that the AIDS epidemic can be controlled by a massive public education campaign advising people to use condoms. This campaign is well and truly founded on ignorance.

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- 1 Zagury D, Bernard J, Leibowitch J, *et al.* HTLV-III in cells cultured from semen of two patients with AIDS. *Science* 1984;226:449-51.
- 2 Ho DD, Schooley RT, Rota TR, *et al.* HTLV-III in the semen and blood of a healthy homosexual man. *Science* 1984;226:451-3.
- 3 Levy JA, Kaminsky LS, Morrow WJW, *et al.* Infection by the retrovirus associated with acquired immune deficiency syndrome. *Ann Intern Med* 1985;103:694-9.
- 4 Ratner L, Haseltine W, Patarca R, *et al.* Complete nucleotide sequence of the AIDS virus, HTLV-III. *Nature* 1985;313:277-84.
- 5 Zagury D, Fouchard M, Vol JC, *et al.* Detection of infectious HTLV-III/LAV virus in cell-free plasma from AIDS patients. *Lancet* 1985;ii:505-6.
- 6 Groopman JE, Salahuddin SZ, Sarngadharan MG, *et al.* HTLV-III in saliva of people with AIDS related complex and healthy homosexual men at risk for AIDS. *Science* 1984;226:447-9.

SIR,—Dr W G Smith (14 February, p 446) suggests that the human immunodeficiency virus (HIV) is not transmitted by mouth to mouth kissing, an opinion voiced in the government's leaflet on the acquired immune deficiency syndrome (AIDS).¹

The leaflet, however, also says: "Nor is it safe to share a toothbrush . . . of someone who is infected." Using a carrier's toothbrush carries risk because small quantities of infected blood from the gums might be transmitted to the uninfected user's bloodstream through the gums during brushing. There is scarcely less risk of transmission of HIV when a carrier kisses an uninfected partner mouth to mouth after both have cleaned their teeth using their own toothbrushes. Infected blood from the carrier's gums could readily pass into the uninfected partner's bloodstream through abrasions caused by the toothbrush. Dr Smith's statement that "there are no well documented cases where infection has been attributed to kissing" applies equally to shared toothbrushes, yet the government's AIDS advice sanctions the one but advises against the other.

The Department of Health and Social Security has, in fact, explicitly recognised and stated the possible danger from infected saliva in its guidance notes for doctors and dentists: "The virus has also been isolated from saliva, tears, and breast milk. It may occur in other bodily fluids and could possibly be spread by these." Later, the notes say that there is no substantial evidence for such spread, but they nevertheless recommend to dentists that "in view of the aerosols containing blood and saliva that may be generated by low and high speed dental drills, ultrasonic scalers, and irrigation/air syringes, the wearing of protective eyewear and masks is essential."²

It would surely be more prudent for the DHSS to give the general public the same warnings against AIDS in saliva as it has given to its own doctors and dentists.

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- 1 Department of Health and Social Security. *AIDS—don't die of ignorance*. London: HMSO, 1986.
- 2 Department of Health and Social Security. *Guidance for surgeons, anaesthetists, dentists and their teams in dealing with patients infected with HTLV III*. London: HMSO, 1986.

SIR,—Dr J H G Smith discussed only the role of saliva as the infective fluid, the infectivity of which for human immunodeficiency virus is uncertain.

The infectivity of contaminated blood, however, is not in doubt. The transmission of AIDS after

blood transfusion has been documented,¹ as has seroconversion after needlestick accidents.^{2,4} The high risk state of intravenous drug abusers suggests that fairly small amounts of blood, such as might contaminate used needles, may carry infective doses of HIV.

During open mouthed kissing the juxtaposition of teeth and delicate vascular oral and glossal mucous membranes carries the risk of mucosal injury and bleeding for both partners. In addition, oral lesions, such as herpes labialis, aphthous ulcers, gingivitis, and even toothbrush abrasions, must expose capillaries and are all very common. It therefore seems likely that open mouthed kissing may transmit HIV, but, as Dr Smith points out, this is obscured by the fact that those who engage in such kissing also probably have sexual intercourse.

Should we really wait for four or five years until epidemiological studies prove that a significant number of careful condom users still develop overt AIDS before we make this connection?

