

First whole human chromosome sequenced

On Dec 1, the first milestone in the human genome project was reached with the reporting of an operationally complete DNA sequence of the gene-encoding portion of a human chromosome. Ian Dunham of the Sanger Centre (Wellcome Trust Genome Campus, Cambridge, UK) and collaborators from around the world give details of the sequence of the long arm of chromosome 22 (22q)—33.4 megabases containing at least 545 genes and 134 pseudogenes—in *Nature* (1999; **402**: 489–95; www.nature.com).

Progress on sequencing the human genome is being made at an ever-increasing rate. A year ago, 2005 was the estimated date for the completion of the whole genome sequence. But on Nov 23, the deposition into GenBank of one third of the genome was marked by the “Billion Base Pair Celebration”. “Fundamental changes in the scientific approach to the public-sequencing effort have occurred in 1999, many in the past 3 months”, said Francis Collins, director of the US National Human Genome Research Institute, in late October. “Consequently, the accrual of human sequence information has dramati-

cally increased” and 90% of the human DNA sequence should be “freely available as a working draft by spring, 2000” (www.nhgri.nih.gov/).

Chromosome 22 is the second-smallest of the human chromosomes. Dunham’s group started work on its sequence in 1995 “mainly for technical reasons, but also because there are some interesting diseases associated with the chromosome, such as schizophrenia”. The euchromatic part of chromosome 22—the regions that con-

tain the genes for proteins—was sequenced by a clone-by-clone approach, continues Dunham, a method in which information on specific regions can be gained more rapidly than by the “shotgun” approach developed by Craig Venter. Now, adds Dunham, “when anyone maps a disease locus to 22q, all the reagents are available to home in rapidly on the actual gene”.

By extrapolating from their results,

Dunham and co-workers estimate that the human genome will contain 60 000 genes, “rather less than some recent estimates”, says Dunham. He

explains this discrepancy by noting that finding genes in human DNA is still an evolving methodology and more may be found later in the chromosome 22 sequence. Our results, he says, “provide the first view of the complex chromosomal landscapes that will be found in the rest of the genome. Our next step will be to find out

Still a long way to go

about the tissue-specific expression of the predicted genes. After that we can get on with the biology, in collaboration with scientists around the world”.

And the next milestone in the human genome project? Probably the complete sequence for chromosome 21 or the Y chromosome, says Dunham.

Jane Bradbury

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Cathepsin C deficit implicated in aetiology of periodontitis

Researchers have linked mutations in cathepsin C with the rare autosomal recessive disorder Papillon-Lefèvre syndrome (PLS), a disorder which is usually picked up by dentists when patients present with severe periodontitis. The scientists suggest that the cathepsin C pathway may also be important in the aetiology of more common forms of periodontitis.

The symptoms of PLS are severe early-onset periodontitis—patients typically lose their milk teeth before the age of 4 years and their adult teeth around puberty—and palmo-plantar keratosis. The PLS gene locus had previously been mapped to 11q14-q21 but by studying eight families, Nalin Thakker (University of Manchester, UK) and colleagues

have now identified a candidate gene, *CTSC*. This gene encodes the lysosomal protease cathepsin C. “Direct investigation of *CTSC* revealed homozygous sequence changes in all affected individuals in all the families”, says Thakker. The mutations included one nonsense mutation, one splice-site mutation, and six missense mutations. In two of the families, there was an almost total lack of cathepsin C activity in individuals with PLS (*Nat Genet* 1999; **23**: 421–24).

PLS is extremely rare—estimates put its prevalence as low as one in four million. However, variations of the cathepsin C pathway may be responsible for the late-onset periodontitis that occurs in 10–15% of people worldwide. “Cathepsin C

plays an essential role in the activation of granule serine proteases expressed in bone marrow-derived effector cells of the myeloid series”, says Thakker. Two likely targets are neutrophil cathepsin G and elastase, both of which are implicated in host antibacterial responses. Thakker suspects that a lack of activation of these enzymes disrupts the host response to bacterial infection in the junctional epithelia of periodontal pockets. “Further studies of the pathways involved should tell us more about the underlying biology and may provide leads for the development of new preventive and therapeutic strategies for periodontitis”, he predicts.

Kathryn Senior

Mechanism for putative link between atherosclerosis and viruses found

Experiments done by US scientists indicate that infection of human arterial smooth muscle cells (SMCs) with human cytomegalovirus (HCMV) induces cellular migration towards sites of chemokine production through the expression of a virally encoded chemokine receptor in the smooth muscle cells. "These observations provide a molecular link between HCMV and the development of vascular disease", says lead investigator Jay Nelson (Oregon Health Sciences University, Portland, OR, USA).

