nursing, or other staff trained in health care, in the same law.

These reforms represent our way of modern thinking. We believe that Finland is the first country in Europe to include all health care professionals in the same law, in the same way as it was the first country to have a law defining patients' rights.

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1 Sheldon T. Dutch law defines patients' rights. *BMJ* 1994;308:616. (5 March.)

Metal detectors to detect aluminium

EDITOR,—D M Bradburn and colleagues highlight the poor radiodensity of aluminium.¹ We now use a hand held portable metal detector (Adams Electronics, Edenbridge, Kent) to detect the presence of metal fragments in patients presenting to our accident and emergency department with a history of having ingested or inhaled metal fragments. This metal detector is sensitive to all metals, particularly closed rings such as the ring pulls on aluminium cans.

In the light of Bradburn and colleagues' case report we tested the ability of our metal detector to detect a metallic tab placed over the neck of one of us. A strong signal was emitted when scanning was performed from the opposite side. We note that the patient reported on had attended two accident and emergency departments and that radiographs obtained in both departments had not shown any abnormality. Had the patient been tested with a metal detector the presence of an aluminium fragment might have been detected earlier.

We propose that metal detectors should be used more widely in accident and emergency departments. They have provided information equivalent to that provided by plain radiographs in patients suspected of having ingested a foreign body² and in one case in which a razor blade was located in the oesophagus.³

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- 1 Bradburn DM, Carr HF, Renwick I. Radiographs and aluminium: a pitfall for the unwary. *BMJ* 1994;308:1226. (7 May.)
- 2 Arena L, Baker SR. Use of a metal detector to identify ingested metallic foreign bodies. *Am J Roentgenol* 1990;155:803-4.
- 3 Kessler A, Yellin A, Kessler A, Kronenberg J. Use of a metal detector in the location of a swallowed razor blade in the oesophagus. *J Laryngol Otol* 1990;104:435-6.

Smoking in aeroplanes

EDITOR,—Unfortunately, Richard Harding's editorial on the many factors related to health and comfort in passenger aircraft¹ has been used by the tobacco industry to support its campaign, in the daily press in Hong Kong, against the non-smoking flights recently introduced by Cathay Pacific and other airlines.¹ The key paper quoted in the editorial, by Crawford and Holcomb, argues that environmental factors other than tobacco smoke may cause problems such as headaches and eye, nose, and throat symptoms.² This is hardly the only issue related to environmental tobacco smoke in aircraft, but it is perhaps not surprising that the article made such claims, and readers may wish to

consider the article's origins when assessing the evidence.

Both of the authors are well known as supporters of the tobacco industry in Australia and the United States. Larry Holcomb admits to being a consultant to the tobacco industry and has appeared regularly for it in the United States and other parts of the world. His advocacy for a relaxation of bans on smoking in aircraft has also been used by the industry in Denmark and Finland. In Hong Kong, in May 1992, he appeared as an "expert on environmental tobacco smoke" at a seminar held by the tobacco industry for the media, from which academic and other public health staff were excluded. Later, on a phone in programme on Radio Hong Kong, he attempted to refute the evidence for the effects of environmental tobacco smoke on the respiratory health of children.

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- 1 Harding R. Cabin air quality in aircraft. *BMJ* 1994;308:427-8. (12 February.)
- 2 Crawford WA, Holcomb LC. Environmental tobacco smoke (ETS) in airliners—a health hazard evaluation. *Aviat Space Environ Med* 1991;62:580-6.