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- 1 Curran JW, Lawrence DN, Jaffe H, Kaplan J, Zyla LD, Chamberland M. Acquired immunodeficiency syndrome associated with transfusion. *N Engl J Med* 1984;310:69-75.
- 2 Weiss SH, Saxinger WC, Richtman D, *et al.* HTLV III infection among health care workers: association with needlestick injuries. *JAMA* 1985;254:2089-93.
- 3 Henderson DK, Saah AJ, Zak BJ, *et al.* Risk of nosocomial infection with HTLV III/LAV in a large cohort of intensively exposed healthcare workers. *Ann Intern Med* 1986;104:644-7.
- 4 McCray E. Co-operative needlestick surveillance group. Occupational risk of the acquired immunodeficiency syndrome among healthcare workers. *N Engl J Med* 1986;314:1127-32.
- 5 Moss AR. AIDS and intravenous drug use: the real heterosexual epidemic. *Br Med J* 1987;294:389-90.

Death in the clouds

SIR,—Dr Frank S Preston's reply to Drs PJC Chapman and DA Chamberlain (7th February, p 374) raised some important questions. The patient's illness, as described, was most unusual and must have been perplexing at the time, but if the cause of death was myocardial infarction then the final collapse is likely to have been due to ventricular fibrillation. If this is to be treated successfully a rapid response is crucial. The prospects of success, are almost non-existent within seven or eight minutes of the start of the emergency, and I believe that the reassurance generated by Dr Preston's telemetry to a consultant cardiologist is ill founded.

Dr Preston may not understand the philosophy behind automatic and semiautomatic ("advisory") defibrillators. This type of equipment has been developed and is marketed by several leading manufacturers precisely to obviate the need for high skills and constant practice in those who use it. Modern technology enables the machines to "diagnose" ventricular fibrillation with remarkable precision. Skill is still required but only in reading, and the message "Defibrillation required" has a stark simplicity that cabin staff at 30 000 feet will appreciate.

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Early emergency care

SIR,—The study by Dr J M Rawles and colleagues (7 February, p 352) of the use of defibrillators by general practitioners highlights what an effective lifesaving technique this is. Cardiopulmonary resuscitation is useless unless a defibrillator can reach the patient rapidly, and the longer cardio-

pulmonary resuscitation continues the less chance defibrillation has of being effective. Ideally, a defibrillator and a trained user should be available wherever sudden death is likely to occur. In particular, I believe that all ambulances should carry defibrillators, which all ambulancemen should be trained to use. When I tried to implement this idea in Alton in 1977 I met with much opposition.

Alton is a market town which, with its surrounding villages, has a population of about 25 000 and is 15 miles from Basingstoke District Hospital. In 1980, after three frustrating years of negotiations with the ambulance authorities, the local ambulancemen raised money by public donation and equipped their two ambulances with Lifepak-5 defibrillators. The 13 station members were given a course in cardiopulmonary resuscitation by their training officer, and I instructed them in the recognition of cardiac arrhythmias and in defibrillation. The men were then examined by a cardiologist, who was satisfied with their ability to recognise and treat ventricular fibrillation. At this point the ambulance authorities forbade them to use the defibrillators.

When the inevitable happened and a patient went into ventricular fibrillation while being collected from his home by the ambulance the crew acted briskly and performed defibrillation. The local newspaper's article on this patient's golden wedding celebrations after his return from hospital was followed by a change of heart by the ambulance authorities, who decided that the Alton crews (but no others) could use the defibrillators. Several prominent local citizens have lived to be grateful for this ruling.

In 1983 Wessex Regional Health Authority started a scheme to incorporate cardiac training with defibrillation into advanced training, which also includes intubation and infusion. As only a few ambulancemen get places on such a course many will never learn this skill. This is a pity because defibrillation is so much easier to learn and to apply than intubation and infusion and has recently been shown by Anderson *et al.* to be far more likely to save lives out of hospital.¹

Drs Chapman and Chamberlain are to be applauded for introducing the cabin staff of British Caledonian Airways to defibrillation.² How much more necessary it is to do the same for the members of our ambulance brigades.

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- 1 Anderson IWR, Black RJ, Urquhart JD, *et al.* Early emergency care study: the potential and benefits of advanced prehospital care. *Br Med J* 1987;294:228-31.
- 2 Chapman PJC, Chamberlain DA. Death in the clouds. *Br Med J* 1987;294:181.

Occult chlamydial ophthalmia in men with non-gonococcal urethritis

SIR,—Dr E F Monteiro and colleagues (7 February, p 349) reported on occult chlamydial ophthalmia in men with non-gonococcal urethritis. Tullo and colleagues estimated that about one in 300 adults with a genital chlamydial infection (0.3%) develops inclusion conjunctivitis,¹ and it would be reasonable to assume that the proportion developing occult disease is greater. But is occult chlamydial eye infection in eight of 60 men with non-gonococcal urethritis (13%), as reported by Dr Monteiro and colleagues, reasonable, particularly when *Chlamydia trachomatis* was isolated from the genital tract of only about 27% of the men? The inference from this is that about every other man with chlamydial non-gonococcal