In brief

French nurse investigated over helping patients to die: Christine Malevre faces murder charges after admitting that she actively helped 30 terminally ill patients to die at the request of the patients' families or the patients themselves. The case has reopened the debate about euthanasia in France.

Medical negligence awards set to rise in Britain: The biggest compensation awards for medical negligence are set to rise by an average of about 30% after a judgment last week by the House of Lords. The ruling means much larger payments to compensate for loss of earnings and the cost of future care. (See the *BMJ's* website, www.bmj.com, for the full story).

Hospital recalls women for cervical cancer checks: St George's Hospital in Tooting, London, has recalled more than 1000 women after an independent inquiry found that they may have been given inadequate treatment for cancer of the cervix. Graham Barker, the head of the colposcopy service, has been suspended.

Hospital waiting lists down: Provisional figures show that waiting lists for admission to NHS hospitals in England fell by about 21 000 in June, the first drop for many months. The net reduction for the second quarter, reflecting extra NHS funding, is expected to be about 10 000.

Quality of healthcare in UK prisons is patchy: The All Party Parliamentary Drugs Misuse Group concludes in a report that many people in prison who have a drug problem are not receiving adequate medical and other help, and run the risk of going back to hard drugs when they leave prison.

Correction

Brundtland replaces top staff at the WHO: The article (25 July, p229) stated that the Norwegian government was rumoured to have given "a sizeable sum ($30m, £19m)" to help reform the World Health Organisation. In fact the total amount contributed by Norway is less than $2m—half of which will go towards the WHO renewal fund.

Fifty mice cloned by new technique

Janice Hopkins Tanne, *New York*

An international team of scientists led by Dr RyuzoYanagimachi from the University of Hawaii in Honolulu has cloned more than 50 mice in several experiments, using a new technique that represents a significant step forward in cloning technology *(Nature* 1998;394:369-74).

In the same issue of *Nature*, scientists at the Roslin Institute in Scotland have been cleared of accusations that Dolly, the first mammal to be cloned from differentiated adult cells, was not in fact a clone. Two groups of researchers have shown by microsatellite analysis and DNA fingerprinting that Dolly is a true clone (*Nature* 1998;394:329 and 329-30).

Dr Teruhiko Wakayama, a researcher at the University of Tokyo, pioneered the new cloning technique, which involved injecting nuclei from terminally differentiated somatic cells (Sertoli, neuronal, and cumulus cells) into enucleated mouse oocytes. The oocytes were left for up to six hours in vitro. They were then chemically activated in a culture medium by strontium rather than by electrical activation as was done by the Roslin team that cloned Dolly.

The delay between microinjection and activation seemed to facilitate nuclear changes essential for development, Dr Yanagimachi said at a news conference in New York last week. The best results came with nuclei from cumulus cells, which surround the oocyte in the oviduct of the female mouse.

The first surviving cloned mouse, named Cumulina, was born on 3 October 1997 and is now nine months old. She and other clones have been mated and have produced normal offspring, several of which have now developed into fertile adults. In additional experiments, the team produced clones of clones, suggesting that the cloning process does not cause harmful changes in the animals.

Although about two thirds of the cloned embryos became implanted, only 2-3% of them developed to full term baby mice. Nevertheless, scientists applauded the Hawaii group's achievement as a major advance.

Dr Virginia Papaioannou, a professor of genetics and development at Columbia University, New York, said: "This is an extremely important piece of work. Cloning from an adult nucleus, from a differentiated cell type which is quite stable and thought to be permanent, requires that the pattern of gene expression be reprogrammed, that the cell forget what signals it is acting under, forget what genes it is supposed to be expressing, and start all over again to recommence development."

Dr Robert Wall, a research physiologist at the United States Department of Agriculture in Beltsville, Maryland said that the new technique would be invaluable to answer a number of old questions. "Can the nucleus from other cells be used? Can the efficiency of the method be increased? Can male clones be produced? Can cultured cells be used as nuclear donors? What can we learn about reprogramming, or de-differentiation, imprinting, genome activation, and cellular differentiation?"

Significant advance

The latest breakthrough is extremely important as mice have a short gestation period, well characterised genetics, and embryos that are much easier to manipulate than those from larger mammals. With the new technique it will be possible to study basic biological questions in a large, identical animal population. It could also lead to the production of economically valuable animals, medically useful animals, the rescue of endangered species, and the production of replacements for lost cells, tissues, or organs.

Genetically identical animals would speed drug testing, giving a better view of how drugs act and their side effects, said Dr Alan Colman of PPL Therapeutics at the Roslin Institute, which is licensing the new technique from the University of Hawaii and its collaborator ProBio America.

Currently, attempts to produce transgenic animals result in no more than 5% with the inserted gene. Cloning from a single transgenic animal would produce a herd of transgenic clones which could produce human proteins in their milk or organs for xenotransplantation that are compatible with humans. So far, there are no male clones. "There is something special about cells associated with the female reproductive tract," said Dr James Robl of the University of Massachusetts at Amherst. All cloned animals have been developed from various female reproductive cells. □

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Three generations of cloned mice