Indirect evidence links HCMV infection with the development of human vascular diseases including carotid and coronary artery disease, vascular sclerosis after transplantation of solid organs, and arterial restenosis after angioplasty. In animal models, herpesviruses induce or speed up the development of atherosclerotic lesions. How this occurs is not known but it has been suggested that viruses alter the proliferation of SMCs and/or migration of these cells

to the intima of blood vessels, thereby causing them to narrow.

Nelson and his team examined the effect of HCMV on SMC mobility in vitro in primary arterial and venous SMCs infected with wild-type HCMV or virus unable to express US28, a viral chemokine receptor expressed early after infection which binds MCP-1 and RANTES.

Infection of SMCs with HCMV significantly increased cellular migration, but the migration was dependent on expression of US28. Induction of migration also required endogenously expressed MCP-1 (produced in large amounts by non-infected SMCs) or exogenous RANTES (*Cell* 1999; **99**: 511–20).

According to the researchers, US28-induced migration of SMCs could be explained both by directed movement of cells (chemotaxis) and

by random movement of cells stimulated by ligand binding (chemokinesis). But why, they asked, would the virus want SMCs to migrate?

They propose that "HCMV may be utilizing the SMCs as a cellular vehicle to disseminate virus, similarly to the way that the virus uses macrophages. In essence, the virus infects SMCs, which migrate to sites of inflammation where

infiltrating macrophages acquire virus to disseminate HCMV throughout the body".

This research is very relevant, says Yi Zhou (Cardiovascular Research Foundation, Washington, DC, USA) in that it "provides reliable evidence for the link between HCMV infection and atherosclerosis development".

Xavier Bosch

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Is there a virus inside?

Delayed healing of spinal-cord injuries possible

US researchers report that, in an animal model, even delayed treatment of spinal-cord injury can result in healing. "The threshold up until now has been 24 hours. Nobody had been able to break that barrier", says lead author John McDonald (Washington University School of Medicine, St Louis, MO, USA). Although treatments such as methylprednisolone are important for newly injured patients, regenerative therapies are urgently needed for those people with chronic injury, he notes.

McDonald and co-workers transplanted mouse embryonic stem cells into rat spinal cords 9 days after traumatic spinal-cord injury. By 2 weeks,

the mouse cells had filled the site of injury; by 5 weeks, their density had decreased and some of the cells had been replaced by extracellular matrix. The surviving cells differentiated into neural cells. A month after surgery, the rats had improved gait and could support their own bodyweight (*Nat Med* 1999; **5**: 1410–12).

"We were hoping to see that even after the delay, the cells would survive, migrate, and differentiate. The behavioural improvement was completely unexpected", says McDonald, who is also a clinician. "I tell my patients we've made one more step forward in a field that has recently had quite a few steps."

But the recent progress has not been without controversy. Three US ethicists warn in an editorial that, although stem-cell research could result in many new treatments, it is being "held hostage to the politics of the American abortion debate". For McDonald, "as long as people aren't using human cells to generate an organism, I think the benefits from studying those cells would outweigh any ethical considerations. It's almost unethical not to study them".

Marilynn Larkin

Inhibitory molecules targeted

Spinal-cord regeneration after nerve-tissue transplantation could be enhanced by cleavage of inhibitory chondroitin sulphate proteoglycans (CSPGs). Concentrations of CSPGs increase after compression injuries in rats and the CSPGs then "hang around for a long time", says study coauthor Dena Howland (University of Florida, Gainesville, FL, USA). But treatment with exogenous chondroitinase cleaves the CSPGs, possibly decreasing inhibition and paving the way to increased growth (*Exp Neurol* 1999; **160**: 51–65).

News in brief

Mummy's the word Researchers have confirmed the common origin of human T-cell lymphotropic virus type I in Asia and the Andes. Nucleotide sequences of proviral DNA extracted from the bone marrow of 1500-year-old Andean mummies was similar to that from living Andeans and Japanese, a result which provides evidence of the migration of Mongoloids to the Andes before the Colonial era (*Nat Med* 1999; **5**: 1428–32).

Less cholesterol, more bone? Statins may do more than reduce cholesterol concentrations, according to a new study. US investigators found increased bone formation in mice injected subcutaneously over the calvaria with lovastatin or simvastatin. In addition, trabecular bone volume increased in rats given the drugs orally. These effects were accompanied by an increase in expression of the gene coding for bone morphogenetic protein 2 in bone cells. The authors suggest that "in appropriate doses, statins may have therapeutic applications for the treatment of osteoporosis" (*Science* 1999; **286**: 1946–49).

