Alcohol—pushing the limits

The British government's pre-Christmas announcement of higher limits for sensible drinking came in for widespread criticism, notably from the BMA, which described the move as "irresponsible and badly timed."

The move follows a report released by the royal colleges in Britain last year advising that guidelines should remain unchanged. The World Health Organisation is also committed to reducing the world's alcohol consumption.

Stephen Dorrell, Britain's health secretary, denied that the new guidelines were a licence to drink more. He said that they treated people like adults by advising them of new research showing the protective effect of alcohol on heart disease. He said: "Our purpose is to ensure that people are properly informed about the use of alcohol—in the light of the latest scientific evidence. But if you are working with dangerous machinery or driving a car then the safest level of alcohol is none."

Guidelines on sensible drinking limits vary from country to country, if they exist at all.

International guidelines

In Britain the old guidelines advised that men drinking less than 21 units a week and women drinking less than 14 were unlikely to damage their health. A unit is 8 g of alcohol, roughly the amount in half a pint (0.28 l) of beer or cider, or a standard glass of wine, sherry, or spirits. The revised guidelines say that regular consumption of between 3 and 4 units a day for men and between 2 and 3 units for women will "not accrue significant health risk."

In announcing the new limits, the British government emphasised research showing that the beneficial effects of alcohol on heart disease are seen only in postmenopausal women and in men over 40 and can be gained from drinking between only 1 and 2 units a day. But its report does recommend to teetotal people in these age groups that they might want to consider the advantages of light drinking. Pregnant women are advised that drinking 1 or 2 units once or twice a week is unlikely to affect fetal development.

Average weekly intakes of alcohol in Britain, according to the campaign group Alcohol Concern, are 16 units for men and just over 5 units for women. Up to a third of men and one in 10 women already drink more than the former safe amounts of less than 21 and 14 units a week.

On the roads in Britain there were 1170 fatal traffic accidents in 1979 associated with

British police have to find a pretext to breath test a motorist

alcohol concentrations above the legal limit of 80 mg of alcohol per 100 ml of blood (17.4 mmol/l). In 1994 the number was 510—out of a total number of 3650 deaths on the road.

British police officers have no powers to carry out random breath testing on motorists, although they are known to stop suspects on such pretexts as "a faulty rear light." Lobbyists such as Alcohol Concern would like to see random breath testing to deter the hard core of predominantly middle aged male drivers who, it says, still drink and drive.

Both Alcohol Concern and the BMA want the legal blood concentration for drink-driving offences to be reduced to 50 mg/100 ml (10.9 mmol/l). Motorists found guilty of drinking and driving can be sentenced to up to six months in prison, fined up to £5000 (\$7500), and banned from driving for a year. A maximum sentence of 10 years can be imposed on a motorist found guilty of killing someone while under the influence of either illegal drugs or alcohol.

In the United States guidelines for safe drinking are produced jointly by the Department of Agriculture and the Health and Human Services Administration. These guidelines acknowledge alcohol as both a food and a drug. They also outline the possible health hazards of alcohol and emphasise that the drug should be consumed "in moderation." This is defined as no more than one drink a day for women and as no more than two drinks a day for men. A drink is defined as 340 ml of beer, 42.6 ml of spirits, or 132 ml of wine. The guidelines also recommend that people under 21, pregnant women, alcoholics, and anyone planning to drive or perform skilled tasks should refrain from drinking any alcohol. They also encourage drinking alcohol with meals rather than on its own to slow its absorption into the body.

Drivers in the United States are considered to be legally drunk if their blood alcohol concentration reaches 100 mg/100 ml. A driver with a blood alcohol concentration of 80 mg/100 ml can be convicted of driving under the influence of drink. Penalties for

Headlines

Italy tightens up on tobacco restrictions: Italy has banned smoking in many public places, including schools. Restaurants and cafes will not be affected by the ban, which carries a fine for anyone breaking the new law.

Former GMC president receives life peerage: The former president of the General Medical Council, Sir Robert Kilpatrick, has received a life peerage in the new year's honours.

