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社会热点系列  
Need to Know Series

艾滋病

# HIV and AIDS

Sean Connolly

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中国青年出版社  
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# Introduction

One of the most alarming medical problems ever faced is now striking fear into most parts of the world. This deadly enemy is HIV, an infection that leads to the wasting condition known as AIDS. It has grown from being an unknown condition to being a 'public enemy' in a very short period of time.

## Deadly arrival

Since it was first identified about twenty years ago, the HIV **virus** has been linked to a series of medical problems. These eventually weaken the body and leave it defenceless against infection. With the body's natural defences destroyed, infections that would normally be fought off – including **pneumonia**, **tuberculosis** and even flu – can become killers.

Sometimes people don't even notice the initial infection – caused by the HIV virus – that leads to this weakened state.

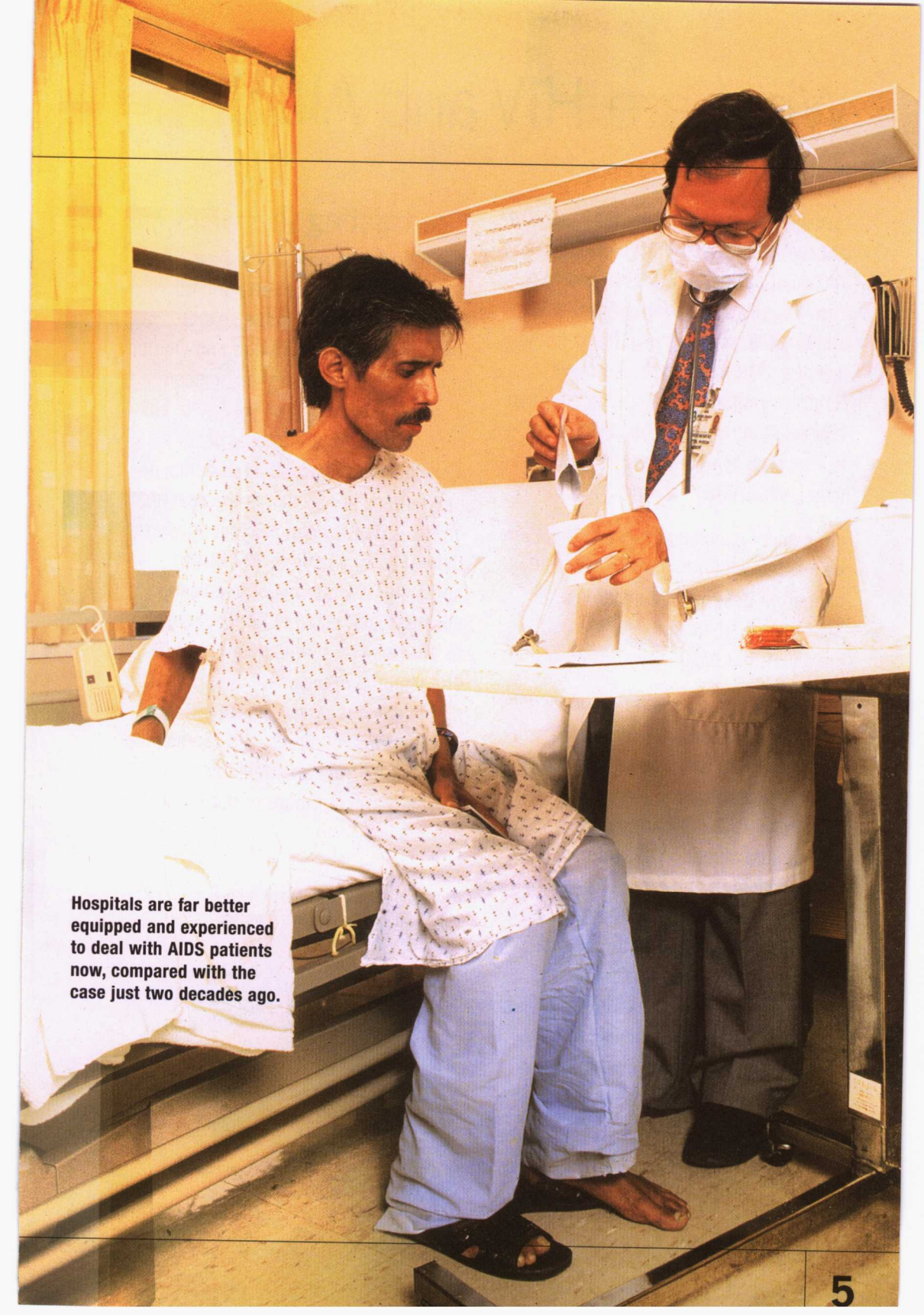
Easily passed on, HIV can sweep across entire regions, infecting large proportions of the population. In some of the worst-affected areas, nearly two thirds of the new infections occur among people aged 16–25. Many of these young people will soon lose the ability to work – and they might well die

