spongiform encephalopathy or from countries where a low number of cases had been reported, provided the disease was notifiable in that country and the carcases of affected animals were destroyed and their progeny not used.

The guidelines included a classification of various tissues and body fluids according to potential risk of infectivity, based on experimental data from studies of scrapie in sheep and goats.[2 3] Brain and spinal cord were ranked most highly infective, lymphoreticular tissue less so, and most other tissues and body fluids as of low or no detectable infectivity. More recent studies of cattle with proved bovine spongiform encephalopathy have to date detected infectivity only in the brain and spinal cord with none detectable in other tissues or fluids, including gut and lung (from which some heparins are sourced); pancreas (the source for bovine insulin); bone, bone marrow, skin, and cartilage (the raw materials for gelatin); milk (from which lactose and lactulose are derived); and serum (used in vaccine production).[2 4]

The guidelines also recommended purification procedures known to remove or inactivate agents causing transmissible spongiform encephalopathies, autoclaving or treatment with sodium hydroxide or sodium hypochlorite being considered more effective than extraction by organic solvents, protein removal, or filtration, although no procedure guarantees complete inactivation of these agents.[3 5] Bioassay can now be used to test the efficacy of purification methods in removing scrapie or bovine spongiform encephalopathy agent.

In response to the recent crisis in Britain, pharmaceutical companies have made available information on the sourcing and processing of their products, together with risk assessments based on this information. In statements issued by the manufacturers of bovine insulins available in Britain, the risk to patients is assessed as negligible. With regard to gelatin, the Spongiform Encephalopathy Advisory Committee concluded in its statement of 24 March that it was safe for use in pharmaceutical and medical devices. The Association of the British Pharmaceutical Industry has provided assurance that there is no threat from medicines that have been manufactured in Britain since 1989 to the same standards as became obligatory elsewhere in the European Union in 1992.

Whether or not patients exposed to products of bovine origin before the respective measures were implemented could be incubating disease will depend in the first place on whether or not bovine spongiform encephalopathy proves to be transmissible to humans, as well as the sources and purification processes used at the time and the extent of exposure to the products in question. For some products it can be demonstrated in the laboratory that the purification or extraction procedures in use since well before the advent of bovine spongiform encephalopathy were sufficient to eliminate disease activity. The route of dosing would also be a factor, a higher dose being required to cause infection (in animal models) orally than parenterally, and subcutaneously than intravenously.[2] In reality, with the current state of knowledge, the risks in some cases are as unquantifiable as those of having eaten beef in the mid-1980s.

For patients currently receiving medication of bovine origin, which will have been sourced and manufactured according to the guidelines, there is a need to keep the perceived risks of continuing such medication in perspective. Doctors and patients will need to weigh these unknown and possibly non-existent risks against the known risks of discontinuing or changing medication; for example, restabilising diabetic patients on porcine or human insulins may prove difficult because they have a different action profile from bovine insulin. In discussing the potential risks with patients, doctors can refer to the measures described above, which have now been in place in Britain for some seven years (longer than elsewhere in Europe), and to the fact that the Spongiform Encephalopathy Advisory Committee believed that they were "sufficient with current knowledge to satisfactorily protect...human health."[2]

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Conflict of interest: Medical adviser to CP Pharmaceuticals Limited, a manufacturer of bovine insulin.

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Shortage of organs for transplantation

Crisis measures must include better detection and maintainence of donors

Of all the problems foreseen in the pioneering days of organ transplantation, a shortage of donor organs was not even remotely considered as a barrier to progress. Such has been the success of transplantation over the past two decades that organ shortage is now considered the major limitation. This week sees the publication of an extensive study by the British Transplantation Society's working party on organ donation.[1] Chaired by Professor John Fabre, the working party examined a variety of issues influencing rates of organ donation in Britain.

Clearly, the fact that fewer young people now die because of road traffic accidents or intracranial haemorrhage is a cause of donor loss that must be welcomed. However, the report highlights the fact that many medical and financial practices still mitigate against the efficient identification and recruitment of organ donors. In particular, the lack of intensive care beds means that many potential donors are not being ventilated, with the decision depending on locally devised prognostic criteria. As a result, waiting lists for renal transplantation continue to rise, putting increasing pressure on dialysis budgets. While it would be inappropriate to increase budgets for intensive care purely to reduce dialysis costs, most authorities agree that the number of intensive care beds in Britain is inadequate in comparison with other western European health services.[2 3]

Given the inadequacy of intensive care facilities, the working party recommends several initiatives to address the current shortage of donors, including interventional (elective) ventilation, greater use of non-heart beating donors, better training of staff, and better transplant coordination, all of which would require better funding.

