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Health 2003: The Top Ten

Dramatic advances and frustrating setbacks. In medical research, the biggest challenges are not always the technical ones. A look at the key health stories of the year.

Also Inside:

SARS, ROUND TWO

Has China absorbed the lessons of the SARS crisis?

STOPPING STROKES

An experimental device can vacuum out blood clots

IT WAS A YEAR THAT SAW major advances in medicine and health—fields that are ever more complicated and confusing. Cutting-edge technology and new (often contradictory) studies seemed to appear every day, making it hard for readers concerned about their own and their families' health to sort out what was accurate and important. In this special Health for Life section, we report on the year's 10 most important health stories (they're not ranked in any particular order).

Science has come up with some amazing answers to an array of daunting problems. Researchers are moving closer to effective treatments for cancer and Alzheimer's and diseases caused by assaults from our own immune systems. Innovators are exploring bold new approaches to stroke—a problem that kills more than 5 million people every year.

In medical research, progress is tentative and sometimes illusory. There are exciting new ways to think about depression, but early attempts to turn these ideas into drugs have yet to succeed. Women this year fled from hormone treatment as new studies confirmed that the widely used therapy has serious risks. Experts still disagreed about how best to deploy cholesterol-reducing drugs—and whether offering free antiretroviral drugs is enough to solve Africa's AIDS epidemic.

What the year in medicine revealed was this: the biggest health challenges are often not the technical ones. Controlling AIDS now depends more on will than ways. Obesity, one of the biggest health crises facing the world, may be a disease, but curing it will require not just a new generation of pills, but changes in our own lives.

FROM TOP: CHIEN-CHI CHANG—MAGNUM
ILLUSTRATION BY LOST IN SPACE FOR NEWSWEEK

How to Prevent Another Outbreak

BY FRED GUTERL AND SARAH SCHAFER

AT THIS TIME OF the year, the animal markets in southern China's Guangdong province are usually crowded with civets, raccoon dogs, snakes and even kittens, destined for local restaurants. Entrees in this part of the world are traditionally kept alive until moments before they land on the dinner table. The practice would be nothing more than a cultural curiosity if it weren't so bad for the world's health: animals and humans living in such close quarters tend to pass around viruses until, once in a while, one turns into an epidemic. Last year one virus happened to cause severe acute respiratory syndrome, or SARS. By the time the world took notice—in March—this new bug had slipped into the countryside, through the airports of Beijing and Hong Kong and beyond.

Now southern China, the world's most efficient virus factory and ground zero for most of the globe's influenza epidemics, is revving up for another cold and flu season. This year, though, SARS has lost the element of surprise. Health authorities are so intent on spotting signs that they're getting skittish. When a Taiwanese man returned last month from a trip to the mainland running a fever, hospital officials put him in isolation. It was a false alarm. But most health authorities agree that a return of SARS this year is all but inevitable. In fact, one official at the World Health Organization lost a $64 bet when the disease hadn't resurfaced by Nov. 18.

Such pessimism might seem surprising. After all, most health workers around the world dealt swiftly and effectively with last year's pandemic. They showed how vigilance, responsiveness and good communication pay off when dealing with a global disease. The wild card this year is China. Of the 774 people who have died of SARS, three quarters lived in mainland China; if SARS is lying dormant, awaiting cold weather and the runny noses that come with it to make a comeback, China is the most likely starting point. How well has this vast country absorbed the lessons of SARS?

Chinese authorities couldn't do worse than repeat last year's performance. Even as SARS patients were inundating emergency wards throughout the country last winter, Beijing withheld information from WHO officials and forbade doctors and other health-care workers to talk publicly about the disease. Since then, "cooperation has been remarkably good," says the WHO's Beijing representative, Dr. Henk Bekedam. China's leaders seem committed to preventing a new outbreak. The new Health minister, Wu Yi, impressed international health officials with her willingness to reform China's woeful health-care system. To prevent the chaos that marked Beijing's handling of the SARS crisis last year—authorities actually worked against the provincial hospitals by insisting that the new illness posed no threat—Wu worked closely with WHO officials to set up a new surveillance network. Three regional labs collect virus samples and track SARS cases with new software.

