XENOTRANSPLANTATION

Pig-Human Transplants Barred for Now

LONDON—A panel of British government advisers gave qualified approval in a report last week for continued research into the transplantation of pig organs into humans. But the panel ruled out clinical trials until further research has shown that such transplants are safe and that patients will benefit. Health Minister Stephen Dorrell said there are many major unanswered questions: "It is essential that the risks associated with xenotransplantation are better understood before the technique is used on human patients."

The government accepted the panel's main piece of advice: It is setting up a new national body, the U.K. Xenotransplantation Interim Regulatory Authority, to control developments in the field of organ transplants between species while a full legal framework is developed. Biologist and former Archbishop of York, Lord Habgood, will chair the authority, which will be established within the next few months. In the meantime, the government is asking those in the scientific and medical communities who want to offer additional advice to send in their views in the next 3 months.

The independent Nuffield Council on Bioethics, which produced its own report giving guarded approval for xenotransplantation research last year (*Science*, 8 March 1996, p. 1357), welcomed the government's response—in particular the establishment of a national regulatory body. The council feared that regulation might be left to local ethical bodies, which it felt would be inadequately prepared to deal with the wide range of issues involved. "Adequate national regulation is necessary both to safeguard public health and to make internationally agreed standards," says Council Secretary David Shapiro. "The government has made the right decisions. We believe the field can move ahead when the right controls are in place," says Albert Weale, a professor of government at the University of Essex, who headed the Nuffield inquiry.

The new report, "Animal Tissue Into Humans," was produced by an advisory group of scientists, lawyers, and lay representatives chaired by Ian Kennedy, a professor of law and medicine at King's College London. The panel was asked to consider the ethical issues and questions of animal welfare as well as health risks. The panel agreed that transplanting pig organs would be ethically acceptable, but ruled out the use of primates as a source of donor organs. It said that primates should be used only for xenotransplantation research—and then only when there is no alternative method of obtaining critical information.

The panel called in particular for more research into the potential for new human diseases arising from exposure to pig pathogens. Virologist Robin Weiss at the Institute for Cancer Research in London has shown in culture experiments that a retrovirus—which is carried in the genome and can be passed from parent to offspring—found in pig cells could infect human cells. This raises fears that retroviruses may infect patients receiving xenotransplants and even spread more widely among the population. "That's a real worry," says Mark Walport, head of medicine at London's Royal Postgraduate Medical School and a member of the Nuffield Council's panel. "Concerns about the potential public health consequences have got to be taken on board," says Weiss.

The growing worldwide demand for human organs, which far outstrips supply from human donors, is fueling the drive for xenotransplants. Imutran, a Cambridge-based company that has produced genetically modified pigs in a program of research it hopes will eventually lead to transplantable organs, welcomed the report. But it urged that the new authority be set up as soon as possible so as not to delay the development of the new technology.

–Nigel Williams

U.S.–CHINA COOPERATION

Science Academies Set Joint Agenda

Leaders of the U.S. National Academy of Sciences (NAS) and the Chinese Academy of Sciences (CAS) met in Beijing last week for the first time since 1988, shortly before the events in Tiananmen Square soured relations between the two organizations. As a first step toward closer ties, the two academies agreed to organize a series of meetings between young U.S. and Chinese scientists; they also discussed launching a program of targeted research projects involving small teams of researchers from each country. Human rights was not on the agenda, although NAS officials emphasized privately that the academy will remain active in trying to help individual scientists who may face government persecution.

"It is clear that China and the U.S. will be the leading nations of the world in the next century, and the scientists and engineers in our two countries therefore have a special responsibility," declared NAS President Bruce Alberts in remarks after the 2-day meeting. His counterpart, Zhou Guangzhao, called the talks "very successful and very important," emphasizing the value of "contacts between young scientists, the future scientific leaders of the two countries." NAS had decided to reestablish ties with China in 1993, says William Colglazier, NAS executive officer, but a change in NAS leadership and logistical problems prevented the two sides from getting together sooner.

The round of young scientists' meetings will be patterned after the annual "Frontiers of Science" sessions for U.S. scientists under the age of 45 that NAS has held for the past 8 years (*Science*, 24 November 1995, p. 1294). The academy recently began sponsoring similar meetings that bring together young U.S. and German scientists, and it is discussing the idea with Japan as well. "We've found them to be a fruitful way to get the young people talking to each other," says Colglazier.

Under the new agreement, a handful of Chinese scientists will attend this fall's 3-day meeting in California, and a 1998 meeting will feature an even split in participants between the two countries. A similar mix of scientists from many disciplines will assemble in China in 1999. The cost of the meetings will be shared by the two academies. The tab for NAS will be roughly $100,000 a year, estimates Colglazier, to be paid from the academy's endowment. The amount represents a significant commitment of resources from that source, he noted.

Although no specific plans for joint research projects were developed at last week's meeting, the two sides discussed such areas of mutual interest as sustainable development and energy. NAS and CAS are, in fact, already working together with India on a 3-year project focusing on land use, consumption, and population growth in the world's three most populous nations. The group is planning a workshop this fall in Beijing and expects to finish its study some time in 1998. Academy officials from China and India hope the results will shape the economic policies of their countries and, as a bonus, demonstrate to their governments the value of scientific advice. In the meantime, the annual face-to-face meetings among individual scientists are expected to forge intellectual links between some of the best minds in both countries.

–Jeffrey Mervis