AIDS closes in

THE latest report on global AIDS crisis published in the first week of December 2000 by UNAIDS, the UN agency monitoring the epidemic. gives little comfort. A staggering 21.8m people have died of AIDS since the first cases were diagnosed in the early 1980s, three million in the last year alone. Reports further reveal that roughly one in every hundred of the world's adults is infected with HIV, the virus which causes AIDS, 50 per cent more than UNAIDS had predicted in 1991, writes Md, Asadullah Khan

OR years health experts have known that HIV, the virus that causes AIDS could bring a devastating scourge to countries like India, Myanmar, the Philippines, Pakistan, China, Cambodia, Vietnam and Bangladesh, with a poor and largely illiterate population. Speaking about India, initially much attention was paid to the brothels of the country's big cities, where the sexually transmitted disease first appeared. But the apprehensions that HIV would someday run rampant through the vastly populated but undeveloped countryside of this region are no longer scare stories. Around 6.5 million Asians were HIV positive at the end of the last year, with 3.1 million already dead of AIDS. The UN puts the annual infection rate at about 120,000 -- a figure it admits is probably underestimated. Reports have it that till now India has the highest number of infections. One in every 50 pregnant women in urban India tests positive, while epidemic levels are reported among drug users. Latest reports on UNAIDS monitoring agency say that India has 3.7 million HIV infected citizens including 557,000 orphans. The number of deaths caused due to this disease in 1999 in India was 310,000, a highly conservative estimate the government

In comparison Myanmar has 530,000 people infected, Thailand 755,000, China 500,000 and Malaysia 49,000. In Africa South Africa will pay dearly for AIDS crisis. The figures are startling: about 3.5 million of that country's 40 million citizens are HIVinfected -- more than three times the US rate and 50,000 new HIV cases emerge each month. The main obstacle in curbing the spread is not technical, but cultural: the tyranny, familiar across Africa, of denial and taboo. This plague still hits hardest in the sub-Saharan Africa, which accounts for 70 per cent of the world's cases and 75 per cent of its deaths. In Africa HIV spreads mainly through unprotected heterosexual intercourse largely accelerated by sexual violence, through visit of migrant workers and through the prevalence of other sexually transmitted diseases.

Even in Zimbabwe, where several prominent figures, including government ministers, have died after contracting AIDS, the real cause of death is kept secret. "There is consistent denial here by the government," says Marvellous Mhloyi, a demographer at the University of Zimbabwe in Harare. "When we leave burial places we can't even say it was AIDS. We just say he died from a short illness." AIDS is all the easier to conceal since death is caused by body's failure to resist other diseases. South Africa, for example, is undergoing an epidemic of tuberculosis -- but the fact that a quarter of its TB deaths are related to HIV infection is often ignored. It is also hard to prevent in countries where polygamy is practised. Black South African women say that it is hard to persuade their menfolk that a monogamous relationship or the use of condoms is not an infringement of their masculinity. According to studies by ING Barings, an investment Bank, AIDS will cost South Africa US\$22 billion, about 17 per cent of GDP by 2010.

Tuberculosis is also prevalent in India and Bangladesh: nearly half the population has a latent TB infection. Normally only three to four per cent of those cases develop into active TB. But a person who is HIV-positive, with a weakened immune system, is prone to the disease and in conventionally crowded living conditions in this region, could spread it to 20 others. Although older strains of tuberculosis are successfully cured and treated with modern drugs. TB still remains the largest killer of adults in the Asian region, especially Banglathe full brunt of the HIV problem has been felt. What's feared most: the two diseases combined, according to some AIDS Control Organisation are "an epidemic within an epidemic."

