gerlich@viro.med.unigiessen.de)

- 1 Mandatory HBV-testing for Canada's doctors. *Lancet* 1998; **352:** 466.
- 2 Proceedings of The Concensus Conference on Infected Health Care Workers. Risks for transmission of blood-borne pathogens. *Can Commun Dis Rep* 1998; 24 (suppl 4)
- 3 The Incident Investigation Teams and others. Transmission of hepatitis B to patients from four infected surgeons without hepatitis B e antigen. N Engl J Med 1997; 336: 178-84.
- 4 Gerlich WH. Berufstätigkeit von HBs-Antigen-positiven Chirurgen. DMW 1992; 117: 359–60.
- 5 Zuckerman JN, Sabin C, Craig FM, Williams A, Zuckerman AJ. Immune response to a new hepatitis B vaccine in health care workers who had not responded to a standard vaccine: randomised double blind dose-response study. *BMJ* 1997; **314**: 329–33.

## Surveillance into crowd control agents

Sir—In response to your July 18 editorial,<sup>1</sup> we draw your attention to our surveillance into crowd control agents (CCA)—eg, CS (orthochlorobenzylidene malonitrile) gas, mace (chloracetothenon, CNgas), and pepper spray—and possible adverse health effects after exposure.

The National Poisons Information Service (London) (NPIS[L]) collates information concerning patient inquiries. In 1994, NPIS(L) was contacted about 327 casualties exposed to CCAs. In 1995, this figure rose to 654, in 1996, 810, and in 1997, 597. Enquiries to NPIS(L) are made in cases in which patient management advice for patients is required. It is likely that as the legal use of CS spray becomes more widespread, medical personnel will become familiar with the recommended treatment and will not seek advice from poisons centres.<sup>2</sup> Therefore, the data reported above, and on which our research and surveillance for 1998 are based, are likely to be only the tip of the iceberg.

In 1996, various English police forces started to use CS sprays for their immediate short-lived effects. The police incapacitant used in England contains CS (5% concentration), the solvent methyl isobutyl ketone (MIBK), and a nitrogen propellant. A review of The English-language press found no reports of the use of MIBK, and CS in field conditions, although concerns have been expressed.

Analysis of the CCA enquiries made to NPIS(L) in 1997 found that 454 (76%) were within 6 h of exposure and 143 (24%) were made after 6 h, with 11% of these latter enquiries made more than 36 h after exposure. Patients are not always exposed to CCA alone, and clinical effects may be due to other agents. The table shows the differences in observed clinical effects occurring within 6 h of exposure and later. Crude analysis of the results suggests significant differences in dermal and gastrointestinal symptoms between the two periods. CS spray has been reported to cause erythematous contact dermatitis and allergic contact dermatitis with vesicles, blisters, and crusts.4 CS was tested extensively by Himsworth<sup>3,4</sup> and others<sup>5</sup> and is generally shown to be safe and efficient with short-lived, self-limiting effects. However, the initial findings that we now report show that delayed adverse effects may be occurring as a result of CS spray. As a consequence of this crude analysis we are undertaking a further study to investigate adverse health effects after exposure to CCAs. We have followed up all CCA incidents reported to the NPIS(L) over 7 months (January to July, 1998) with three aims.

First to determine short-term and

Clinical effects reported within 6 h of exposure	No (%)	Clinical effects reported after 6 h of exposure	No (%)	Crude differences between proportions p-value (95% CI)
Ocular (irritation, lacrimation)	191 (32)	Ocular (irritation, corneal abrasions	215 (36)	0·2 (−0·05 to 0·4)
Dermal (rash, irritation, erythema, dermatitis)	54 (9)	Dermal (blisters, bullae, eczema, oedema)	203 (34)	<0.0001 (0.15–0.30)
Respiratory (coughing, short of breath)	30 (5)	Respiratory (coughing, short of breath)	24 (4)	0.37 (0.02–0.11)
Neurological (headache, drowsy)	60 (10)	Neurological (headache, drowsy)	42 (7)	0.02 (-0.09 to 0.4)
Cardiac (tachycardia, hypotension)	24 (4)	Cardiac (chest pain)	36 (6)	0.26 (-0.04 to 0.14)
Gastrointestinal (buccal irritation, vomiting)	42 (7)	Gastrointestinal (buccal irritation, vomiting)	66 (11)	<0.0001 (0.04 to 0.14)
None	48 (8)	None	6 (1)	
Clinical effects not stated by inquirer	119 (20)	Clinical effects not stated by inquirer	3 (0.5)	)
Other	30 (5)	Other	3 (0.5)	)

Total clinical effects of Crowd Control Agents in 1997 in 597 patients reported to the National Poisons Information Service (London)

medium-term clinical effects of exposure to CCAs; second, the proportion of enquiries in which police incapacitant spray was used; and third, whether the clinical symptoms resulting from exposure to police CS incapacitant (containing MIBK) are different from symptoms reported after exposure to other CCAs.