New medical centre for Gaza: Israel and Palestine are planning a joint medical centre to be built on the border between Israel and the Gaza strip. The centre will offer advanced health services to local residents and to people in the Middle East in general.

US ends prescribing by psychologists: The US Congress has voted to end an experimental programme run by the Department of Defense that trained psychologists to prescribe psychotropic drugs to military personnel and their families. The programme was opposed by the American Medical and American Psychiatric Associations.

Drug misuse in US teenagers rises again: The number of American teenagers using illicit drugs increased last year for the fourth consecutive year, according to a survey from the University of Michigan. The researchers found that fewer young people were even worried about the dangers of substance misuse.

More data needed on clinical audit: The National Audit Office recommends that the NHS Executive should assure itself that NHS trusts are carrying out effective clinical audit and consider commissioning research to devise a method that will enable purchasers and providers to assess the extent of clinical audit activity.

British health department releases new statistics on HIV prevalence: New figures from the Department of Health show that 1 in 9 homosexual or bisexual men attending clinics in London for the treatment of sexually transmitted diseases in 1994 were infected with HIV, compared with 1 in 30 outside London. The figures—the results of unlinked anonymous HIV surveys—also show that prevalence among male injecting drug users in England and Wales declined during 1994.

drink-driving vary between states. Most differentiate between first time offenders and others. Repeat offenders may have their driving licences revoked and tend to have to serve longer prison sentences.

At Christmas in 1994, 181 of the 338 road traffic deaths in the United States were attributed to alcohol. Overall in 1994, an estimated 16 589 people died in alcohol related traffic accidents, which amounts to 40% of the total of 40 676 road traffic deaths. This figure represents, however, a 30% reduction on statistics for 1984. Car accidents associated with alcohol are also the leading cause of death in 15-24 year olds.

In Germany there are no government or official recommendations on healthy drinking limits. Neither are there any restrictions on opening or closing times for public houses, bars, and restaurants. Such restrictions can be imposed by individual local authorities, but when they are they tend not to be aimed at influencing alcohol consumption. Alcohol is freely available in many grocery stores and petrol stations, although traders are not allowed to sell alcoholic drinks to those under 18. Average alcohol consumption for each person in Germany in 1994 was 139.6 l of beer, 17.5 l of wine, 5 l of champagne, and 6.7 l of spirits.

Germany imposes a blood alcohol limit of 80 mg/100 ml on its drivers, who face a fine of DM500 (£200; \$350) for a first offence if they are found to have a higher concentration. Their driving licence will also be confiscated for one month. Drivers with more than 110 mg of alcohol per 100 ml of blood are considered unfit to drive and their driving licence will be withdrawn for at least a year. In addition, they face imprisonment for up to a year or a hefty fine. Drink-drivers who cause accidents can face up to five years in jail and the prospect of losing their licence for ever.

In Germany in 1994 people were injured in 392 754 traffic accidents, alcohol being implicated in 10% of these. In the same period 9814 people were killed in traffic accidents, with alcohol being implicated in 19% of these.

In the Netherlands the government

decided in 1986 not to advocate a safe limit on alcohol consumption but to repeat the World Health Organisation's message that less is better. Dutch health promotion literature has guidelines of "two or three units a few times a week." The literature recommends no alcohol consumption for people with alcohol problems, for pregnant women or women wanting to conceive, or for anyone before driving, working, or playing sport.

Sandra van Ginneken from the Dutch ministry of health alcohol education project believes that a safe drinking limit does more harm than good. She argues that there is more chance that light drinkers will increase consumption than that heavy drinkers will cut down. In addition, the government says that a weekly safe limit overlooks the consequences of binge drinking, and a daily safe level might encourage daily drinking among those who drink less often than that.

Dutch drivers face penalties for driving with more than 50 mg of alcohol per 100 ml of blood. Fines range from £200 to £775 (\$300-1162). Those who drive with more than 250 mg of alcohol per 100 ml of blood face a two week prison sentence and a one year ban on driving. There is also a six month ban on driving for anyone with more than 150 mg of alcohol per 100 ml of blood. All sentences relate to first time offences and accidents in which no one has been killed.