How to live longer in three easy steps

Low cholesterol concentrations, low blood pressure, and abstinence from smoking can increase life expectancy by almost 10 years, according to a report from the USA.

Many studies have established a relation between these three risk factors and the incidence of coronary heart disease (CHD) and cardiovascular disease (CVD). However, assessment of risk in people with favourable cholesterol concentrations, blood pressure, and smoking status has always been based on statistical estimates, because no study has included a sufficient number of low-risk individuals to permit direct measurement. Now, Jeremiah Stamler (Northwestern University Medical

School, Chicago, IL, USA) and co-workers have used data from two large studies—the Multiple Risk Factor Intervention Trial, and the Chicago Heart Association Detection Project in Industry—to measure risk based on observed mortality.

In the first study, 361 662 US men aged 35–57 years were enrolled during 1973–75. The second (during 1967–73) involved 23 744 men and women aged 18–59 years. For the purposes of Stamler and colleagues' study, participants with a history of diabetes, myocardial infarction, or abnormal electrocardiograms were excluded. Low risk was defined as a serum cholesterol concentration of less than 5.17 mmol/L, blood pressure of 120/80 mm Hg or lower,

and no current cigarette smoking. The researchers measured cause-specific mortality, relative risks of death, and life expectancy in low-risk groups compared with others.

Death rates from CHD and CVD were 77–92% and 72–85% lower, respectively, in the low-risk cohorts than in other cohorts. Mortality from all causes was 40–58% lower, and life expectancy was 5.8–9.5 years longer for low-risk groups (*JAMA* 1999; **282**: 2012–18). “The results are important for public-health policy”, says Stamler. “The emphasis should now be on primary prevention of the risk factors as early as possible, not just on those who are already sick.”

Zoë Mullan

New tools and old for management of STDs

Molecular diagnostics, such as PCR, are set to revolutionise the management of sexually transmitted diseases (STDs), heard delegates at the Lesedi Afrika '99 Congress (Sun City, South Africa; Nov 21–24).

In industrialised nations, “the field of STDs, more than any other field, has benefited from the new technology” of nucleic-acid amplification, said Max Chernesky (St Joseph's Hospital, Toronto, Canada). Assays that use such technology could be up to five orders of magnitude more sensitive than immunoassays, he noted. A computer model developed by Chernesky showed that use of such diagnostics could decrease the rate of genital chlamydia far more than standard tests. And despite increased costs, screening with PCR would also be cost-effective if targeted to particular women, he said.

PCRs have now been developed for all STD pathogens, which should help epidemiological research. Using multiplex PCR, Ron Ballard (South African Institute of Medical Research, Johannesburg) found that herpes simplex virus type 2 is a far more common cause of genital ulcers in South Africa than previously thought, particularly among people with HIV. Syndromic management or mass treatment with antibiotics may, therefore, be less successful than hoped. However, Frank Bowden (Territory Health Services, Darwin, Australia), suggested that a small proportion of genital ulcers of unknown aetiology may be donovanosis (caused by *Caly-*
mmatobacterium granulomatis, recently

renamed *Klebsiella granulomatis*); this suggestion can now be investigated by PCR, Bowden said.

More must be done to halt HIV

The continued lack of resources for HIV prevention and treatment in Africa—including the host country's failure to implement drug regimens to prevent vertical HIV transmission—was high on the agenda. STD management remains a key strategy in decreasing HIV transmission, and after the success of syndromic management in Tanzania (*Lancet* 1995; **346**: 530–36), and the failure of mass presumptive antibiotic treatment in Uganda (*Lancet* 1999; **353**: 525–35), further trials will determine whether targeting of presumptive therapy to high-risk groups will improve efficacy and reduce costs. Such studies are in progress, but given the rising HIV incidence, “we can't afford to wait for scientific perfection”, cautioned Graham Neilsen (Department of Health, South Africa). “We need to act now.”

Kelly Morris

US inequalities in kidney transplantation

Results from the USA indicate that black people have less access than white people to kidney transplantation services.

In a study on 1392 patients with end-stage renal disease, John Ayanian (Harvard Medical School, Boston, MA, USA) and co-researchers found significant differences between racial groups in referral rates for transplantation (50.4% for black vs 70.5% for white women, and 53.9% for black vs 76.2% for white men). However, black patients were only slightly less likely than white patients to actually want a transplant. The study, says Ayanian, challenges the idea that patients' preferences are the cause of racial differences in referral rates (*N Engl J Med* 1999; **341**: 1661–69).

Commenting on the study, Paul Roderick (Southampton General Hospital, UK) says “there are indications” that Asians in the UK are also less likely to receive a kidney transplant. This may be due to lack of suitable donors from ethnic communities, he suggests.