In Bangladesh the situation is assuming worrisome proportions. Reports published in the dailies through Police Department sources after the murder of an Industrialist in Uttara indicate that private brothels have proliferated through some posh areas of the city where among other enjoyments, unprotected heterosexual relationships are a way of life. As such there are now worries that the disease may be spreading through non-commercial sexual relations, which tend to be harder to target. According to Peter Piot, head of UNAIDS this particular aspect compounded by poverty hobbles prevention programmes, cripples health care systems and makes costly drugs unattainable by the infected population in the povertyridden countries like India and Bangladesh. In the Asian context, Bangladesh ranks 11th among the 17 AIDS-infected nations namely India, Thailand, Myanmar, China, Cambodia, Vietnam, Pakistan, Indonesia, Malaysia, the Philippines, Japan, Sri Lanka, Singapore, South Korea, Hong Kong and Laos. The number of infected people in the country, according

research and studies show that Bangladeshi society now is more footloose and sexually free than is commonly admitted. As a result of such mobility that is now surging up, HIV will no longer remain confined to red light zones alone, if these exist in some cities and roadside brothels that service long distance

The problem with HIV -- either in our country or adjoining India's countryside is that awareness of the disease is often non-existent -- literacy is less than 50 per cent in rural areas and medical care is primitive and dependent on diagnosis through symptoms. Yet HIV does not normally produce symptoms until it triggers full-blown AIDS, a process that can take years. Most ominously, no publicity campaign has even penetrated the countryside. Despite the fact that the country is now facing a political upheaval, the responsibility falls squarely on the leaders of the political parties either running the government or sitting in the opposition to begin telling its millions that AIDS exist and that the disease can be avoided. Surely the task is daunting and overwhelming. It must be noted that rampant intravenous drug use, collapsing health and education system and a lack of political will to deal with the disease is fuelling an AIDS explosion. Painfully true, new combinations

Tuberculosis is also prevalent in India and Bangladesh; nearly half the population has a latent TB infection. Normally only three to four per cent of those cases develop into active TB. But a person who is HIV-positive, with a weakened immune system, is prone to the disease and in conventionally crowded living conditions in this region, could spread it to 20 others. Although older strains of tuberculosis are successfully cured and treated with modern drugs, TB still remains the largest killer of adults in the Asian region, especially Bangladesh, India, Pakistan and the Philippines etc. And that's before the full brunt of the HIV problem has been felt. What's feared most: the two diseases combined, according to some AIDS Control Organisation are "an epidemic within an epidemic."

to UNAIDS, is 13,000 which include 610 or orphans. The number of deaths caused due to AIDS in 1999 according to the same source is 1000, a figure that is really alarming. Most worrisome, half of all sex workers in the country are infected with syphilis, meaning condoms are not being used. About 25,000 drug addicts regularly share needles and these vulnerable groups are also blood donors. Observers fear that an epidemic is knocking at the door.

If it comes that way it will be a national shock. Until 1996, most people in the country considered AIDS a scourge of the libertine West that posed no threat to a relatively isolated land with a conservative society based on monogamous marriages. But the country now, it must be noted, has hundred and thousands of sailors, construction labourers of all varieties who work abroad for a time and a continual tide of students and businessmen returning from overseas. Marriage is indeed the bedrock of the society and divorce rate is not anything alarming, but worryingly true, in the present fabric of the society most of the adolescents just a few years short of marriage in big cities are leading a life that is hardly permissible by the traditional norms of the Bangladeshi society. Urban areas as well as villages in Bangladesh are not in fact the bastions of sexual probity they are quaintly imagined to be and the country s a huge population of migrant workers moving through cities of treatment in the West for HIV could be largely irrelevant in our region, where the drugs involved are so expensive that they might be available only to the wealthy.