Interventional ventilation—ventilating, solely for the purpose of organ donation, a comatose patient who is close to death from severe brain damage—runs up against legal and ethical impediments; it is imposed on an individual not for his or her own good but specifically to benefit others, and as such

it could be considered an assault. The working party has recommended legislation to circumvent this legal impediment.

The report states that "in most countries of the European Community, seriously ill, comatose patients are routinely admitted to an intensive care unit while undergoing investigation, often while ventilated. In such circumstances interventional ventilation is not necessary." To many outside Britain, the idea that seriously ill, comatose patients are not routinely admitted to an intensive care unit seems extraordinary. The authors of the report point out that in Britain, reimbursement for costs at the donor intensive care unit is £1000, compared with as much as £40 000 in Spain. One can but speculate how a much higher level of reimbursement might change the mindset of those currently charged with managing intensive care units in Britain.

The Spanish system of organ procurement comes in for special comment. Despite a dramatic decrease in fatal road traffic accidents,[4] organ donation rates in Spain reached 27 per million population in 1995, in contrast with 15.8 per million in Britain. Spain itself attributes this success to its transplant coordination network, which has a different philosophy from that in Britain. In Britain, transplant coordinators are based in renal transplant centres, while in Spain they are based at the site of organ donation. The prime function of the Spanish local donation team is to detect potential organ donors within intensive care units at an early stage and to monitor the medical progress through to a diagnosis of brain death and subsequent organ donation. The success of this policy is evident from the donation rates achieved. Whether or not such a system might be adopted in Britain, the report highlights the inadequacy of Britain's current transplant coordinator network and emphasises that a major expansion of coordination is "one of the most important and urgent needs."

The working party highlights the urgent need for improved funding, not only to increase intensive care facilities and improve coordination networks but also to increase surgical staffing and provide teams qualified to undertake asystolic donation. However, the report fails to address those measures that could be undertaken within existing budgets to maximise the country's current donation potential. Measurable increases in organs have been achieved in other countries by introducing mechanisms for donor detection, staff education, and donor maintenance.[4 5] Our own experience with the European Donor Hospital Education Programme in over 30 countries around the world has shown that simple education policies on requesting organ donation can considerably improve organ donation rates.[6] Data presented to the British Transplantation Society on a controlled evaluation of the programme in the north west region of Britain confirm this positive effect (RA Sells, personal communication).

A multinational effort to address all areas of the donation process is now being piloted in selected hospitals throughout the world. This programme, called Donor Action, seeks to introduce the best practices from around the world for the benefit of staff who may be involved in treating potential organ donors and patients on transplant waiting lists. It provides a comprehensive package of tools, resources, guidelines, and training to help a donating hospital diagnose its own potential for organ donation and improve its own donation practices. After a diagnostic review, areas of weakness can be identified and the appropriate management and educational changes introduced.

The working party's report highlights the desperate need for increased funding to improve rates of organ donation in Britain. Its recommendations are to be warmly welcomed. However, the transplant community should also consider whether practices existing elsewhere in Europe could help to improve the supply of organs for transplant within the budgetary constraints of the NHS. Unfortunately such considerations were outside the remit of this report.

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Landmines: time for an international ban

The United Nations must end this indiscriminate killing and maiming of civilians

Anti-personnel landmines remain one of the unmet challenges of preventive medicine. In the aftermath of modern civil and international conflict, civilians—especially children—continue to be killed long after the end of hostilities.[1 2] Many victims are not recorded in official statistics. None the less, estimates place the current death rate at some 800 people a month, with another 1000-2000 surviving each month with blast injuries and consequent disability.[1] At least 26 of the estimated 200 nations of the world have landmines seeded over their surface, and many other countries have a role in their manufacture, sale, and use. Even if an international moratorium on the manufacture and use of anti-personnel mines were achieved now, landmine clearance will take centuries.[3]

The case against the continued production and use of anti-personnel mines, like that against poison gas and biological warfare, is their indiscriminate effects on civilians and children. The profession of arms, like all professions, has evolved a code of ethics,[4] with the underlying ethos that even when all attempts to maintain peace have failed, when peoples or nations go to war, it is still possible to prosecute combat at a level above that of animalistic degradation.[5] All nations currently regard the use of landmines as legitimate weapons of war. If used within existing ethical codes (laying, isolating with barbed wire, marking conspicuously, mapping, and lifting after deployment) there is no moral violation in their tactical use. But, as with poison gas and biological weapons, those most likely to use them are those least likely to observe humanitarian codes of armed conflict.

Landmines are specifically designed as anti-vehicle mines, as ambush weapons, or as anti-personnel mines. Modern anti-vehicle mines are highly sophisticated and contain computerised circuitry that can detect critical mass, ferrous metals, or vibration, and can select vehicles or other hard targets for destruction. There are now a bewildering array of anti-personnel mines, and more than 60 different types are used in conflict zones.[6] Anti-personnel mines can be