In a separate study, Pushkal Garg (Harvard Medical School) and co-workers found that patients treated in profit-making facilities had a 26% higher mortality, and a 20% lower rate of placement on the waiting list for a transplant than those in not-for-profit facilities (*N Engl J Med* 1999; **341**: 1653–60), indicating that cost factors may also lead to inequalities in access to renal transplantation.

Khabir Ahmad

New calls made for changes in research on animals

In late October, a radical group linked to the Animal Liberation Front warned that it had sent letters booby-trapped with razor blades to more than 80 US scientists who experiment on primates. An internet communiqué posted by the group—the “Justice Department”—said that the scientists had until the autumn of 2000, “to quit [the] vivisection industry or be subjected to violence which is incomparable to booby-trapped letters”.

Leading bioethicist Peter Singer has condemned these and other recent attacks on US medical researchers by militant animal-rights activists, saying that this type of extremism is unethical and counter-productive. But Singer, whose appointment in July as a professor in the University Center for Human Values, Princeton (NJ, USA), raised a storm of local controversy, has also taken the opportunity to urge physicians once more to help end the use of animals in medical research.

Singer argues—as he did in his ground-breaking 1975 book, *Animal Liberation*—that human domination of other species is morally indefensible and that medical research on animals should be outlawed. “I think that the institution of animal experimentation as it exists today is one that ought not to be allowed”, says Singer, an ex-president of the International Association of Bioethics. “We have a whole institution which is based on the idea that animals are just things, research tools that you can have delivered to your lab. It’s all based on what I think is an ethically indefensible premise. That’s not to say that, if you could really start afresh, that you might not find some justification for some things that involve animals in non-harmful or minimally harmful ways.”

Singer, whose views are taught in university ethics classes around the world, believes doctors should speak out. “I think that responsible physicians should be saying, ‘look, I’m concerned about animals, I think that animals are used in ways that don’t show proper consideration for their interests and something should be done about it.’” His stand is supported by the Physicians Committee for Responsible Medicine, a group of US doctors who vigorously promote alternatives to the use of animals in research. Neal Barnard, president of the Committee, senses that the medical community is gradually changing

its thinking and says that “in recent years it has become harder to deny that animals suffer, that they have complex social bonds and familial interactions that are destroyed by the routine day-to-day events of research”. But, he adds, ethics committees considering animal experiments have been slow to respond to these findings.

Researchers, meanwhile, are being urged to adopt a united front to counter the extremist violence perpetrated by some animal-rights activists. The National Association for Biomedical Research (NABR), which is committed to “the responsible and humane use of animals” in research and which represents 350 of the largest US research institutions, says the research community must work together to explain the importance of its work to the public. “Scientists have to be prepared to give people the facts, so they understand why animals are necessary and how responsibly they’re used”, explains executive vice-president Barbara Rich.

Instead, says Joseph Eschbach, president of the Washington Association for Biomedical Research, misinformation about research on animals is common and activists often demand that all animal research be replaced by in-vitro systems. Yet, as Eschbach wrote recently in an opinion piece in the *Seattle Times*, “computer models, cell cultures and other sophisticated technologies provide alternatives to animal use wherever possible, but cannot mimic the complicated interactions among cells, tissues and organs”.

Canadians for Health Research, a health-research advocacy group, is also worried about the “growing militancy in the animal-rights movement”. It recently reminded animal researchers to be vigilant in their security precautions. But, says Rich, scientists should not be intimidated by the latest wave of threats. She suggests that the extremists are attempting to personalise the debate over the use of animals in research. “They are singling out individuals and trying to intimidate them. That we will not stand for. It’s the age-old thing. If you get everybody involved and we

all share a common mission, then no one stands out.”

However, Frankie Trull, president of the Foundation for Biomedical Research, a sister organisation to NABR, warns that threats from animal-rights extremists “are not idle threats. “Some of these letters were mailed to researchers’ homes, as well as to their labs. Not only the targets, but their children could be seriously injured.” She notes that, on the same weekend that the razor letter alert was issued, animal-rights activists engaged in other criminal acts, including firebombing vans belonging to a Rhode

Can it ever be ethical?

Island furrier, stealing animals from a Western Washington University laboratory, and ransacking the offices of a professor who does behavioural research. This spate of attacks followed the nationwide observance of Biomedical Research Day on Oct 21.

People have been concerned about animal rights since medieval times, but Rich and others agree that the modern movement—both the considered debate and the more extremist elements—owes its impetus to Singer. Rich thinks animal-rights protests are on the rise because of “a new infusion of firebrands”. It’s one thing, she says, to advocate a vegetarian lifestyle, but “quite another to engage in this kind of violence”.