– within a decade. These are not 'scare stories'. Parts of Africa are already experiencing the widespread infection that scientists had predicted less than a decade ago. This problem will extend far beyond health: with no one well enough – or even alive – to perform essential jobs, entire countries could face the virtual disintegration of their economies.

## The response

The news is not, or perhaps need not be, all bad. In the two decades of medical research into HIV and AIDS, scientists have isolated the virus that causes the infection and have studied it closely. Based on their findings, public health officials and AIDS charities have been able to send out clear signals about how the infection is passed on. More importantly they can show how it can be prevented from being **transmitted**. The enemy in their fight is not just the deadly combination of HIV and AIDS. It is the stubbornness of many people who will not understand the simple message: ignorance is death.





Hospitals are far better equipped and experienced to deal with AIDS patients now, compared with the case just two decades ago.



# What are HIV and AIDS?

Possibly the two most alarming medical **abbreviations** – both for individuals and for society at large – are HIV and AIDS. The first, HIV, stands for Human Immunodeficiency Virus. It leads to the disease AIDS, or Acquired Immune Deficiency **Syndrome**. Although the two abbreviations usually appear together, it is important to understand that HIV is a virus, while AIDS is a syndrome.

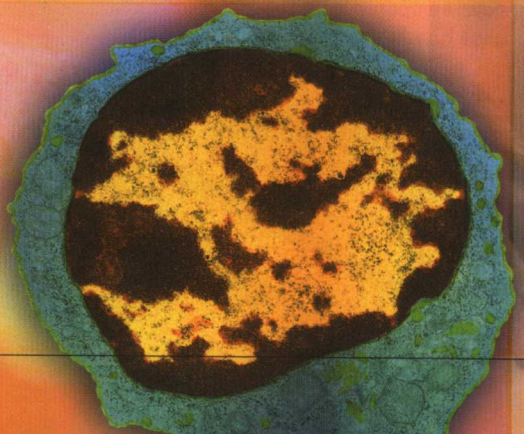
Viruses are specific organisms that can be located within the body, even if they cannot be destroyed. A syndrome, on the other hand, describes a medical condition that has many **symptoms**.

In practical terms, this difference is very important. Doctors can perform a specific test to see whether the HIV virus is present in the blood. To **diagnose** AIDS (a syndrome) they must detect a combination of symptoms, not one single kind of germ. These symptoms are the result of infections that develop because of the body's weakened ability to fight them off. Although there are many different types of such infection, their ability to take advantage of the weakened **immune system** gives them the medical name 'opportunistic infection'.

## Contracting the virus

The HIV virus is most commonly spread by sexual contact with an infected person. It is present in the sexual **secretions** of infected men and women and can gain access to the bloodstream of an uninfected person by way of small cuts or **abrasions** that may occur as a consequence of sexual intercourse. As membranes are so thin in the sexual organs, infection can also occur where there are no abrasions. HIV is also spread by any sharing of needles or **syringes** that leads to direct exposure to the blood of an infected individual. This method of exposure occurs most commonly among people **injecting intravenous** (IV) drugs. HIV can also be transmitted from an infected mother to her baby, either before or during

Many new tests help diagnose and monitor the HIV infections.






childbirth, or through breastfeeding. Although only about 20 to 30 per cent of babies born to HIV-infected mothers actually become infected, this mode of transmission accounts for 90 per cent of all cases of AIDS in children.