No doubt China is better prepared to fight SARS than it was six months ago. It's proba-

1 SARS
Severe acute respiratory syndrome infected **8,098** people in 2003; **774** died.

PHOTOGRAPHS BY CHIEN-CHI CHANG—MAGNUM

STAYING SAFE IN TAIWAN: Most health authorities agree that a return of SARS this winter is almost inevitable

bly also better equipped to fight influenza, AIDS, tuberculosis and other diseases. Last year's SARS outbreak forced China to address weaknesses in its health-care system—particularly in research, monitoring and treatment—that should help it deal with other deadly diseases. That comes as a huge relief to the country's long-suffering neighbors. "China is key in global influenza surveillance," says Dr. Klaus Stöhr, head of the WHO's influenza team.

Improvements in data collection are helping China stop the flu and other bugs from migrating across its borders. In April, for example, the mainland cooperated with Hong Kong and Macau to build a reciprocal reporting system to track diseases. In June, officials in Guangdong province used this system to alert Hong Kong to a Japanese encephalitis outbreak. At a regional conference last month Chinese officials pledged more funding to strengthen international reporting systems further. They are also working closely with health experts to track Nipah, an even deadlier virus than SARS.

Scientists working on diseases such as HIV/AIDS say they have SARS to thank for new access to funding and state-of-the-art facilities. Dr. Shao Yiming, director of the department of virology and immunology at the Chinese Center for Disease Control and Prevention, expects funding for AIDS to increase twenty-fold, in part because of the attention SARS has brought to public-health issues. Beijing has promised to build 20 to 40 new labs that meet international safety standards, which—should the SARS crisis subside—could be used for AIDS research. "That's a good trade-off," says Shao, who recently received a $250,000 grant from the U.S. National Institutes of Health to help develop a SARS vaccine. "We help [fight] SARS first, and then SARS will help us."

First, of course, China's health experts must focus on preventing another SARS outbreak. China's health-care system is still vastly underfunded. It doesn't help that Beijing seems reluctant to concentrate its scant resources on high-risk areas, such as the south. Instead, it is taking on the entire country at once, even those places—like the sparsely populated west—that are unlikely to support a SARS outbreak. Making sense of information from the provinces won't be easy, either. "China is a big country," says the WHO's Hitoshi Oshitani. "It's not easy to set up a good system."

A big challenge will be keeping the information about new infections flowing. Wu's Health Ministry has issued guidelines to provincial hospitals designed to speed the re-

porting of SARS cases. She's also given provincial administrators a dressing down for not taking the threat of SARS seriously. In a national teleconference on SARS prevention, she accused some local governments of having "lowered their guard, slackened efforts and developed the idea of leaving things to chance" in preventing a return of SARS.

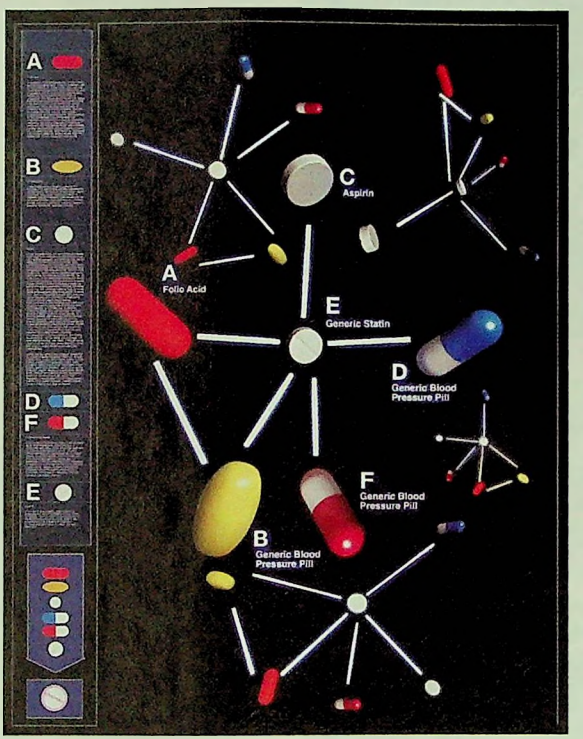
Another concern is infection from lab samples. If a researcher could catch SARS in squeaky-clean Singapore, which happened in September, the more than 100 labs and hospitals in China thought to hold SARS samples may be disasters in waiting. Many of them are located in the provinces, where conditions are often unsanitary. WHO experts say Chinese officials have tried to track down these virus samples and explain to health-care workers the need to destroy them, or at least meet international standards of cleanliness and safety. But China won't say how many samples are out there, which makes WHO officials nervous. They also worry that some labs will give up their samples only for cash.