Singer, however, questions whether interest in animal rights is really on an upswing. In a recent *Time* magazine article he wrote that “the law has been terribly slow to catch up with people’s more enlightened view of animals”, and he points out that his Princeton appointment was controversial not because of his views on animal rights, but because of his views on euthanasia. However, he acknowledges that the ethical changes he has been advocating for the past 25 years are radical ones so “you shouldn’t expect them to happen overnight”. People, he says, have had anthropocentric views of the world “since the book of Genesis, at least” and so it may be some time before views on the ethics of animal experimentation change greatly.

Jon Ferry

In February, the eyes of the world focused briefly on Jordan, when world leaders attended the funeral of the late King Hussein. The capital Amman seemed affluent and modern, with an easy co-existence of the traditional with the new.

Amman is carpeted by new buildings, and the drive to the city centre reveals all the trappings of modern commerce and leisure alongside more traditional areas. However, this development masks considerable social and economic problems. Many of the new buildings are empty, with an estimated 10 000 flats currently unoccupied.

According to Yousif Hiyasat, director-general of the Housing and Urban Development Corporation, the problem is that these flats are expensive and designed for families with high incomes. "There has been no increase in the number of low-cost apartments", he said. Low-income families face serious difficulties finding affordable housing, and many are affected by high unemployment. A recent study by the Department of Statistics puts the figure at around 10% but some independent institutions put it as high as 27% of the working population.

The difficulty for Jordan is that economic development has been heavily influenced by factors outside the control of the government. Unlike many of its neighbours, Jordan is not rich in natural resources and has no oil reserves. Until 20 years ago, it was literally a desert kingdom, but during the Iran-Iraq war, most of the supplies were channelled through the port of Aqaba and there was considerable outside investment.

Similarly, following the Gulf War of 1991, Jordan remains the only official entry and exit point into Iraq and this has brought economic benefits. On the other hand, many Jordanians and Palestinians working in the Gulf states were expelled during the war, and their return to Jordan has put further pressure on the country's infrastructure.

The effect on the medical profession has been particularly severe. The buildings of Amman have always been peppered with doctors' nameplates, although few have had sufficient patients to make a comfortable living. The recent influx has meant that many doctors rarely see more than two patients a day, and cannot earn enough to survive. Some live

with their parents to reduce costs and others take second jobs to supplement their income. A few doctors have taken advantage of the high cost of private treatment in Jordanian hospitals and specialise in the "export"

Time to take control

of patients to Iraq where costs are very low, or in some cases Israel which is conveniently near. A few Israeli hospitals have benefited from an influx of private patients from Jordan but the Jordanian Medical Association, which opposes any normalisation with Israel, has threatened to withdraw licences to practise from physicians known to have open professional links with Israel.

"many doctors rarely see more than two patients a day"

The demand for private medicine is high because government hospitals are overcrowded, lack modern treatment facilities, and are generally held in low esteem. The Al Bashir Hospital, which is the sole government hospital in Amman, treats more than 2000 patients a day. No-one is more aware of the problems than the Ministry of Health and it speaks volumes for the problems facing public health care that the Minister has recently concluded an agreement with the Jordan University Hospital to provide private medical treatment for government employees and their dependents. According to the agreement which came into effect in early August, the hospital will offer treatment to government employees referred by state-run hospitals or health-care centres and Ministry appointed specialists, and the costs will be met by the Health Ministry.

For the most people, public medicine remains the only option, particularly during the current economic downturn. Evidence of economic difficulties is provided by the number of companies who are having to "restructure" to reduce

costs. Jordanian regulations require any company proposing to sack employees to obtain permission from a Joint Committee comprising Labour Ministry officials, trade union leaders and business representatives.

According to Ahmad Shawabkeh, head of the employment department at the Labour Ministry, the task of the Committee is to study each company's credibility and decide whether or not to grant the request. There is currently a rush for such permits. Leaders of the trade unions have criticised the government for not finding permanent solutions to unemployment, and insist that foreign workers should be replaced by Jordanians as the first step towards tackling the problem. Fathallah Emrani, vice-president of the General Federation Jordan's Trade Unions says: "some companies prefer to hire foreign workers because they pay them less than Jordanian labourers". It is also been suggested that successive governments have been reluctant to crack down on illegal workers for fear of offending other Arab countries.

Inevitably there is discontent but public protests are dealt with harshly. In response to this, some groups with grievances have decided to adopt Mahatma Gandhi's principle of non-violent protest. 11 members of the Jordanian Writers' Association went on a hunger strike to protest against their exclusion from public jobs because of personal and ideological differences with the State. For 10 days the government refused to comment for fear of attracting support for the action, but when prominent people joined the strikers, the Prime Minister was forced to comment that he did not believe that jobless Jordanians should go on hunger strike in order to find employment.