Some methods of HIV transmission have been virtually wiped out, and other suspected methods have now been shown to be harmless. When the HIV virus was first identified in the 1980s, there was concern that HIV could be spread through blood **transfusions**. By the mid-1980s, most countries had set

up screening systems to ensure that such blood is safe. In the USA now, for example, it is estimated that undetected HIV is present in fewer than 1 in 450,000 to 600,000 units of blood.

Other instances, once thought to be risky, have now been shown to be safe. Studies have shown no evidence that HIV can be transmitted by insects such as mosquitoes. Similarly, it is not possible to pick up the virus by shaking hands with an **infected** person, or by sharing **cutlery**.

The major type of HIV in the USA, Europe, and central Africa is known as HIV-1. In western Africa, AIDS is also caused by HIV-2, a strain of HIV closely related to HIV-1. Other distantly related strains of HIV-1 have been identified in various areas of the world.

A photograph showing a person's arm and hand. The person is holding a syringe and injecting a substance into their arm. The person has dark hair and is wearing a grey t-shirt and blue jeans. The background is a warm, orange-toned gradient.

Intravenous drug use is another high-risk activity – the infection is passed on when people share needles.



# What are HIV and AIDS?

## How the body is affected

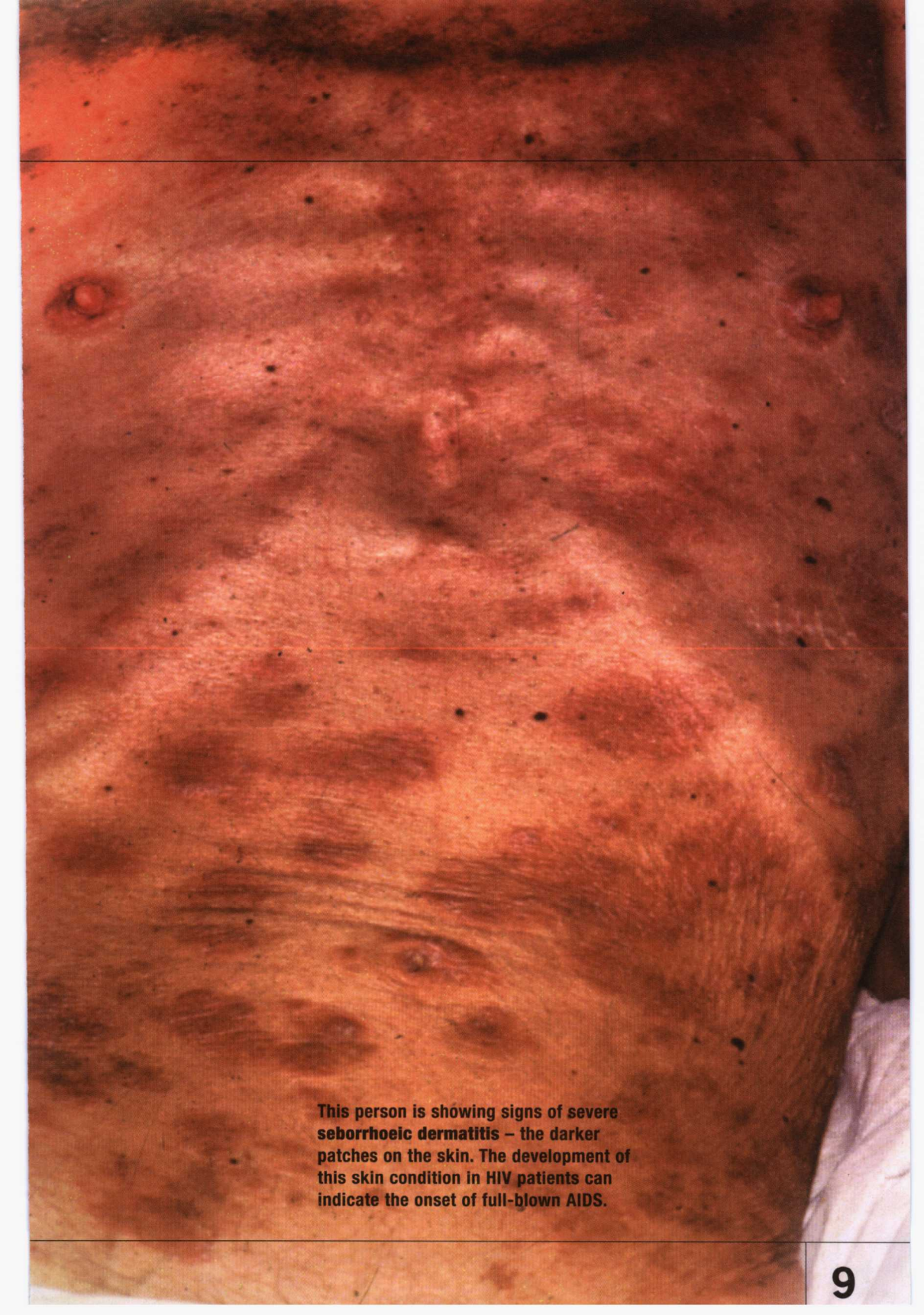
The HIV virus attacks the body's immune system. It weakens the body until opportunistic infections can set in and the patient develops fully blown AIDS. Unlike fully developed AIDS, HIV is often completely symptom-free. That is why it is important that people be tested for HIV if they think they might be at risk, because otherwise they would not know whether or not they had it. Sometimes symptoms occur within a few weeks after infection; these are often flu-like, such as **fatigue**, fever, **swollen lymph glands**, **diarrhoea** and night sweats.