In the Netherlands in 1994, 3636 (7.4%) of the 49 135 traffic accidents in which people were injured were alcohol related. Of the 1298 accidents in which people were killed, 102 (7.8%) were related to alcohol.

In France there are no guidelines on safe drinking, except for a general warning against excessive alcohol consumption. In recent years a motto has become widely known: "One glass is OK. Two glasses is too much. Three glasses spells trouble." Whether the motto has had an impact is not clear, but total alcohol consumption in France has decreased steadily since the early 1970s. Average annual consumption of alcohol by adults dropped from 170 bottles of wine in 1989 to 128 bottles in 1990. Large regional differences mean that people in the north west of France drink about twice as much as those living in the south east.

Drivers in France face a tougher new year—the maximum permissible blood alcohol concentration was recently lowered from 80 mg to 50 mg per 100 ml. Drinking is believed to be responsible for about one third of all traffic deaths (3000) in France. Police are authorised to make spot checks, and anyone found to have over the 50 mg limit but under 80 mg/100 ml loses three of the 12 points on his or her driving licence. There may also be a fine. Drivers with a concentration above 80 mg/100 ml face suspension of their driving licence, a hefty fine, and a possible two year prison sentence. Repeat offenders can face even longer jail terms.

In Australia there is no federal government policy, but guidelines have been issued by the advisory body, the National Health and Medical Research Council. The council recommends that daily alcohol consump-

There is no enforced "closing time" in Germany

New battle looms for France over health reforms

The new year heralds another battle for French prime minister Alain Juppé as the country begins its recovery from three weeks of strikes by transport workers that ended just before Christmas. The prime minister backed down on his proposal to align the retirement age of civil servants with that of other workers. But he stood firm on his proposals to reorganise the nation's health care and insurance system. The proposals include control of health care expenditure, supervision of the health budget by parliament, and an additional, temporary tax of 0.5% on nearly all incomes to pay for the social security scheme's accumulated debt.

On 17 December doctors marched through the streets of Paris in protest against the proposals. A few days later major doctors' unions, which had previously disagreed in their views on Juppé's plan, decided to unite against proposals that doctors be penalised if the country's medical expenditures exceed a maximum to be set by parliament.

The doctors also want negotiations on other proposed measures, such as compulsory continued medical education, contribution by doctors to a fund to cover nationwide computerisation of their records, and readjustments in doctors' own assessments to health insurance for their families.

"There are negotiable elements in the government's plan, but there are some elements not acceptable to doctors," said Dr Richard Bouton, president of the general practitioners' union, MG-France.

Trade unions object to the social security reforms for other reasons, arguing that new assessments will penalise poor people. Last week they found support from Dr Bernard Kouchner, founder of the aid agency Médecins sans Frontières and a former minister of health under the Socialist government. On 28 December Dr Kouchner wrote in the weekly *Nouvel Observateur* supporting Juppé's proposal for parliamentary supervision of health expenditures but suggesting that the deficit be paid for through tax increases on income and capital, which would spare low income households.

The French medical association has issued a statement that the freedom to prescribe "remains an essential condition of the professional independence of the doctor" and has objected to the proposal of collective sanctions against doctors if health expenditures exceed the prescribed limits.

The battle of the social security reforms is evidently not over. Nevertheless, the first step to enforce Juppé's plan came at the end of last year when the Council of Ministers adopted a proposal to revise the constitution to authorise parliament to issue annual guidelines limiting health care expenditures. If the decree instituting a special tax of 0.5% on nearly all revenues is adopted in the near future it may well trigger more social unrest.—ALEXANDER DOROZYNSKI, *medical journalist, Paris*

tion should not exceed four standard drinks for men and two for women, a standard drink being 10 g. It says four to six drinks should be considered hazardous for men and two to four drinks for women. It warns against binge drinking, advocates two alcohol free days each week, and says that abstinence is desirable in pregnancy. Drivers in Australia faced several measures in the early 1980s that made drink-driving laws tougher—random breath testing was introduced and has since led to a substantial cut in the number of road accidents related to alcohol. And the legal limit was changed from 80 mg to 50 mg of alcohol per 100 ml of blood. Although this limit has now been adopted by all states, problems remain in trying to police the vast outback areas in the west and north of Australia. Penalties for drink-driving vary between states, but in New South Wales, which is a typical jurisdiction, penalties vary for three ranges of concentrations: 50-79 mg, 80-150 mg, and above 150 mg. The low range attracts a fine of up to A\$500 (£240) and three months' disqualification from driving. A second offence in the high range means an on the spot ban for up to five years, fines of up to A\$2500 (£1200), and a year in jail.