Making an accurate diagnosis would help the effort to track a new SARS outbreak. Researchers have been working on a cheap and accurate diagnostic test but haven't had much luck. Now they think a vaccine may be the best way of stopping the disease. One Chinese company claims to have developed a vaccine that works in monkeys, and plans to start clinical trials this month. Researchers at the University of Hong Kong will also begin testing a vaccine before the end of the year. Even if they work, they won't be ready until next winter at the earliest.

One thing China hasn't learned is that its eating habits—particularly the taste for freshly killed meat—might have to change. This winter the battle will be shaping up between China's traditions and the world's health.

With ALEXANDRA A. SENO in Hong Kong

Next: The Polypill Prescription



BY JERRY ADLER

NICK WALD'S GREAT brainstorm, which came to him a few years ago during his father-in-law's struggle with cardiovascular disease late in life, has the virtue of utter simplicity, and perhaps also its drawbacks. Watching as the old man downed the usual cocktail of heart medications, Wald, a professor of preventive medicine at the Wolfson Institute in London, realized that his father's trouble could have been averted, or at least minimized, if he'd begun his regimen years earlier. Of course, he didn't have symptoms then, but that's the point: half the population in Britain eventually develop serious heart disease. Rather than try to identify which half, why not just give the medication to everyone older than 55?

Out of that hunch came the Polypill. It would consist of six relatively inexpensive, generic components: a statin (to lower cholesterol), three different drugs to lower blood pressure, aspirin (to interfere with blood-clot formation) and folic acid (to reduce levels of circulating homocysteine, a suspected risk factor for heart disease). These are all drugs commonly prescribed for patients at risk for heart disease, and folic acid is found in multivitamins, but the idea of giving them routinely to everyone over a certain age is, as Wald and collaborator M. R. Law admit, "radical." In publishing their paper last summer, the editor of the British Medical Journal suggested the issue in which it appeared might be "the most important for 50 years."