Falling sperm quality

EDITOR,—Stephen Farrow comments on the quality of the evidence concerning a possible decline in sperm quality,¹ focusing attention on our paper published in 1992.² Farrow also responds to a paper by Peter Bromwich and colleagues, for which we provided the commentary.³

Farrow questions our systematic search of the databases MEDLINE and Index Medicus. A necessary requirement for a valid overview, however, is that the criteria for including articles in the overview (and for excluding them) are explicit and reproducible to avoid selection bias. Several precautions were taken to avoid any undue influence of papers with small numbers of men in them. Firstly, the statistical analyses were weighted by the inverse of the sample size (not the logarithm of the sample size as Farrow claims). Secondly, we identified those studies that contributed most to the statistical association: most of these studies included large numbers of men. Replacing the date of publication by the date of data collection was feasible for only a limited number of publications, and the effect of relying on the publication date should not give rise to bias, only to a possible dilution of the effect.

We agree that the distribution of the data is obviously skewed and that use of the medians instead of the means would have been preferable. The information provided in the articles, however, did not allow for an analysis based only on the medians.

Farrow criticises our illustration of the decline in sperm concentration with a simple linear regression analysis. Indeed, the fit of this regression line is not very satisfactory, and before submitting the paper we performed several different analyses. The best fit among the more simple models was obtained by one sperm count before 1965, estimated as $110 \times 10^6/\text{ml}$, and highly significantly different from another sperm count, estimated as $73 \times 10^6/\text{ml}$, after 1965. This fit is compatible with the suggestion that the decline may have stopped. On the other hand, interestingly, a recent study by Auger *et al* showed a clearly significant decline in sperm concentration in 1351 fertile donors examined at the same clinic in Paris between 1973 and 1992.⁴ Similarly, Von Waeleghem *et al* found a significant deterioration in sperm quality in 360 consecutive Belgian semen donors from 1977.⁵

In conclusion, on the basis of the admittedly

fragile instrument of meta-analysis the evidence cannot lead us to a conclusion other than that sperm concentrations now are lower than they were in the 1940s and '50s. This evidence needs to be combined with other types of evidence, but we do not believe that further statistical analysis will make any qualitative difference to the main message.

Our conclusion should perhaps be seen in the light of other aspects of semen quality in the general population: according to the World Health Organisation's classification, human semen is now considered to be normal even if up to 70% of the spermatozoa have abnormal morphology—a percentage much higher than in most other mammals.⁶ Finally, there is no reason to doubt that the incidence of testicular cancer (a disease associated with low semen quality) is increasing considerably.⁷

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- 1 Farrow S. Falling sperm quality: fact or fiction? *BMJ* 1994;309:1-2. (2 July.)
- 2 Carlsen E, Giwercman A, Keiding N, Skakkebaek NE. Evidence for decreasing quality of semen during past 50 years. *BMJ* 1992;305:609-13.
- 3 Bromwich P, Cohen J, Stewart I, Walker A. Decline in sperm counts: an artefact of changed range of normal? *BMJ* 1994;309:19-22.
- 4 Auger J, Czyglik F, Kunstmann JM, Jouannet P. Significant decrease of semen characteristics of fertile men from the Paris area during the last 20 years. *Hum Reprod* 1994;9(suppl 4):72. (Abstract.)
- 5 Van Waeleghem K, De Clercq N, Vermeulen L, Schoonjans F, Comhaire F. Deterioration of sperm quality in young Belgian men during recent decades. *Hum Reprod* 1994;9(suppl 4):73. (Abstract.)
- 6 Skakkebaek NE, Giwercman A, de Kretser D. Pathogenesis and management of male infertility. *Lancet* 1994;343:1473-9.
- 7 Møller H. Clues to the aetiology of testicular germ cell tumours from descriptive epidemiology. *Eur Urol* 1993;23:8-16.

