



A woman smokes a cigarette outside a pub in County Louth, Ireland, 29 March 2004, as the country becomes the first in Europe to ban smoking in the workplace, including pubs and restaurants.

It is an epidemic that is expanding rapidly. Barring more effective intervention, the total number of tobacco users is expected to rise from the current 1.3 billion to 1.7 billion by 2025. Tobacco use now kills 4.9 million people each year, with the heaviest toll in developing countries, where 7 out of 10 smoking-related deaths occur.

Experience suggests the measure taken by Ireland could turn out to be the simplest and most effective way to discourage smoking and encourage cessation. "In enacting a workplace ban, you send a message: 'We want you to live in a healthy environment.' That message creates a supportive atmosphere for smokers to quit, especially if you offer them help," da Costa e Silva said.

Ireland's Government prepared for the ban by concurrently bolstering smoking cessation programmes, Coghlan said. "We now have a national hotline for smokers wanting to quit, and many of our pharmacists have completed a training program to become special advisors. There are big posters everywhere alerting people about how to get help, and they are responding."

A workplace ban is a major step toward protecting the public against passive smoking, which puts adults at risk of lung cancer and children at risk

of respiratory infections and asthma, according to the US Environmental Protection Agency.

Research also has shown that reduced exposure to passive smoking decreases acute cardiac events. In one striking study, presented at an American College of Cardiology conference in March, researchers reported a 60% drop in heart attack admissions at local hospitals during a six-month temporary smoking ban in public buildings in Helena, Montana, a city with a population of 65 000 in western US.

Ireland's choice of a workplace ban was inspired, said Haik Nicogosian, Regional Advisor for Europe at WHO, because it shifts the public's focus away from the right of people to do as they please in restaurants and bars, which has been at the centre of the debate. "Now the focus is on the rights of workers, and not the rights of customers, to be in a smoke-free environment. It is a more winning approach," he said.

To date only a few countries have experimented seriously with smoking bans. The US has piecemeal local regulations on indoor smoking, in New York City — a pioneer in anti-smoking legislation — and Boston, for example. A number of countries — including Egypt, the Republic of Korea, the United

Republic of Tanzania, Thailand and Uganda — forbid smoking in specific locations such as educational institutions and hospitals.

The question now is whether Ireland's move will set off a wave of comprehensive anti-smoking legislation. "Norway has already passed laws that will go into effect in July, and Sweden and Malta have plans to institute similar bans. In addition, the UK has indicated its intention to enact a ban of its own," said Nicogosian.

In the developing world, total smoking bans are unlikely to appear any time soon, said Carmen Audera, a technical officer at WHO's Tobacco-Free Initiative. "There is a simple reason. Smoking arrived in developing countries relatively recently, and they have not yet begun to experience the mortality that starts three decades after the onset of an epidemic. That is why they are moving more slowly," she said. ■

Judith Mandelbaum-Schmid, *Zurich*

Monkey malaria could represent a new human strain

Monkey malaria may be more widespread among humans than previously

thought and could represent a new strain of the disease more dangerous to humans, says a new study published in the UK-based medical journal, the *Lancet* (2004;363:1017-24).

The study's authors, Professor Balbir Singh from the Faculty of Medicine and Health Sciences at the Universiti Malaysia Sarawak and colleagues, found that the monkey malaria parasite, *Plasmodium knowlesi*, accounted for 58% of malaria cases in Kapit division in Sarawak, Malaysia. These cases had previously been misidentified as *Plasmodium malariae*, one of the four human parasites.

Blood samples taken between March 2000 and November 2002 from 208 patients with what was thought to be *P. malariae* were tested using genetic sequencing and 120 of these turned out to be *P. knowlesi*. The misdiagnosis is thought to have occurred due to similarities in appearance on thick blood-films between the two strains and the fact that laboratory technicians are only trained to recognize the four species of human parasites, *Plasmodium falciparum*, *Plasmodium vivax*, *Plasmodium ovale* and *P. malariae*.

Nick White, Professor of Tropical Medicine at Mahidol University in Thailand and Oxford University in England, said in a commentary accompanying the study that repeated misdiagnosis of monkey malaria could explain occasional reports of malaria in people exploring or travelling through uninhabited jungle areas or nature reserves.