Symptoms of AIDS are more varied, since AIDS often involves several different infections. Some common symptoms are the infections themselves (including a cancer called **Kaposi's sarcoma**, other unusual cancers, pneumonia and tuberculosis), significant weight loss, memory and eyesight problems, or symptoms of a yeast infection such as white spots in the mouth or a **vaginal** discharge. Of course, most of these symptoms can

usually relate to conditions that are far less serious than HIV and AIDS.

Doctors and health officials urge HIV-positive people, in other words those who have tested positive for the presence of the virus, to have regular tests to monitor the progress of the disease. Some medical treatments, notably **antiviral** drugs, can slow the progress of the virus. Medical personnel monitor this progress by checking many symptoms, especially the presence of 'T4 cells' (often called simply T-cells). T-cells are part of the immune system. A normal T-cell count is between 500 and 1000 cells per cubic millimetre of blood. Medications that slow the progress of the HIV virus help keep the T-cell count relatively high; a low count is often a signal that the HIV infection has progressed to AIDS.





**This person is showing signs of severe seborrheic dermatitis – the darker patches on the skin. The development of this skin condition in HIV patients can indicate the onset of full-blown AIDS.**



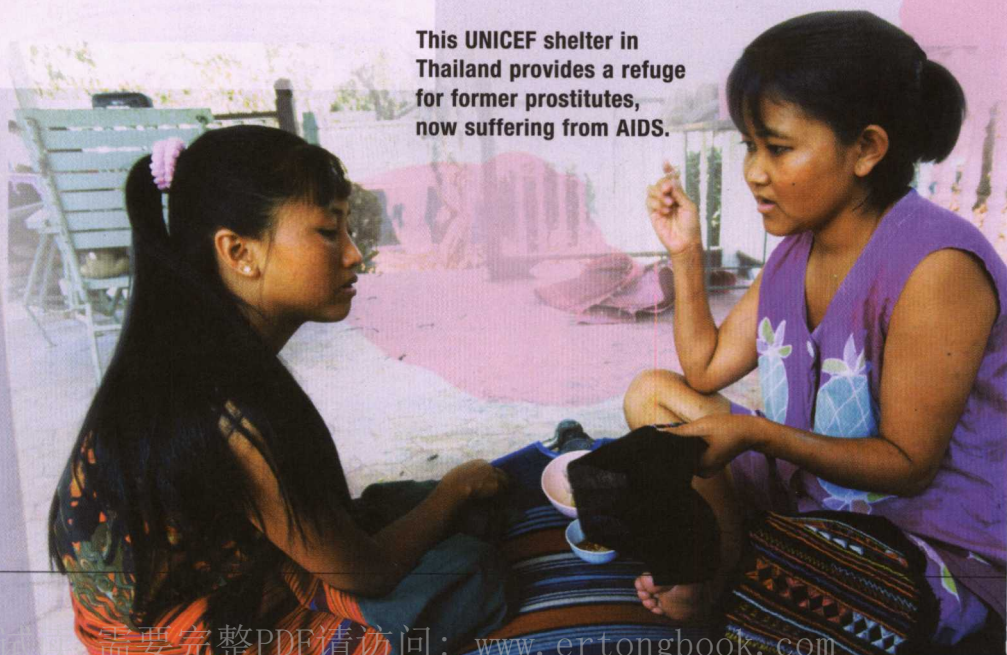
# A worldwide problem

The AIDS **epidemic** has touched every inhabited continent. At the beginning of 2001, nearly 37 million people around the world carried the HIV virus – 4 per cent of these were younger than 16. That number had doubled in only five years. Certain regions, particularly southern Africa and South-East Asia, have very high concentrations of the infection. For example, in early 2001 there were eight southern African countries in which more than fifteen per cent of the adult population carried the HIV infection. The saddest news is that every day, more than 15,000 people worldwide (nearly half of them women) are infected with HIV – that is 1 person every 11 seconds. The vast majority of these people will never have access to the new drug therapies before they die.

## Effects of the increase

Medical professionals use the term 'generalized' to describe a national occurrence of HIV that is still relatively small – below one per cent. That means that the HIV virus is present in distinct groups of people – for example, male homosexuals or intravenous drug users – or it occurs in certain urban areas but much less widely in the countryside. The nature of HIV infection and transmission, however, is constantly changing and the figure of one per cent national infection can easily jump into the next category – known as 'local epidemic'. India and many East European countries, for example, seem **poised** to enter this higher-risk category.

This UNICEF shelter in Thailand provides a refuge for former prostitutes, now suffering from AIDS.





The effects of HIV and AIDS infection are far-reaching. In badly affected countries, such as Botswana, the entire national economy suffers. In high-prevalence areas, more than 60 per cent of new infections occur among people aged 16 to 25. Many of these people will be too ill to work, or even dead, within a decade. There will be acute shortages of labour in essential jobs and even now many schools are forced to close because the teachers are dying.

### USA figures

Some of the first cases of AIDS were reported in the USA. In the last twenty years the US figures about the progress of HIV and AIDS have been among the most detailed of any country. At the beginning of 2001, over 774,450 people had been reported with AIDS in the USA; 448,060 of these had died. The number of people living with AIDS – again at the beginning of 2001 – was the highest ever reported at 322,865.



Posters and other forms of publicity keep the HIV and AIDS issue prominent in New York City.



# Origins of the epidemic

Genuine cases of HIV and AIDS infection might be found by examining centuries-old medical records. However, the public awareness dates back only about two decades and concerns research carried out in California. In 1980–81 Dr Michael Gottlieb of Los Angeles recognized a pattern among five young and previously healthy male patients who had **contracted** a rare form of pneumonia. Two of them had died and the other three were seriously ill. The disease usually affected people whose immune systems were suppressed because of drugs or disease. However, it was hard to draw any conclusions beyond the similarities in age and lifestyle.