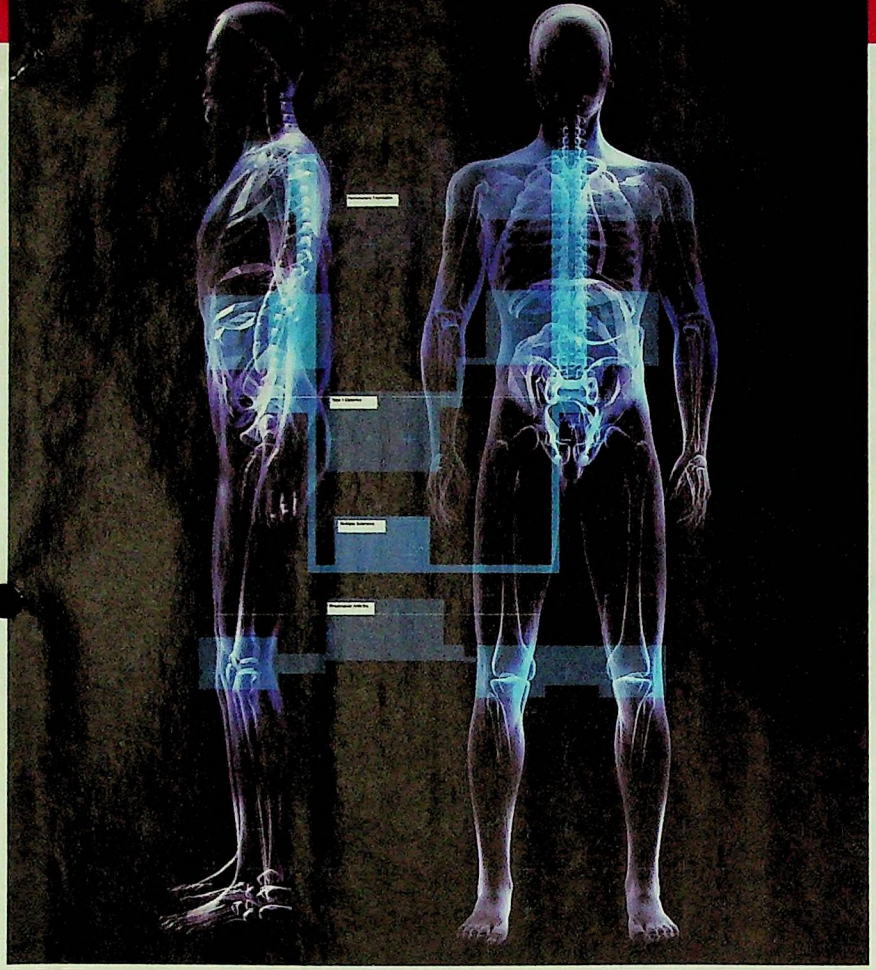
It certainly has proved to be one of the most controversial. Critics argued that even aspirin has the potential to cause serious or even fatal side effects, such as gastric bleeding. And some British doctors seemed uneasy with the idea of a pill you give to everyone. "Let's take this to its logical conclusion," wrote one medic, "and put every drug known to medical science in the water supply."

A more measured response comes from Dr. Robert O. Bonow, president of the American Heart Association. "It's not totally a bad idea," he says. "Cardiovascular disease is the leading cause of death worldwide, and we're not going to be able to do enough angioplasties to treat entire populations." But he worries that packaging six drugs in a single pill carries the twin dangers of unnecessary side effects for people at low risk, and, conversely, undertreating those who need more aggressive care. The availability of such a pill might also deter people from making healthy lifestyle changes (such as losing weight and stopping smoking). "My idea of a polypill," says Bonow, "is exercise and a good diet."

Undaunted, Wald hopes to begin clinical testing of the Polypill soon. He doesn't imagine its being sold over the counter, at least initially. People with certain conditions (such as asthma or bleeding ulcers) shouldn't take one or more of the proposed ingredients, and you wouldn't want to give the pill to someone who was already taking some of the components in another form. "There's much to gain and little to lose by the widespread use of these drugs," Wald writes. "No other preventive method would have so great an impact on public health in the Western world."

2 The Polypill
Each year **17 million** people die of cardiovascular disease around the world.

ILLUSTRATION BY LOST IN SPACE FOR NEWSWEEK



When the Body Attacks Itself

BY ANNE UNDERWOOD

THE IMMUNE SYSTEM is a thing of beauty—subtle enough to distinguish dangerous invaders like viruses from benign interlopers such as food; clever enough to recognize when the body's supposedly friendly cells turn cancerous and should be eliminated. But the immune system can also go awry. When it begins mauling healthy tissues, the result can be any one of 80 autoimmune diseases such as lupus or rheumatoid arthritis. "It's the price we pay for having such a dynamic, finely balanced system," says immunobiologist Jeffrey Bluestone of the University of California, San Francisco.

Must we limit ourselves to treating the symptoms of these disorders, or could we modulate the immune system itself? Immunologist Marc Feldmann and rheumatologist Ravinder Maini of Imperial College in London posed that very question in the mid-1980s. Doctors scoffed. But three drugs for rheumatoid arthritis emerged from their research. And this year Maini and Feldmann won the Lasker Award for clinical medical research.