At times of hardship, charitable organisations have a role in alleviating the effects of poverty but one organisation recently took an unusual step to help its members. Jordanian weddings are traditionally large and expensive occasions, and people are opting to stay single for longer because they cannot afford to marry. An Islamic charitable organisation recently organised a mass wedding which allowed 48 couples to enjoy a splendid occasion at a greatly reduced cost. It was so successful that there are definite plans to repeat the event.

Peter Kandela

Panos Pictures

US urged to fight "unacceptable" rate of medical errors

On Dec 1, the US Institute of Medicine (IoM) published a report urging the government to set up a US\$100-million-per-year regulatory authority to monitor dangerous medical errors, and to force doctors to have regular competence checks.

US hospitals kill between 44 000 and 98 000 citizens every year as a result of medical mistakes, according to research quoted by the IoM, a branch of the independent National Academy of Sciences. The report, *To Err is Human*, estimates that one in every 30 patients admitted to US hospitals is injured by medical error. About 10% of these incidents are fatal. The epidemic of medical mistakes is costing up to \$29 billion a year, with medication errors alone killing 7000 people annually at a cost of \$2 billion, says the institute.

"These stunningly high rates of medical errors are simply unacceptable in a medical system that

promises first to do no harm", said William Richardson, chairman of the committee that wrote the report.

Most are caused by preventable faults in the system rather than by carelessness. The report especially cites illegible prescription writing, the existence of drugs with very similar names, poor communication during shared care, and the routine stocking of full-strength toxic drugs in hospital pharmacies. It alleges that health-care safety practice is a decade or more behind that of other high-risk industries such as air travel.

The issue is "surrounded by silence" because consumers believe that they are protected against errors by the medical licensing system, says the IoM. But licensing pays little attention to professional errors, and once doctors receive their licenses their performance is never again assessed. Instead, the IoM says, medical licensing bodies should regularly

re-examine doctors and nurses to check whether they are competent to practise.

The IoM also wants Congress to set up a federal centre for patient safety, charged with monitoring medical errors. All hospitals would have to notify serious errors to this centre under a compulsory national reporting system, which would later be extended to other institutions, including ambulatory care. The centre would also fund research into methods for identifying and preventing future errors.

These and other measures could halve the rate of errors in only 5 years, says the IoM. However, to counter litigation problems, it stipulated that data collected by the centre must be immune to discovery demands from lawyers, unless a proven error has led to serious harm.

Peter Mitchell

Bristol surgeon attributes poor performance to "learning curve"

Speaking publicly for the first time last week, one of the surgeons at the centre of the ongoing "Bristol inquiry" in the UK attributed his poor paediatric cardiac performance to the "learning curve" encountered when tackling new surgical techniques.

Janardan Dhasmana was found guilty of serious professional misconduct and banned from doing paediatric surgery by the General Medical Council last year. Last week he was giving evidence to the public inquiry into paediatric

cardiac surgery done in two Bristol hospitals in the late 1980s and early 1990s. When challenged by the inquiry's independent counsel Brian Langstaff as to why Bristol had not sent children requiring complex cardiac surgery to centres with greater experience, Dhasmana said: "I wish nobody had to operate on somebody for the first time but unfortunately that was the practice at that time and I was just keeping up with the practice."

Pressed by Langstaff as to whether there was a deliberate policy in

Bristol to start a new surgical programme that "would lead to the death of children in Bristol who would not necessarily die elsewhere", Dhasmana replied: "Whenever you are put on any complex case anywhere, there is always that possibility that the child could survive elsewhere. How do you know whether he is going to survive here or there unless you have got very clear guidelines? Unfortunately at that time there were no clear guidelines."

Dhasmana also said that his poor performance was partly "institutional" and attributable to occasional inadequate preparation and diagnoses by his cardiologist colleagues.

Sarah Ramsay

Moderate abortion group launched in Ireland

An umbrella group supporting the legalisation of abortion in Ireland was inaugurated in Dublin on Nov 25. Abortion Reform, representing 13 organisations, claims to speak for a new "middle ground" which it says has not previously been represented in the Irish debate. The group's spokesperson, Anne Marlborough a law lecturer at the University of Limerick, said Abortion Reform does not intend to enter the abortion "battleground".

It wants to create an environment in which abortion can be discussed calmly and responsibly and aims to promote a better understanding of abortion in the Irish context.