There were 1282 road deaths in New South Wales in 1982, before random breath testing. In 1993 that figure dropped to 581, with half the reduction being credited to the random breath tests. Also, although alcohol was a factor in 40% of fatal road accidents in 1982, it is a factor in 24% at present.

The drinks trade lobby

The new British guidelines were developed by an interdepartmental government group from evidence submitted by interested parties, of which 22 were medical and nine were from the drinks industry. The *Observer* newspaper claimed that only the drinks industry had advised a relaxing of the previous guidelines. The Portman Group, funded by eight major drink companies, is considered a powerful lobbying force for the industry.

The drinks trade also has a powerful voice in France, where it finances the French Institute for Scientific Research into Drinks, which carries out surveys every five years and contributes to various studies. The drinks industry in Australia also has a lot of muscle, although brewers and the wine industry were recently at loggerheads over wine tax. In Germany the industry has no drinking limits to oppose, but it often deplors the existence of local beverage taxes, which vary between different local authorities. And in the Netherlands, the drinks industry formed the Foundation for Responsible Alcohol Use in 1982, arguing that misuse of its products was bad advertising and needed to be prevented.

An editorial on sensible drinking is on p 1. —LUISA DILLNER, *Britain*; DEBORAH JOSEFSON, *United States*; HELMUT KARCHER, *Germany*; TONY SHELTON, *Netherlands*; ALEXANDER DOROZYNSKI, *France*; and CHRISTOPHER ZINN, *Australia*

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Ombudsman plans to locate blame in complaints cases

When the British health ombudsman begins investigating complaints about the clinical judgment of NHS doctors this year he intends to consider questions of fault. This is in contrast with the trend in litigation, where most medical negligence claims are settled out of court with no admission of fault or explanation.

In a paper describing his new powers the ombudsman, Mr William Reid, states that legal proceedings, even when damages are paid, provide no assurance to the complainant that any action has been taken to prevent recurrence of the matter complained about. His experience is that securing such action is often a matter of great concern to complainants.

Mr Reid says that it is a "natural and proper concern" of patients to know whether anyone was at fault, and he says that his investigations will address that issue. But he also recognises that clinical decisions responsibly taken can occasionally lead to unintended and harmful consequences for patients, and in his conclusions he will be seeking to be fair to all concerned.

"Without seeking in any way to encourage or promote a 'blame culture' it is the ombudsman's responsibility to criticise where in his view the patient does not receive the service he is reasonably entitled to expect," the paper states.

In 20 pages Mr Reid describes how he envisages his wider powers under the Health Service Commissioners (Amendment) Bill now before parliament (9 December 1995, p 1526). He will be empowered to hear complaints against family doctors as well as about the exercise of clinical judgment. Advice on medical, nursing, and midwifery matters will be provided by professional advisers both on the ombudsman's staff and appointed case by case. The ombudsman and his advisers will assess whether the actions complained of were based on "a reasonable and responsible exercise of clinical judgment of a standard which the patient could be reasonably entitled to expect in the circumstances in question."

They will also consider whether acceptable standards of delegation, accountability, supervision, and support had been shown. The final decision will be the responsibility of the ombudsman.

For his new jurisdiction on family health services Mr Reid has still to decide whether to identify providers, as he already does with health authorities and hospitals. He says that he is disposed to maintain consistency, which would mean that "a measure of identification would emerge."—JOHN WARDEN, *parliamentary correspondent, BMJ*

Comments on the paper, *Responsibilities of the Health Service Commissioner*, should be made to Clive Wilson, Director, Office of the Health Service Commissioner, Millbank Tower, Millbank, London SW1 4QP.