Epidemic of asthma possibly related to thunderstorms

EDITOR,—At 1300 on 25 June the National Poisons Unit was notified by Whipps Cross accident and emergency department that 55 people complaining of asthma had attended during the preceding 15 hours. This was in contrast to an expected five to six cases and represented a 10-fold increase. Further investigation showed a similar excess of people attending with acute asthma in other accident and emergency departments across London: Newham 96; King George's, Ilford, 91; Royal London 62; Oldchurch 58; St Thomas's 44; Guy's 36; and Queen Mary's, Roehampton, 20. Several accident and emergency departments reported running out of medication, nebulisers, and mouthpieces of peak flow meters. Further ad hoc surveillance suggests that the incident spread from Bristol to Cambridge and Barnsley to Canterbury. This initial information suggests that this epidemic may be substantially larger than previously reported epidemics.¹

The epidemic coincided with thunderstorms over much of Britain. In the past more circumscribed epidemic asthma has been reported after thunderstorms and is thought to be associated, at least in part, with aeroallergens such as pollen¹ and fungal spores.² Other epidemics of asthma have not

been commonly reported except for incidents in the 1980s related to soya bean dust in Barcelona, Spain; castor bean dust in Toledo, Ohio, United States, in the 1920s; and sulphuric acid mists in Yokkaichi, Japan, in the 1960s.¹

This epidemic placed great pressure on the emergency services. We are forming a research group to undertake a detailed study of the epidemic. Better understanding may allow such episodes to be predicted so that advice can be provided to people with asthma and to health care providers.

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1 Bellomo R, Gigliotti P, Treloar A, Holmes P, Suphioglu C, Singh MB, et al. Two consecutive thunderstorm associated epidemics of asthma in the city of Melbourne. *Med J Aust* 1992;156:834-7.

2 Packe GE, Ayres JG. Asthma outbreak during a thunderstorm. *Lancet* 1985;ii:199-204.

3 Anto JM, Sunyer J, Rodriguez-Roisin R, Suarez-Cervera M, Vazquez L. Community outbreaks of asthma associated with inhalation of soybean dust. *N Engl J Med* 1989;320:1097-102.

4 Figley KD, Elrod RH. Endemic asthma due to castor bean dust. *JAMA* 1982;247:79-82.

5 Kitagawa T. Cause analysis of the Yokkaichi asthma episode. *J Air Poll Contr Assoc* 1985;34:743-6.

Television programme's realism

EDITOR,—Opinion on the BBC television series *Cardiac Arrest* has been conflicting, with it being viewed as either frightening realism or mythology.¹ The public, management, and consultants should know whether it accurately represents life in the 1990s as a hospital house officer and senior house officer. I asked 45 trainees in general practice about the programme. Thirty nine (87%) returned questionnaires, of whom six stated they had not seen it. The replies (table) suggest that the programme gives a realistic picture of working conditions in hospital for this group of doctors.

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1 Dillner L. Frightening realism. *BMJ* 1994;308:1108. (23 April.)

Reply to question "How realistic do you think the programme 'Cardiac Arrest' (about junior hospital doctors on BBC1 on Thursday evenings) is?" (n=33). Figures are numbers of respondents selecting each point on six point scale

	Six point scale					
	Completely realistic					Not at all realistic
Working conditions	11	15	5	0	2	0
Doctors' relationship to management*	7	9	8	6	2	0
Senior house officers' and house officers' relationship to consultant	1	11	7	8	6	0
Staff sexual relationships	0	7	7	9	9	1

*One respondent did not answer this.

BPA's response to Clothier inquiry

EDITOR,—In his letter Keith Dodd states that "soon after the suspension of the Drs Porter and Nanayakkara a small committee was established at the request of the British Paediatric Association's council." I wish to state categorically that we were never suspended but were made "redundant" by Trent Regional Health Authority.

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1 Dodd K. BPA's response to Clothier inquiry. *BMJ* 1994;308:1441. (28 May.)

Ulcer wars

EDITOR,—In reviewing my documentary, "Ulcer Wars," for the television series *Horizon*, D G Colin-Jones states that it was one sided and tendentious.¹ He complains that critics of the proposal of a link between peptic ulcers and *Helicobacter pylori* were not given enough air time, but that was because the overwhelming body of medical opinion has now accepted that there is a link. The critics are a small and diminishing minority, who were given an appropriate amount of time.