If the government chooses not to introduce a constitutional amendment, the new group supports the introduction of legislation to implement the X case, allowing doctors to carry out abortions where continuation of pregnancy poses a real and substantial risk to the life of a

woman. In the X Case in 1992 the High Court granted an injunction preventing a pregnant 14-year-old rape victim from leaving Ireland to have an abortion in England. 2 weeks later, the Supreme Court overturned the decision, saying there was a real and substantial risk of suicide if the pregnancy were to continue and, therefore, a termination was permissible.

Karen Birchard

India's illegal sex-determination clinics come under fire

During the past 6 weeks, the Medical Council of India (MCI) has demanded explanations from four New Delhi doctors who are accused of providing illegal antenatal sex-determination tests. The action followed complaints lodged by the Indian Medical Association (IMA) as part of a national campaign against female feticide.

The IMA regard this development as a "test case" to see what punishment can be meted out to doctors and ultrasonographers who provide sex-determination tests aimed at selective abortion of female fetuses. The Indian government banned such tests 5 years ago yet this is the first time action has been initiated against doctors who do not comply. The IMA has written to about 1000 gynaecologists and ultrasonographers in Delhi

reminding them of their responsibilities under law.

"We believe the law will act as a deterrent", says gynaecologist Sharda Jain, while admitting that that it is members of the medical community who bear most of the responsibility for the continuation of selective abortion. In addition to clinicians, the IMA is also lobbying law-enforcement agencies, the media, and non-governmental organisations. A rally held in Delhi on Nov 16 was followed by regional workshops. "The response so far has been very good in terms of educating doctors as well as

enforcing agencies on the provisions of the law", says Jain.

The IMA estimates that about 20 000 clinics, many of which are unregistered and operated by unqualified staff, offer sex-determination services. The practice is widespread and reflects the continuing preference for male children. The result

is a decreasing girl-to-boy birth ratio—from a countrywide average of 935:1000 in 1981 to 927:1000 in 1991. In some north Indian communities the ratio is 750:1000.

Dinesh C Sharma

Science Photo Library

Not for sex selection in India

Northern Ireland appoints first health minister

Northern Ireland's peace process took its first firm steps on Dec 1 as UK ministers voted to end direct rule from London and gave the province its first government in 25 years.

The First Minister in the new power-sharing executive is David Trimble of the Ulster Unionist party and his Minister of Health, Social Services, and Public Safety is Bairbre de Brun. De Brun was born in Dublin, educated at Queen's university in Belfast, and is a teacher. The 44-year-old came to

prominence after the 1994 IRA ceasefire as Sinn Fein's spokesperson on policing and justice.

Although the new government will be have ten departments including the portfolios for health, education, trade, and finance the Northern Ireland Secretary, Peter Mandelson will still be responsible for security. Ministers held the inaugural meeting of the Northern Ireland Executive on Dec 2 in preparation for full devolution of power.

Haroon Ashraf

Towards Israeli-Palestinian agreement on torture

Israeli-Palestinian reconciliation came a step closer during a symposium on torture at Ramallah, West Bank, on Nov 26. The significance of the occasion lay in the fact that this was the first time that Israeli and Palestinian doctors had sat down together to discuss torture, and because Israeli doctors were prepared to cross to the West Bank to attend.

Torture and ill-treatment in custody is a subject close to the hearts of both communities, thus it was no wonder that at first emotions ran high. However, after presentations had been made on torture treatment, rehabilitation, and prevention, a remarkable degree of consensus was reached, and by the end of the morning there were handshakes between members of the two groups.

The timing of the symposium was particularly appropriate, since it was held shortly after the Israeli Supreme Court ruled that "moderate physical pressure"—as employed by the General Security Service—is illegal. Supporters of the ruling are concerned about a Private Member's bill, which is currently before the Knesset, that asks for the ruling to be reversed.

Delegates at the symposium agreed unanimously to write a joint letter to Yoram Blashar, president of the Israel Medical Association, requesting him and his Association to take a strong line in the matter of doctors' involvement in inhumane methods of interrogation.

Duncan Forrest

No boat to Bangladesh for tobacco giant

On Nov 22, the High Court in Bangladesh ordered the cessation of all promotional activities of a yacht owned by British American Tobacco (BAT) which had arrived in the country. The yacht left the UK, in June and has spent the past 5 months sailing from Europe to Asia to promote a brand of cigarette. BAT received another blow when the country's Supreme Court threw out the company's appeal to suspend the High Court order.

The High Court decision followed legal action by anti-tobacco organisations including the Bangladesh Cancer Society, the Bangladesh Anti-Drug Federation, and the Consumer Association of Bangladesh. The petitioners argued that transnational tobacco companies such as BAT are increasingly targeting developing countries because of the decline in their market in the developed world. Before entering Bangladeshi waters, the yacht had sailed for 170 days, and visited 17 countries.