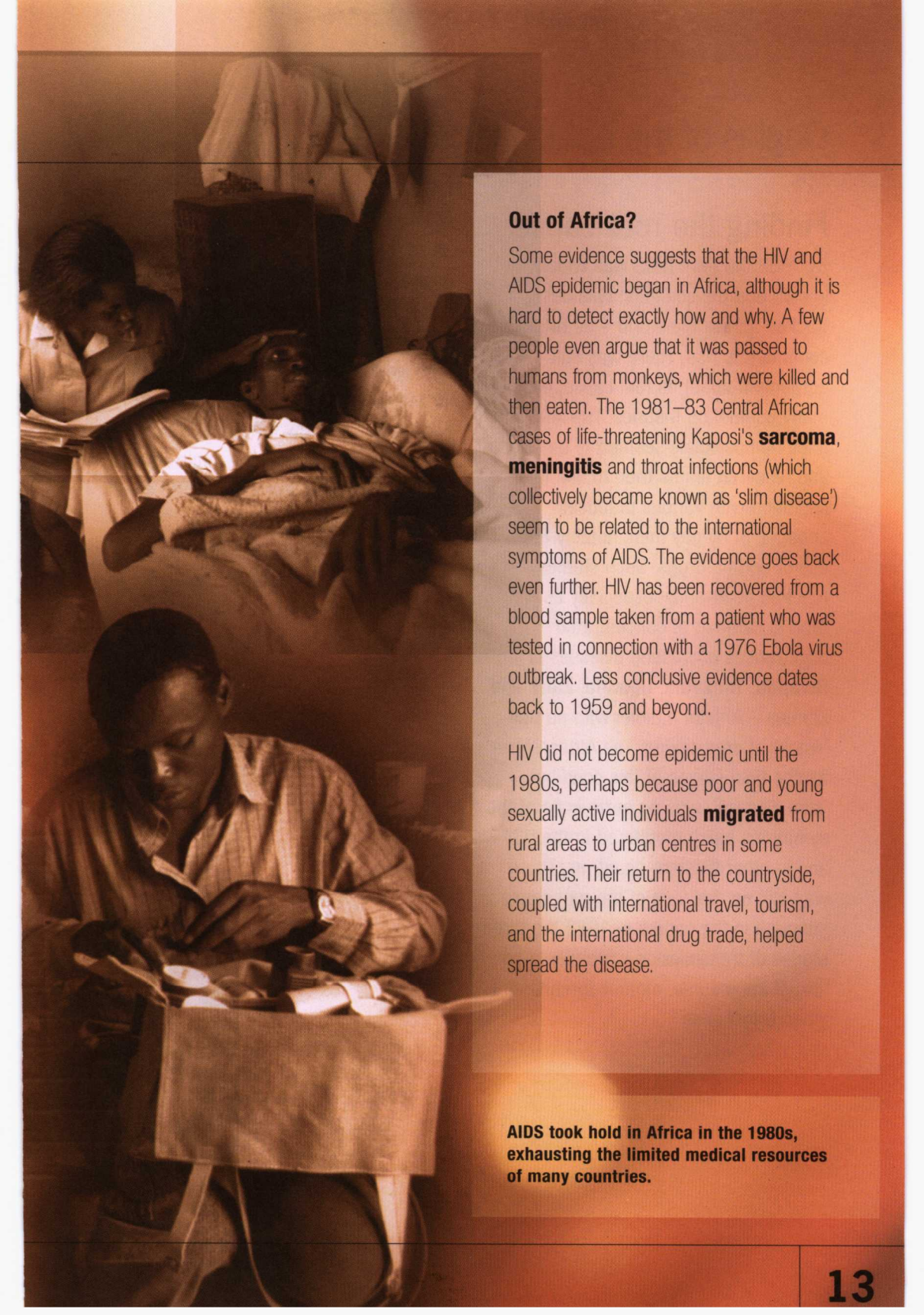
These findings were published in a specialist medical journal (*Morbidity and Mortality Weekly Report*), leading other physicians to announce similar findings. At about the same time, the Centers for Disease Control and Prevention (CDC), the leading USA organization **monitoring** such epidemics, noticed an alarming rate of a rare cancer called Kaposi's sarcoma in otherwise healthy **homosexual** men. Scientists now know that Kaposi's sarcoma is just one of the many conditions that can develop at the onset

of AIDS – no matter how the initial HIV infection was acquired. In 1981 however, it was branded with the term 'gay cancer'. Further research led to it being linked to a wider condition, called GRID ('gay-related immune deficiency'). The new term showed that doctors saw that the real problem lay in the immune system. By this time, late 1981, there was a growing sense of urgency: 422 cases had been diagnosed in the USA alone and 159 people had died.

The AIDS condition was first observed among San Francisco's prominent gay population.