Colin-Jones disagrees with the claim that triple treatment eradicates the organism in about 90% of patients. This is the figure quoted in the consensus statement issued by a panel of international experts at the National Institutes of Health in Washington last February and is widely accepted.

After saying that the idea of screening for *H pylori* was still extremely controversial, the programme showed Barry Marshall screening the siblings of people with stomach cancer. Colin-Jones states that there is no scientific justification for this, ignoring the fact that we had described at some length prospective cohort double blind serological trials carried out in Britain and the United States that suggest a causal link.² Preliminary studies also suggest that eradication of *H pylori* reverses increased proliferation of gastric cells (a reliable biomarker of the risk of cancer) in cases of gastritis, gastric metaplasia, and dysplasia (C O'Morain, second united European gastroenterology week, Barcelona, 1993). Colin-Jones accuses the programme of confusing gastric lymphoma with adenocarcinoma. Gastric lymphoma was given a separate section, introduced as a special type of stomach cancer, referred to throughout as lymphoma, and fully defined by Professor Isaacson.

Colin-Jones says that half the middle aged population of Britain has *H pylori* infection without adverse effect. This is untrue (almost all have gastritis; about a fifth have or have had a peptic ulcer; an appreciable proportion have non-ulcer dyspepsia); it is also irrelevant as most infectious diseases have a common carrier state. The fact that only a proportion of people infected with HIV develop AIDS is not an argument against its being

caused by an infectious agent. It was also a point addressed in the programme.

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1 Colin-Jones D. The subtle microbe. *BMJ* 1994;308:1378. (21 May.)

2 Forman D, Newell D, Fullerton J. Association between infection with *Helicobacter pylori* and risk of gastric cancer: evidence from a prospective investigation. *BMJ* 1991;302:1302-5.

Author's reply

EDITOR,—A television documentary of this kind cannot be the medium for full scientific rigour and should therefore avoid drawing unwarranted conclusions. In this case many of the conclusions were indeed warranted, and my review gave congratulation where it was due for an important and advancing subject being opened to general view. My dispute with Michael Mosley is that on some points the evidence is at an early stage and open to a range of interpretations. In particular, eradication of *Helicobacter pylori* depends on several factors, such as patients' compliance with a complex regimen, the treatment chosen, and antibiotic sensitivity. For example, triple treatment was successful in 90% of cases when the organism was sensitive to metronidazole but only 31% when it was resistant.¹ Some studies have achieved eradication rates of 90%, but many more have reported much lower figures.

The link between *H pylori* and gastric cancer has been well made and was portrayed accurately. Eradication of the infection when it has been present for many years has not, however, been shown to prevent a cancer developing. The gastritis caused by *H pylori* often progresses to gastric atrophy, which is thought to be irreversible. At what stage will eradication prevent a cancer developing? Presumably before the atrophy develops. As a result of the documentary I have already had inquiries from patients about preventing gastric cancer, but we simply do not yet know if this can be achieved in someone with an established infection.

Unfortunately, Mosley does not quote my review accurately. Half the middle aged population of Britain have *H pylori* infection without apparent adverse effects—that is, they are unaware of it as it is asymptomatic. There are no convincing data linking *H pylori* with non-ulcer dyspepsia.

Mosley's letter tries to make my review seem harsh and critical, but this was not the case. I tried to emphasise the enthusiasm that he communicated. I complimented the film and discussed the impact that this remarkable organism is having on our thinking and clinical practice.

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1 Bell GD, Powell K, Burrage SM, Pallearos A, Jones PH, Grant PW, et al. Experience with "triple" anti-*Helicobacter pylori* eradication therapy: side effects and the importance of testing the pre-treatment bacterial isolate for metronidazole resistance. *Aliment Pharmacol Ther* 1992;6:427-35.

Correction

Women consultants and merit awards

An author's error occurred in this letter by Allison Streetly (25 June, p 1712). The second sentence in the second paragraph should have read "The association of women with specialties poorly represented among merit award holders does not mean that this is the cause of the difference between the sexes."