The triple-drug therapy namely one protease inhibitor with two reverse transcriptase inhibitors seems to have fulfilled the promise. Even for those who can stay the course, triple drug therapy at US\$16,000 a year per patient is for now a rich man's solution to a disease that largely affects poor people. Nine out of ten people with HIV live in the poor sub-Saharan and Asian region, and if they are to be treated a different approach will be needed. That calls for introducing a vaccine, which researchers say is in the process of being developed. Hopefully, since last year new promises of tackling the disease in the developing countries through the initiative of G7 nations are in the offing. And although anti-HIV medicines are still prohibitively expensive for most of the world's afflicted, drug companies have at least started to look at ways of lowering their prices for the needy. Home-grown initiatives have vastly improved access in countries like Brazil, Thailand, Kenya and Tanzania. And a new vaccine, targeted at the type of HIV wreaking havoc in Africa is scheduled to begin clinical trials in Kenya early this

Md. Asadullah Khan is the Controller of Examinations. BUET



Ghana remains without any of the drugs that allow AIDS sufferers in rich countries to lead full lives. Efforts by an Indian company to market them here failed when a drug multinational issued a patents challenge. Eugenia Adofo of Gemini News Service correspondent visited an Accra hospital to speak to a patient who could not fathom why she is denied medicine that can help.

✓ OU mean that there are drugs that can lessen my suffering?" Ama (not her real name) asked with a mild sense of bewilderment that failed to mask the physical pain racking her frail body. "Yes, there are. But these drugs

The Ghanaian cut the explanation short: "Never mind about a cure. I know I will die anyway. But at

healthy lives.

CAPACITY

Only 10 countries - 8

in Europe, Japan and

significant research

developing countries

South Korea) have an

industry with some

innovative capacity

US - have

pharmaceutical

industries with a

base. Another 12

developed and 5

(Argentina, China,

India, Mexico and

it every year.

MANAGING AIDS

UNTREATED DISEASES

The cost of health

In wealthy countries, antiretroviral drugs are a

miracle for hundreds of thousands of people

living wth AIDS, allowing them to lead full and

No pharmaceutical company makes melarsoprol, a

Production of the drug treating neisseria

Nigeria alone, is uncertain and not guaranteed

Only 13 (1%) of 1,223 new drugs or components

treatment for sleeping sickness, although 300,000 contract

meningitidis, affecting over 100,000 people a year in

marketed from 1977-1997 were

national health budgets'

PRICED OUT?

specifically for tropical diseases

The price of basic medicines is a vital factor in

determining public health. Most health spending in

the poorest countries comes directly out of household

budgets, rather than pre-paid insurance schemes or

least if they will dull the pain and let me die a merciful death

Her voice trails off... "Where can I get some to buy?"

Ama was a pretty and rotund housewife in a former life that she cannot even remember now. Today she fights for her life at Central Hospital in Accra, a struggle that lies ahead for the 440,000 other Ghanaians infected with HIV, the virus that causes AIDS.

Her husband, a long-distance truck driver, apparently contracted HIV while having sex on one of his hauls and infected Ama and their second child, who died shortly before the age of three

"He was the most adorable baby I have ever seen, with huge, trusting

"Discovering,

developing, testing, and gaining

regulatory approval for new medicines is

expensive, time

consuming and risky." – PhRMA, association of US

drugs manufacturers

eves and the widest smile." she recalled. "I watched the disease eat away at his smile and then it got to his eyes. It broke my heart.

"I would have sold my soul to the devil to reduce the pain that my little boy went through. He got infected through no fault of his and I think he deserved more medical care than the useless antibiotics and pain

killers that the doctors gave him." It was news to Ama that antiretroviral drugs such as AZT and 3TC would have supported her baby and possibly kept him alive longer. They would also have numbed Ama's tired body. For hundreds of thousands of people with the disease in wealthy countries, these drugs are a miracle allowing them to lead full and healthy lives.

Antiretroviral drugs are not available in Ghana. A bid by an Indian company, Cipla, to sell a cheap generic version of Combivir, a combination of two antiretrovirals. is stalled because of a patents row.

Normally, treatment with antiretrovirals can cost up to \$15,000 a year in industrialised countries. The Indian company offered to sell its treatment through a non-government organisation for about \$350 a year. Drug multinational GlaxoSmithKline, which claims the patent for Combivir, offered a competitive cut-price version for US\$2 a day through a United Nations/World Bank initia-

Ama's total life savings tally up to less than US\$500.