Henrietta Wheeler, \*Rachel MacLehose, Euripides Euripidou, Virginia Murray \*Chemical Incident Response Service and National Poisons Information Service (London), Medical Toxicology Unit, Guy's and St Thomas' Hospital Trust, London SE14 5ER, UK; and Environmental Epidemiology Unit, London School of Hygiene and Tropical Medicine, London

- Editorial. "Safety" of chemical batons. Lancet 1998; 352: 159.
- 2 Volans GN, Wiseman HM. Surveillance of poisons—the role of poison control centres. In: Eylenbosh WJ, Noah NI, eds. Surveillance in health and disease. Oxford: Oxford University Press, 1988; 258.
- 3 Himsworth H, Black DAK, Crawford I, et al. Report of the inquiry into the medical and toxicological aspects of CS (orthochlorobenzylidine malonitrile), part I: and part II: enquiry into the medical situation following the use of CS in Londonderry on 13 and 14 August, 1969, and enquiry into toxocilogical aspects of CS and its use for civil purposes. London: HM Stationery Office, 1969.
- 4 Parnix-Spake A, Theisen AJ, Roujeau JC, Revuz J. Severe cutaneous reactions to selfdefense sprays. *Arch Dermatitis*, 1998; 20: 316.
- 5 Wheeler H. Use and management of crowd control agents. *Emergency Nurse* 1998; **5:** 18–21.

## Placebo needle for acupuncture

Sir—K Streitberger and J Kleinhenz's report (Aug 1, p 364)<sup>1</sup> of the development of a validated dummy placebo needle for acupuncture research is a creative step foward in the acupuncture research conundrum. Acupuncture has evaded rigorous methodological safeguards.<sup>2</sup> The device does not solve all the questions.

This new sham will work for many (if not most) acupuncture point locations. But it may not be suitable for some iportnant sites, for example, the toes, fingers, and scalp. Also, the device may not allow significant diversity in manual stimulation methods or variations in needle-insertion direction. A more important limitation, however, is that the device does not surmount the problem of double blinding1 (the masking of the practitioner). The report skirts the issue that it is generally impossible to conceal a procedure that relies on practitioner acumen,<sup>3</sup> which is an obstacle for any potential validation of accupuncture. Evidence exists that practitioner expectation, enthusiasm, and knowledge of any therapeutic intervention is routinely communicated to the patient in a single-blind protocol.<sup>3</sup> The recent National Institutes of Health's Consensus Development Conference on Accupuncture seemed to accept singleblind assessment as the only plausible method in accupuncture research.<sup>4</sup> Should we rest here?

### Ted J Kaptchuk

Center for Alternative Medicine Research, Beth Israel Deaconess Medical Center/Harvard Medical School, Boston, MA 02215, USA

- Streitberger K, Kleinhenz J. Introducing a placebo needle into accupuncture research. *Lancet* 1998; 352: 364–65.
- Vincent C, Lewith G. Placebo controls for accupuncture studies. *J R Soc Med* 1995; 88: 199–202.
- Gracely RH. Clinician's expectations influence placebo analgesia. *Lancet* 1985; i: 43.
- 4 Marwick C. Acceptance of some accupuncture applications. *JAMA* 1997; 278: 1725–27.

### Nursing nursing back to health

Sir—Your editorial (July 25, p 249)<sup>1</sup> neatly summarises what must be the biggest crisis facing the National Health Service (NHS): the worst shortage of qualified nurses in its history. As we celebrate 50 years of NHS nursing and the huge contribution that nurses have made to the National Health Service, we mark also a 50-year history characterised by lack of investment in planning the nursing workforce.

Nurses are the largest workforce in the health service. Yet, poor workforce planning is perhaps inevitable when nursing is still thought of by some as an instinctive, caring job fit for any "good woman". Nursing has long suffered from myth making, but none worse than the myth which claims that nurses are not interested in developing their skills as expert members of the healthcare team.

Employers, governments, and, most importantly, patients recognise the value of expert nurses. They realise that nurses provide cost-effective, highquality care. But although everyone appreciates the value of expert nurses, we are still failing to invest properly in the planning, education, and training of the nursing workforce. If we value the contribution that nurses make to the NHS, we need to value their careers. It is impossible to do one without the other. We are now training near graduate-level nurses who are eager to become important members of the health-care team, yet expecting them to stay on low-grade pay for 10 years or more.

Today's problems were documented in the 1932 Lancet Commission on Nursing and well before that. When it comes to the NHS, politicians are not very good at learning from history. If the Government is to meet its targets to shorten waiting lists for patients and improve standards of care, we must learn from the mistakes of the past. The stakes are too high if we do not.

### Christine Hancock

Royal College of Nursing, 20 Cavendish Square, London W1M 0AB, UK

# High frequency radio keeps mosquitoes at bay

Sir—At a time when increasing emphasis is placed on evidence-based medicine, it was regrettable that you published Nigel Glass's Aug 22 news item  $(p634)^1$  on a radio station that claims to protect its listeners from mosquito bites by broadcasting a highpitched sound.

No evidence, other than assertions about listeners' responses, is presented that the sound affects the behaviour of biting female mosquitoes. In the 1970s and 1980s, many biting counts were made by entomologists worldwide with hand-held buzzers turned on or off, and no difference in biting rate was ever found. Several companies that sold these buzzers were successfully prosecuted and fined under the UK Trade Descriptions Act. The companies were unable to present any evidence apart from letters from apparently satisfied customers.

Most commercially available buzzers are set at about 6 kHz, but we have also tested variants that are supposed to mimic the clicking sound of dragonflies and ultrasonic versions, which would seems to be more similar to the radio broadcasts. In no case was there any significant difference in biting rate with the device on and with it off. I suggest that Glass challenges the radio station to carry out such a test before he repeats their unsubstantiated and commercially motivated assertions.

#### C F Curtis

Department of Medical Entomology, London School of Hygiene & Tropical Medicine, London WC1E 7HT, UK

1 Glass N. High frequency radio keeps mosquitoes at bay. *Lancet* 1998; **352:** 634.

<sup>1</sup> Anon. Nursing nursing back to health. Lancet 1998; **352:** 249.