Frozen embryos could be stored for up to 10 years

Britain poised to extend storage of frozen embryos

The maximum length of time for storing human embryos for use in treatment with in vitro fertilisation is to be increased from five years to 10 years if new recommendations by the Human Fertilisation and Embryology Authority (HFEA) are accepted by Britain's parliament early this year. Whatever the storage period, it will not be extended after the woman reaches the age of 55.

Since 1 August 1991 any clinician wishing to offer in vitro fertilisation to couples experiencing difficulty conceiving has been obliged to obtain a licence from the HFEA. All research involving the creation or use of human embryos, infertility treatments involving use of in vitro fertilisation or the use of donated eggs or sperm, and the storage of eggs, sperm, or embryos were included.

The first pregnancy from the transfer of a frozen-thawed embryo was reported in Australia in 1983, and the first live birth took place in the same year in the Netherlands. Since then several thousand children have been born after transfer of frozen-thawed embryos, and the technique is now established medical practice. Using frozen-thawed embryos in consecutive treatment cycles prevents the need for repeated drug stimulation and egg retrieval. It is not currently possible to store unfertilised eggs for future treatment.

Parliament laid down the five year maximum storage period in the Human Fertilisation and Embryo Act in 1990. However, according to Carol Perkins, policy manager at the HFEA, it soon became clear that "this was an arbitrary figure chosen more

for caution" than for the reality of medical practice. Many women failed to conceive during the five years and needed longer treatment periods.

As 31 July 1996 approached, so did the maximum storage date of an estimated 9000 out of an estimated UK national total of 52 000 frozen embryos. The authority became aware of growing concern in licensed clinics and among patients at the prospect of leaving large numbers of embryos to perish that might be used for treatment.

The authority now recommends that, while the normal storage period for embryos should remain at five years, for medical or social reasons there should be an option at the end of that period to extend storage for up to 10 years, with consent specifically renewed by the couple. In exceptional circumstances, such as cancer in a young woman, this period may be extended further. "There is benefit all round from the proposed changes," Carol Perkins said. "They leave the patient in control, offer further protection to the embryo within a legal framework, and are realistic in terms of medical practice."

Peter Brinsden, medical director of Bourn Hall Clinic near Cambridge, welcomed the extended storage period but said that he had reservations about its practical outcome. "This extension is a great help but only postpones the problem. It would have been preferable to extend storage to a woman's natural reproductive life—say to 50 years old. At the end of this statutory storage period we will be faced with a similar prospect of embryos created especially for couples which we have, by law, to throw away. Some patients will not accept this, and so while the problem is less acute it has not gone away."—ALISON BOULTON, *freelance journalist, London*

US journals veto tobacco funded research

The American Thoracic Society, the scientific arm of the American Lung Association, has announced that it will no longer publish research funded by tobacco companies in its two scientific journals. The ban was first proposed two years ago by Dr Alfred Munzer, past president of the American Lung Association. The two journals are the *American Journal of Respiratory and Critical Care* and the *American Journal of Respiratory Cell and Molecular Biology*.

Dr Munzer said: "In my mind, I've always felt that tobacco money is an ill gotten gain. There is only a hair width of difference between the tobacco industry and the drug cartels." Dr Munzer said that past editorial policy had always been full disclosure of funding in the belief that the peer review process would weed out biased research. But this is no longer considered viable given the American Lung Association's mission to promulgate knowledge about lung disease and to "counter the tobacco industry's influence on children," he said.

James Glenn, chairman and president of the Council for Tobacco Research, an organisation that channels funds from tobacco companies to researchers, said that he doubted whether other journals would follow suit. Last year the council distributed \$19.5m (£13m) to investigators at major research institutes. "We're trying to unravel the disease process influenced by smoking, but we don't direct research, and we don't solicit applications," said Glenn.