Earlier in the day of the High Court decision, the Chittagong City Corporation Mayor addressed a function organised by BAT, describing the yacht's arrival as "foreign investment". And state-run Bangladesh Television, which does not normally carry tobacco advertisements, publicised the arrival of the promotional yacht.

Khabir Ahmad

Australian government boosts medical research

The Australian government last week announced medical research grants worth AUS\$198 million for 2000—an extra \$58 million on 1999 funding levels.

The move has been welcomed by the Australian Society for Medical Research. “We are delighted that Budget promises are now being delivered. It is part of a 5-year plan and we have been campaigning for this for some time”, said the Society’s President Robert Ramsay.

The funding boost follows

recommendations in the **Wills Review of Medical Research published earlier this year. The extra money will support 426 National Health and Medical Research Council projects in 2000. This year 353 new projects received funding.**

The work includes a large study on skin cancer, suicide prevention in regional areas, various child health studies, ovarian cancer patterns, and promoting breast-feeding in Aboriginal women.

Amanda Tattam

Cattle fodder sold as food in Pakistan

Pakistan’s military government has banned the import of an Australian vetch that is used as cattle fodder but has been marketed in Pakistan as a lentil product for human consumption.

The similarity of the cattle fodder in appearance and taste to the lentil has allegedly enabled an Australian company to cheat millions of Pakistanis for many months. The vetch, said a Ministry of Food spokesperson, “is not meant for human consumption and was highly toxic”. “Its import, marketing, and sale are criminal offences”, added the spokesperson.

The government has lodged a complaint with the Australian High Commission in Islamabad about the “cheating incident.”

Good enough to eat?

The cattle fodder was allowed to be sold in Pakistan because of an alleged underhand deal with a close aide of the deposed Prime Minister Nawaz Sharif. The current ban on the fodder is one of several measures being implemented by the new government to improve food quality which severely deteriorated during Sharif’s era because of widespread corruption. Last week, the state-run television discounted similar suspicions about yellow peas which were also imported from Australia.

An official from the Ministry of Food told *The Lancet* that the country lacked facilities for chemical analysis of pulses despite the fact that pulses are a vital part of Pakistani food.

Khabeer Ahmad

Anthony Blake Photo Library

WHO examines the health of indigenous peoples

WHO met with representatives of the world’s 300 million indigenous people on Nov 23–26 to discuss worsening health conditions and the threat of environmental destruction for such people.

“Life expectancy at birth is 10 to 20 years less for indigenous peoples than the rest of the population”, said WHO’s Director General Gro Harlem Brundtland. “Infant mortality is 1.5 to three times greater than the national average. Malnutrition and communicable diseases such as malaria, yellow fever . . . continue to affect a large proportion”, she said.

A WHO report said that problems such as alcoholism, substance abuse, and suicides pointed to worsening mental health as traditional values broke down. Indigenous representatives hailed the meeting—the first consultation of its kind—as a “very important beginning” even if there were no concrete results. Wilton Littlechild, chief of Canada’s Four Cree Nations, said local communities should have more control over health-care programmes and more environmental safeguards for their air, water, and ecosystems.

Clare Kapp

News in brief

Malpractice claims against US charity Operation Smile, the US medical services charity that sends surgeons overseas to repair children’s cleft palates and lips in developing countries, has promised to investigate allegations of poor work practices. *The New York Times* newspaper reported on Nov 24 that in the past year four children have died during or after surgery. Operation Smile officials have admitted that 12 children have died since 1982 from a procedure in which deaths are rare.

Artificial reproduction report The UK Human Fertilisation and Embryology Authority’s (HFEA) annual report released on Nov 25 notes that the number of treatments with intracytoplasmic sperm injection (ICSI) has increased by 40% since last year. HFEA attributes the fall in the number of patients using donor sperm to the rise in popularity of ICSI.

UK bans asbestos The supply, use, or import of white asbestos (chrysotile) was banned in the UK on Nov 24. The Asbestos Regulations 1999 implemented the ban 5 years ahead of the deadline of a European Directive. However, the law does not require people to remove existing asbestos in buildings as this could create more risks to health (see *Lancet* 1999; 353: 383).

Organophosphates “not harmful” According to a report published by the UK Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment on Nov 26, there is insufficient evidence that organophosphate sheep dip has caused serious health problems for people whose exposure has been low. But the Committee acknowledged that there is an urgent need for more research in this area.

Spain examines eating disorders On Nov 25, Spain’s Education and Culture Commission published the results of an investigation into the determining factors behind eating disorders. The Commission wants the government to organise a “social pact” against anorexia nervosa and bulimia. This effort should be coordinated by the ministries of education and health with help from local regions, the report says.