She is among the developing world's estimated 32 million AIDS patients who cannot afford AIDS

Such a situation has prompted Oxfam, a Britain-based nongovernment organisation, to launch a campaign to cut drug costs for poorer countries.

Oxfam argues that world trading rules on drug patents are raising prices and restricting access to vital

medicines, reinforcing the link between ill-health and poverty, and widening the health gap between

the rich and poor "We know that making lifesaving drugs more affordable isn't the whole answer," Oxfam policy director Justin Forsyth said. "However, the balance has skewed too far towards corporate wealth rather than public health. The availability of cheaper drugs will save lives."

In Ghana, health authorities, reluctant to get dragged into a patent dispute, have refused to let Ciola to distribute the drug

"When the elephants fight, it is the grass that suffers," commented a Central Hospital nurse who is bitter about the patent row.

GlaxoSmithKline maintains it is not to blame for the absence of antiretrovirals in Ghana, where 33.000 people died of AIDS in 1999.

"We didn't block getting drugs into Ghana -- the Food and Drug Board did," company spokesman Phil Thomson said in London.

GlaxoSmithKline says it wants to help provide affordable access to medicines, but other efforts beyond the drug industry have to be pur-

"Pharmaceutical companies can keep dropping prices buy you have to consider these are very poor countries that don't spend a lot of money on healthcare," Thomsor

Ghana's government spends about \$11 per person on healthcare, in comparison to \$1,303 provided by Britain

"It's too simplistic to look solely at pharmaceutical companies to rid the world of poverty -- there's only so much we can do," Thomson

Such arguments mean little to people like Ama who need the drugs -- or will suffer and die a needlessly painful death.

Eugenia Adofo is an Accra-based freelance



A little piglet tugs on the plastic covering the boots of a worker at an educational and advice centre of the Agriculture Chamber of Schleswig-Holstein. Because of the suspect presence of foot and mouth disease in Germany all workers and visitors to the centre must wear protective clothing to prevent the possibilities of transmitting the disease to the

When Ebola and HIV are your friends

BOLA and HIV, two of the most terrifying viruses known to Man, are being harnessed to fight a killer lung disease

In a remarkable tale of poachers-turnedgamekeepers, Ebola and the human immunodeficiency virus (HIV) that causes AIDS are being called upon along with the flu virus to help treat people with cystic fibrosis.

Scientists hope to cure inherited lung diseases with gene therapy, in which a gene is tucked inside a harmless virus. Like the Trojan Horse, the virus would infect the lung cells, delivering a good gene to replace the flawed gene that causes the ailment.

The problem, though, is finding a Trojan Horse smart enough to penetrate the thick wall of the lungs, which in the case of cystic fibrosis are covered by a mucus barrier.

This is where Ebola and the flu virus, both notorious for attacking the lungs, come in, the monthly journal Nature Biotechnology reports in its March issue. A team led by James Wilson from the Institute for

Human Gene Therapy at the University of Philadelphia Health System, stripped the lung-binding proteins from the Ebola and flu virus.

They then inserted these proteins into the coating of a lentivirus, a disabled virus based on HIV, which would be the vehicle for the therapeutic gene.

The new lentivirus proved a success in delivering its secret weapon to lung cells in a test tube as well as small samples of trachea tissue, and also penetrated the lungs of lab mice.

The Wilson team stressed that additional testing on primates had to be carried before this "pseudotyped" lentivirus could be put to any human trials, notably to see whether it caused any backlash from the immune system or whether the HIV components of the virus mutated.

Gene therapy is highly experimental and some-

what controversial, as researchers are discovering there are few diseases that are pinned to a single gene and can thus be reversed without complications. One big success in gene therapy was reported last

ear, when French researchers stunningly restored the immune system of several "bubble" babies who would otherwise have been condemned to spend their lives in sterile plastic tents to ward off infection.