The National Cancer Institute and the American Cancer Society, however, refute that claim. Dr Marc Manley, chief of the council's public health applications branch, said: "When there are bodies [in the tobacco industry] who won't admit that smoking causes cancer, it's hard to come to any other conclusion than that they're trying to manipulate science for non-scientific purposes."

Steven Dickinson, vice president for public affairs at the American Cancer Society, described research funded by tobacco companies as biased and said: "It doesn't pass the test of our peer review process." No similar policy, however, is currently planned for the society's three journals.

In an editorial accompanying the American Thoracic Society's announcement a year ago that it was considering such a proposal, H Tristram Engelhardt Jr, from the Center for Ethics, Medicine and Public Issues at Baylor College of Medicine, questioned how far journals should go to limit a researcher's funding. "How ideologically pure do the members of ATS and ALA have to be? May one smoke and publish?" he wrote.

Dr Richard Glass, deputy editor of *JAMA* (the journal of the American Medical Association) said: "We don't agree to consider articles based on their funding source; we accept articles based on their scientific merit." In an editorial in the 19 July issue of *JAMA*, however, editors suggested that med-

ical schools and investigators should refuse funding from tobacco companies to avoid seeming to give them credibility.

"The threshold is higher for scientific validity if we perceive [that the research] would have a commercial purpose," said Dr Marcia Angell, executive editor of the *New England Journal of Medicine*. The journal accepts research funded by industry but does require full disclosure of funding sources. It has not considered banning research funded by any particular industry, including tobacco companies. "It's never come up, but it's an interesting question," said Angell.—TERRI RUTTER, medical writer, Boston

Gynaecologist acquitted in hysterectomy case

A British gynaecologist has been acquitted of performing an illegal abortion after he went ahead with a hysterectomy while suspecting the patient was pregnant.

Reginald Dixon, a consultant obstetrician and gynaecologist at King's Mill Hospital, Sutton-in-Ashfield, Nottinghamshire, was found not guilty unanimously by a jury at Nottingham Crown Court on 21 December. He had been charged under section 58 of the 1861 Offences against the Person Act, introduced to combat backstreet abortionists, which carries a maximum sentence of life imprisonment.

Mr Dixon was carrying out a hysterectomy on Barbara Whiten, then aged 35, in March 1993, when he discovered what he

suspected was a fetus. Mrs Whiten had been told that endometriosis had left her infertile and had not been given a pregnancy test.

Mr Dixon stopped the operation for 30 minutes while he tried unsuccessfully to locate Mrs Whiten's husband then continued. Ten days later a pathologist's report showed a normal 11 week male fetus and no sign of endometriosis—the reason for the operation.

Mrs Whiten, who was childless with two stepsons, told the court that she and her husband were "devastated" when Mr Dixon told her of the suspected pregnancy the day after the operation. She added: "If he had come round the curtain and hit me with a sledgehammer, it would have had less effect."

Mr Dixon accepted in court that with hindsight he had made the wrong decision. In a letter to Mrs Whiten's general practitioner after the pregnancy was confirmed he wrote: "I am left wondering whether I would have been better to have closed her abdomen and arranged a scan."

He told the court that he was influenced by Mrs Whiten's medical notes, which showed that she suffered from depression and had twice taken an overdose. But he admitted that he had not considered the effect of the abortion on her mental health.

His defence to the charge was that he had acted under the emergency provisions of the 1967 Abortion Act, which allow a doctor to terminate a pregnancy without the patient's consent if her physical or mental health is thought to be endangered by the pregnancy continuing.

As a result of Mrs Whiten's case, all women aged under 50 at the hospital are now routinely tested for pregnancy before major gynaecological surgery.

Mr Dixon, a fellow of the Royal College of

Mr Reginald Dixon and his wife after the verdict

Obstetricians and Gynaecologists and a consultant since 1979, was supported by patients and hospital management and was not suspended from work. After the verdict he said: "It is a great relief to see the end of three years of stress for me, my family, and, of course, for Mrs Whiten."

