Foot and mouth disease

Australian lab a white elephant?

Canberra

THE future of a A$150 million laboratory for the study of foot and mouth disease virus has been thrown into confusion. Although the facility is now virtually complete, the federal government is considering a report by the Australian Science and Technology Council (ASTEC), tabled in the House of Representatives on 5 May, recommending that live foot and mouth disease virus should not be imported into Australia for a period of five years. ASTEC reports directly to the Prime Minister, and the recommendation is part of its inquiry into the Australian National Animal Health Laboratory (ANAHL), a high-security microbiological facility scheduled for completion later this year, as part of CSIRO's Divison of Animal Health.

Importation of live virus for any purpose has long been a vexing issue. Australia, because of its geographical isolation, is free from many animal diseases prevalent elsewhere. The fact that it has remained so, despite the advent of air travel, is testimony to the effectiveness of strict quarantine regulations. By far the most serious threat is the foot and mouth virus because a single outbreak would mean the immediate closure of US and Japanese markets, with trade resuming only 6–12 months after its eradication was proved, with a loss of some A$2,000–3,000 million.

In order to be able to cope with an outbreak of an exotic disease such as foot and mouth, ANAHL was approved in 1974 by the Parliamentary Standing Committee of Public Works, after the need for such a facility had been urged by the Australian Agricultural Council. Because of the reluctance of the government of the day to commit itself to the large investment required, construction was postponed until 1978. In the meanwhile, capital costs had escalated from A$67 million to the current estimate of A$150 million, with an operating budget of A$7 million per year.

While there is little doubt that live virus would be needed after an outbreak, and in any case, would be available from the field, controversy surrounds the question of whether it will be needed beforehand. CSIRO maintains that live virus is necessary for (1) training of personnel to recognize the clinical symptoms of the disease in all its manifestations, (2) vaccine production to combat its spread and (3) positive controls in diagnostic tests to guard against a false negative.

However, a recent report by the Australian Academy of Science systematically demolishes these arguments — personnel can be trained overseas; slaughter and not vaccination ahead of the moving front of infection will be the easiest and quickest line of defence against a primary outbreak; using inactivated antigens and developing new diagnostic methods can unequivocally establish the causative agent. In any case, action must be initiated from clinical symptoms without waiting for a laboratory diagnosis.

The argument against the importation of live virus is the danger of its escape, although the security of ANAHL is not in question. According to the ASTEC report, "notwithstanding the excellent level of containment, the importation of an exotic pathogen represents an additional risk over and above that posed by its accidental or deliberate introduction by other means". Nevertheless, the ASTEC report does not unequivocally rule out the need to work with live virus. It recommends the setting up of a small research group in an overseas laboratory with access to live virus, presumably at Pirbright in the United Kingdom, the world reference laboratory for foot and mouth disease virus.

Far from defusing the issue, the ASTEC report focuses attention on the justification for a laboratory primarily designed for research into foot and mouth virus.

Vimala Sarma

In vitro fertilization

BMA reports on ethics

THE British Medical Association (BMA) has published interim ethical guidelines for the medical profession on human *in vitro* fertilization and embryo replacement. The guidelines approve the therapeutic use of the new techniques, including "observations" on fertilized ova in excess of those needed for replacement or transfer.

The report, produced by a working group under Professor Peter Quilliam, was approved by BMA's council on 4 May. Although not formally binding on members of the profession, it will be the most influential of the recent spate of ethical reports on *in vitro* fertilization offered to the government's Warnock Committee.

The report says that *in vitro* fertilization should be carried out only at "special centres" where appropriate facilities and expertise are available. It is therefore unlikely that *in vitro* fertilization will be carried out in the majority of hospitals in the near future. BMA does not, however, follow the Royal College of Obstetricians and Gynaecologists (RCOG) in calling for legislation to license premises where the technique is used (see *Nature* 28 April, p.739), although it demands a system for recording all attempts to secure pregnancy.

The treatment of infertility by *in vitro* fertilization should be preceded by an assessment of the "stability and sincerity" of the couple concerned, the report says. It approves the use of ova or sperm donated by a third party when one of the partners is unable to produce viable gametes, but is less sure about the (rare) case where neither partner is able to produce viable gametes. BMA is unwilling to sanction "surrogate motherhood" — the transferring of an embryo to the uterus of a woman who might bear a child on behalf of an infertile couple.

The guidelines say it is "proper and important" that steps be taken to ensure the effectiveness of *in vitro* fertilization and embryo replacement. To this end, observation of embryos in excess of those needed for replacement will add to medical knowledge. However, such observations should normally be completed within 5 to 10 days of fertilization and always within 14 days. This condition is more restrictive than that urged by RCOG (which recommended 17 days as the end point for research), and is at variance with the recommendations of the Royal Society, which advocated "flexibility".

BMA's recommendations, which scrupulously avoid using the word "experiment", follow those of other groups in insisting that embryos which have been subject to manipulations should not be replaced in a uterus. BMA endorses provisional guidelines published last year by the Medical Research Council (MRC), which say that research on embryos is acceptable if "clearly defined and directly relevant to clinical problems". Dr Anne McLaren, of University College London, who was a member of both the MRC and the BMA working groups, says that the relevance of research proposals would be assessed by local ethical committees of university teaching hospitals (where it is expected that the research would be carried out). A spokeswoman for BMA offered the view that observations aimed at quality control of embryos were probably acceptable, whereas experiments which involved testing hypotheses were less likely to be approved. BMA's guidelines allow the storage of embryos by freezing, if observations show this to be safe; storage should not, however, exceed 12 months.

Two proposed amendments were defeated at BMA's council meeting: one would have prohibited any form of experimentation on fertilized ova, and the other would have made it unethical for a BMA member to cooperate on embryo research with any person not covered by the guidelines.

Taken together, BMA's guidelines and those of MRC will effectively determine what research is done on human embryos (although both are provisional), at least until the Warnock Committee reports next year. The surgery to obtain human ova can only be carried out by a registered medical practitioner, while most non-medical scientists working in the area are supported by the Medical Research Council.

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