### Out of Africa?

Some evidence suggests that the HIV and AIDS epidemic began in Africa, although it is hard to detect exactly how and why. A few people even argue that it was passed to humans from monkeys, which were killed and then eaten. The 1981–83 Central African cases of life-threatening Kaposi's **sarcoma**, **meningitis** and throat infections (which collectively became known as 'slim disease') seem to be related to the international symptoms of AIDS. The evidence goes back even further. HIV has been recovered from a blood sample taken from a patient who was tested in connection with a 1976 Ebola virus outbreak. Less conclusive evidence dates back to 1959 and beyond.

HIV did not become epidemic until the 1980s, perhaps because poor and young sexually active individuals **migrated** from rural areas to urban centres in some countries. Their return to the countryside, coupled with international travel, tourism, and the international drug trade, helped spread the disease.

**AIDS took hold in Africa in the 1980s, exhausting the limited medical resources of many countries.**



# Origins of the epidemic

## Finding the root cause

By 1982 the term AIDS was widely known and the condition was being tracked across the world – as **fatalities** continued to rise. There was still agreement about its real cause, despite many competing theories. The link with male homosexuals seemed to be strong and research teams tried to link the condition with various practices engaged in by gay men, notably the use of certain drugs. Such studies reached dead-ends, especially as reports came in of concentrated occurrences of wasting diseases in **Rwanda, Tanzania, Uganda, Zaire** and Zambia – African nations with no real history of drug-taking. The African term for the final stages of this condition, 'slim disease', was an **eerie** echo of the symptoms being monitored in the USA and in other Western countries. There was still no real idea of the root cause, although in the course of 1982 the three modes of transmission were identified: sexual intercourse, mother-to-child and blood transfusion.

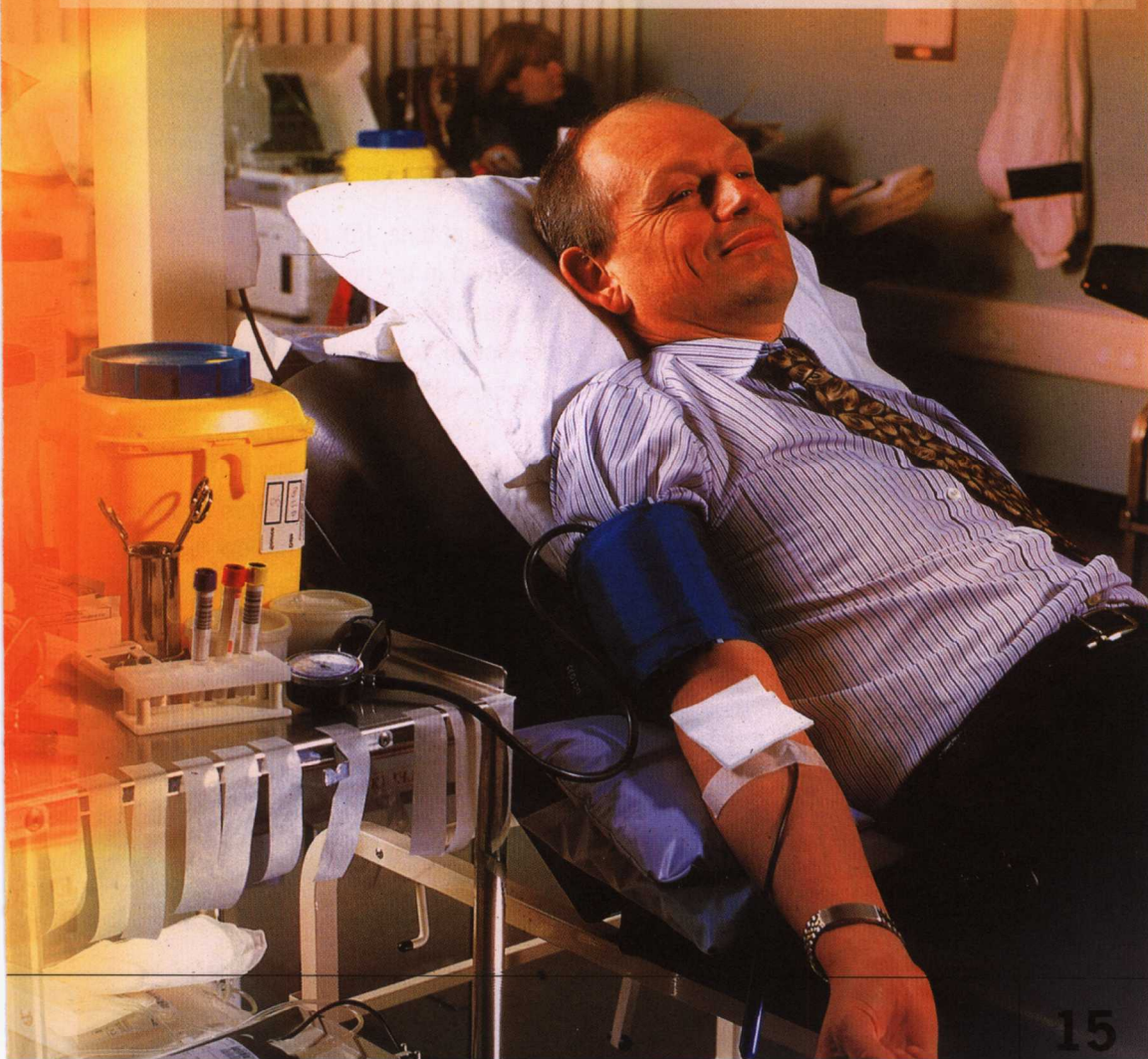
With this conclusion in mind, in 1983 the CDC warned blood banks of a possible problem with the blood supply. Later that year, scientists working at the *Institut Pasteur* (France) discovered and isolated the virus, which was then called the Human Immunodeficiency Virus (HIV). By now the medical world had a clear picture of the make-up of the HIV virus and the wider world could see its devastating effects. By 1985, at least one case of HIV or AIDS had been reported in each region of the world. At the same time, over 11,000 cases of AIDS had been diagnosed in the USA, including 5620 fatalities.