Ebola is a ferociously virulent disease that causes death by severe haemorrhaging. The latest outbreak, in Uganda, killed 173 people before it was officially

Nature or nurture?

Why are we mad, creative, thieving, impulsive, obsessive, depressed, loving or murderous? Is it because of our genes or because of our environment? Ever since mankind contemplated his own existence, the "nature versus nurture" debate has raged. Now a powerful new tool has entered the fray: the human genetic code, writes Richard Ingham of AFP from Washington

ESEARCHERS poring over the genome, whose draft was unveiled February 12 this year, whose graft was universed a consult, and are already enthusiastically predicting it will are already enthusiastically predicting it will unlock dramatic evidence about the molecular causes

of behaviour "Ultimately the human genome sequence will revolutionise psychology and psychiatry," Kings College London researchers say this week in the US journal

"The most important impact will be on understanding the neuro-biological basis of individual differences and achieving a better grasp of the etiology of (mental)

diseases. But they downplay fears that the genome will serve to

reinforce the bleakest view of determinists. Genes, they say, are likely to be more important than environment on behaviour, according to studies that have notably looked at the fate of identical twins who were separated and brought up by different families.

But headline-making claims that a given gene can be the cause of crime, homosexuality or sporting brilliance are dangerous nonsense, they say.

For one thing, behaviour is likely to be a cause of complex action between multiple genes rather than just one. And behaviour is still strongly affected by moral them, McGuffin said.

Another rich area for gene-hunters are the DNA sequences that could make an individual more vulnerable to addiction.

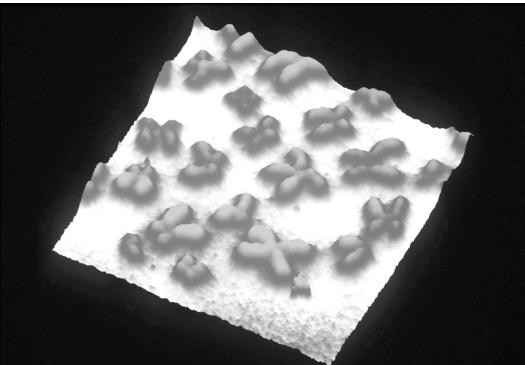
"Between 40 and 60 per cent of an individual's risk for an addiction, whether it is to alcohol, opiates or cocaine, is genetic," say a team led by Eric Nestler of the University of Texas Southwestern Medical Centre, writing this week in the British journal Nature.

In a preliminary search of the genome, they spotted a bunch of genes that appear to control proteins which "desensitise" neurone receptors, the latch mechanisms on the cell surface which determine whether a brain cell is receptive to a drug molecule or closed to it.

Receptor desensitisation is important, as it means the drug taker has to take more and more of the drug to achieve the same pleasurable effect.

The next task is to compare individual genetic codes with each other to spot sequences that could identify behavioural genes, a task that could be done with ease by number-crunching super-computers

There are ethical fears about behavioural genomics. but the London researchers say that many of these are misplaced.



A computer-generated handout of human chromosomes.

codes and social pressures. "The effect of genes on complex traits like behavioural traits is probabilistic rather than deterministic," coauthor Peter McGuffin, of Kings College's Institute of

Psychiatry, said. "You may have a greater propensity for anti-social behaviour because of your genes than someone who doesn't have the genetic makeup. But that doesn't mean you're definitely going to be anti-social. It doesn't rule out

Where the genome will especially score is identifying mental disorders that may have genetic roots, which will be the first stage towards devising a medicine to treat Worries that someone with an inherited disorder may

be branded a social outcast are unfounded, they hope. In fact, conditions such as autism, depression, dyslexia, schizophrenia or senility, which still widely provoke fear, disapproval or superstition, will be universally acknowledged as a disease and thus destigmatised, they predict.

"Identifying genes involved in behavioural disorders will do much to improve public perception and tolerance," in the same way that former US president Ronald Reagan helped acceptance of Alzheimer's disease by publicly acknowledging that he had this ailment, they