The Whitens' solicitor, Brian Talbot, said that they were considering bringing a civil claim for compensation.—CLARE DYER, *legal correspondent, BMJ*

Researchers face patent race for breast cancer gene

A team of Anglo-American researchers who recently announced their discovery of a second gene that causes breast cancer now seems likely to face a challenge from a rival American project. Myriad Genetics, based in Salt Lake City, Utah, claims to have beaten the Institute of Cancer Research in a race to isolate the gene BRCA2 and has filed an application for a US patent.

The British team, led by Dr Mike Stratton of the Institute of Cancer Research, has also filed a preliminary application for a European patent in the name of CRC Technology, the institute's technology transfer company. Myriad Genetics, meanwhile, has announced that it will put the molecular sequence of BRCA2 in the US government's GenBank genetic data library, where it will be open to public scrutiny. It is not yet certain that the two sequences are in fact identical.

A spokesman for Myriad Genetics said that the company has had the whole sequence for some time. "You could say that the British announcement forced our hand. Obviously, as a publicly traded company, Myriad has to keep investors informed." He confirmed that the two groups were in communication with each other but said that no decisions had yet been reached on what to do.

BRCA2 is present in about 30% of the 1000 or so families in Britain that are genetically predisposed to develop breast cancer. BRCA1, which was discovered last year by the founders of Myriad Genetics, is present in a further 50% of such families. A third gene may be responsible for the remaining cases.

Although 95% of breast cancers have not yet been linked to genetic factors, researchers hope that the understanding of genetic traits that lead to inherited breast cancer may help them to find treatments for the more common form of the disease.

Professor Bruce Ponder of the CRC Human Cancer Genetics Research Group at Addenbrooke's Hospital, Cambridge, said that, although the exact function of BRCA2 was still unknown, the gene seemed to produce a protein, not yet identified, which checks excessive cell multiplication. Without this protein, tumours were likely to develop.

Dr Stratton and his colleagues studied more than 40 families with a history of early

breast cancers. The evidence suggests that BRCA2 is the responsible gene in the families in which males are also at risk from breast cancer. About 100 men a year die in the UK from the disease. BRCA1 has been linked to increased risk of ovarian cancer.

The prize for the company that patents BRCA2 will be the right to devise a diagnostic test for carriers. Myriad Genetics has already announced plans to release a BRCA1 test in the first half of this year and intends to create a similar test for BRCA2.

Several healthy women around the world have already been identified as BRCA1 carriers by blood tests, leaving them to decide whether to have their breasts removed prophylactically. Tests will also be able to determine whether an unborn fetus is a carrier, raising the question of whether to abort a potentially healthy baby.—OWEN DYER, *freelance journalist, London*

Russia fights flu outbreak

Moscow's worst flu epidemic since records began 150 years ago is moving east. Hospitals in the Russian capital have been besieged with patients with flu during the past month, and doctors estimate that before the epidemic has finally run its course more than one million Muscovites (10% of the population) will have had the illness.

Other cities across the Urals and to the

east of the country, which spans 11 time zones, are making preparations for the arrival of the Moscow flu during the coming weeks. The city of Gorno-Allai on the Chinese Mongolian border has already registered thousands of cases of flu, and officials there are banning large public gatherings and forcing employees at hospitals and schools to wear face masks to stop the spread of the germs. On the eastern coast medical authorities in Vladivostok have placed all schools in quarantine before the new year break to contain the outbreak.

Children have been the worst hit. In Moscow during the first weeks of the epidemic up to 70% of the cases were among children aged under 14 years, which meant that in some cases entire classes were absent from school.

Doctors in Moscow—where 120 000 new cases were reported in a single week—say that it is the worst outbreak that they can remember.

At the International Medical Clinic Dr Eric Downing said that there was "little sign of the influenza cases tailing off yet" but added that by mid-January the illness was likely to have run its course. "This is because this particular flu is so contagious that most people caught it immediately."

Some cities and towns have suffered even more severely than Moscow. The regions around St Petersburg, Tver, and Bryansk have been hit by outbreaks of flu which are reported to have spread to more than half of all the residents. Nearly a million cases have been reported in Ukraine.—SUE JAMESON, *freelance journalist, Moscow*

Many of Moscow's homeless are not fit enough to fight off flu

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