Giving blood is a safe activity despite misinformed scare stories that said it posed an HIV risk.



### Dangerous misinformation

By the mid-1980s, the world was aware of the deadliness of HIV and AIDS but there was a great deal of ignorance about the causes of the condition and how it was spread. HIV-positive people were considered 'tainted' by many members of the public. This harmed efforts to increase public awareness of the disease. One family with three HIV-positive sons (**haemophiliacs** who had contracted the virus through blood transfusion) were driven from their home in Arcadia, Florida, after their house was burnt by people who thought that the boys would spread AIDS through the community.





# Recognizing the crisis

By the mid-1980s the medical community agreed on the main points surrounding HIV and AIDS: the virus at its heart, how it was transmitted and the sort of complications that it triggered as full blown AIDS set in. Many government and private organizations began to champion the causes of prevention, as well as research.

In 1984 four infants in Queensland, Australia, died from HIV-**contaminated** blood. A National AIDS Task Force was formed to advise the Australian Government on the scientific and medical aspects of the virus. Within a year Australia became the first country in the world to secure its blood supply from HIV infection by testing all donations. In 1986, the USA Food and Drug Administration (FDA) approved the first HIV **antibody** test, and HIV screening of blood donations began. At the same time, campaigning groups such as Act Up in the USA, and the Terrence Higgins Trust in the UK, set about publicizing the problem.

## International efforts

Africa's first community-based response to AIDS was formed in Uganda in 1987. Called The AIDS Support Organization (TASO), it became a role model for similar activities around the world. That same year saw the founding of the Global Network of People living with HIV/AIDS and the World Health Organization (WHO) Special Programme on AIDS, later to become the Global Programme on AIDS. The International Council of AIDS Services Organizations (ICASO) was established in 1991.

Since that time, HIV and AIDS have remained in the headlines. New treatments are constantly being developed, and governments have recognized that this global crisis calls for a global response. The Joint United Nations Programme on HIV/AIDS (UNAIDS) was created in 1996 and has become the focal point of new research. In 2001, UN Secretary-General Kofi Annan launched his 'call to action', including the creation of a global fund on AIDS and health.