"There have been rare reports of natural human infections with monkey parasites but nothing on the scale reported by Balbir Singh and colleagues," said White in the commentary.

Bernard Nahlen, Senior Scientific Adviser at WHO's Roll Back Malaria programme in Geneva, added that there are many non-human strains of malaria, which can infect birds, reptiles and other mammals.

"The finding here that a monkey-strain has been found frequently in humans is the interesting point," said Nahlen.

The study raises the question of whether monkey malaria was already or would become capable of human to human transmission.

Whereas *P. malariae* multiplies every three days in the blood and infections are never severe, *P. knowlesi* multiplies daily and is potentially dangerous.

However, John Barnwell, Chief of the Research and Development Laboratories Unit of the Malaria Branch Division

of Parasitic Diseases at the US Centers for Disease Control and Prevention, pointed out that because antimalarials have not been used on monkeys, their parasites are still drug-sensitive and are easily treated with chloroquine. What is important is the potential for the emergence of a new human disease, said Barnwell.

Scientists have established that human-to-human transmission of monkey malaria is possible under laboratory conditions but so far have not found cases of natural transmission.

"The very high numbers of infections in this small area and close timescale could set up the potential to have natural human-to-human transmission happening now or in the near future," Barnwell said, referring to the study.

"This is how new diseases emerge all the time and the potential to establish a new human malaria is there," said Barnwell, adding that genetic data suggests that *P. vivax*, the second major human malaria strain which first infected humans 40 000 to 60 000 years ago in south-east Asia, was derived from the local monkey malaria populations.

Barnwell said it would be interesting to monitor whether other species of monkey malaria such as *Plasmodium cynomolgi* which are present in monkeys in the Sarawak region of Borneo could be infecting humans too.

Dr Kevin Palmer, Regional Malaria Adviser at WHO's Regional Office for South-East Asia in Manila, agreed that more research was needed to establish the full implications of these findings.

"At this point it is clearly not a public health problem but if it turns out that *P. knowlesi* has or is in the process of adapting to human transmission, we may be facing a future problem ... a fifth species of human malaria," said Palmer. ■

Fiona Fleck, *Geneva*

Microbicides preventing HIV infection could be available by 2010

First generation topical microbicides aimed at preventing HIV infection in women could be available as early as 2010, researchers told participants at the Microbicides Conference 2004 held in London on 28–31 March.

About 60 of these drugs in the form of creams, gels, sponges or pessaries, designed to prevent the sexual spread of HIV, are currently under development.

Of those, 18 are at clinical trial stage including six that are due to enter large-scale phase III trials in the second half of this year. Topical microbicides work by forming a protective coating around mucosal cells that either kills or inactivates HIV reducing the risk of vaginal or anal transmission.

"Even if the products are as low as 40% effective — which means they would bring about a reduction of 40% in the HIV transmission rate — they could still have a major impact on public health," said Professor Janet Darbyshire of the UK's Medical Research Council and co-chair at the conference. "However we hope that they will be considerably more effective — certainly some of the 'second generation' products in the pipeline look very promising."

Research from the London School of Hygiene and Tropical Medicine showed recently that some 2.5 million new cases of HIV infection globally could be prevented in just three years even if the microbicide only brought about a reduction of 60% in the HIV transmission rate (*BMJ* 2004;328:305).

In the absence of an effective vaccine, increasing attention is being paid to the development of microbicides. According to a recent commentary in the UK-based medical journal, the *Lancet* (2004;363:1002-3), in many developing countries, AIDS is taking a disproportionate toll on women. Biologically, women may be up to four times more vulnerable to HIV infection. The need for a discreet female-controlled method for the prevention of HIV-infection is further affirmed by the lack of economic and social power preventing many women from negotiating safe sex.

"The development of a safe, effective microbicide would be the biggest innovation in women's reproductive health since the introduction of the [contraceptive] pill," said Lore Heise, Director of the Global Campaign for Microbicides.

Stephen Lewis, the United Nations envoy on AIDS, told the conference that the numbers of infected women had grown exponentially, so that virtually half the infections in the world were amongst women. In Africa the rate was 58%, rising to 67% between the ages of 15 and 24, he said.

"This is a cataclysm, plain and simple. We are decapulating parts of the continent of its women," Lewis said.

Like vaccines which are also at clinical trial stage, microbicides may