Drug companies are eager to expand this approach into therapies for other autoimmune diseases, which have been on the increase since the 1950s, but it won't be easy. The immune system is a vast network with a bewildering array of warriors—from antibody-making B cells to various kinds of T cells that can enhance antibody production, kill virus-infected cells, initiate inflammation and finally shut down an immune attack. B cells and T cells also make more than 100 types of helpers called cytokines that assist in orchestrating every aspect of the immune assault.

Maini and Feldmann in the 1980s zeroed in on one such cytokine called tumor necrosis factor (TNF). It derives its name from its ability to kill cancer cells, but in excess it also initiates the inflammation of rheumatoid arthritis. Today anti-TNF therapy is proving useful for a range of inflammatory conditions. But it does not hold the master key to all autoimmune diseases, so doctors are targeting other immune-system components in a search for new treatments. Genentech's drug Rituxan, a bioengineered antibody against B cells, is now in early trials for lupus, the most challenging autoimmune disease because it affects organs throughout the body.

Muzzling the immune system's pit bulls is only one approach. Another—in theory at least—is to boost the components of the immune system that naturally rein in attacks. Last month immunologist Nathan Karin at the Technion-Israel Institute of Technology in Haifa published a paper showing that the immune system can make its own anti-TNF antibodies when it needs to. "If we could harness these antibodies," he says, "we might be able to teach the body to amplify its own beneficial response."

In the long run, however, the goal of doctors (if not drug companies) is to retrain the immune system so that drugs are no longer needed. Sound impossible? "I've staked my whole career on it," says Bluestone. Several years ago he developed a bioengineered antibody to treat type 1 diabetes; he has tested it in 23 newly diagnosed patients. Two years later, those who received just two weeks of treatment at the outset are making twice as much insulin as patients who didn't receive the antibodies. "What's really exciting is that the T cells seem to remain in the pancreas and retrain other T cells," he says.

Unfortunately, even if the treatment works perfectly, it's not a cure. By the time type 1 diabetes is diagnosed, the pancreas has lost 80 to 90 percent of its insulin-making ability. That's why the ideal time to treat autoimmune diseases is early on, before symptoms even emerge. Doctors have their work cut out for them.

3 Autoimmunity

90% of individuals diagnosed with lupus globally are women

SOURCE: LUPUS FOUNDATION OF AMERICA

ILLUSTRATION BY LOST IN SPACE FOR NEWSWEEK

Relief That May Be Too Risky

BY KAREN SPRINGEN AND BARBARA KANTROWITZ

FOR 15 YEARS SIDNEY Constien took hormone therapy for symptoms of menopause. "I kept asking the doctor, 'How long do I have to take this?' He kept saying, 'How long do you want to live?' " Bolstered by the widespread belief that hormone therapy prevented heart disease in postmenopausal women, Constien stayed on it. Then, in the spring of 2002, she was diagnosed with breast cancer. A few months later the U.S. National Institutes of Health halted its study of estrogen-plus-progesterone therapy because of evidence that it increased the risk of strokes, blood clots, heart attacks and—most shocking to Constien—breast cancer. Although she's cancer-free after lumpectomy and radiation, Constien, now 66, has a new mission. "I want to get the word out because I have friends who are still on it," she says. "They think it's keeping them young."

No problem getting the word out this year. It seemed as if every month researchers released more bad news. New data showed that hormone therapy increased the risk of dementia, and that women who took hormones were more likely to have more advanced breast cancers. Research also showed that the heart-disease risk increased 80 percent during the first year of use.

The scary headlines are bewildering to a generation of women who grew up thinking hormone therapy was virtually a fountain of youth. Many simply threw out their pills. In the four months after the July 2002 publication of the NIH's Women's Health Initiative study, about a third of women on estrogen-plus-progesterone products stopped taking them, according to research by a company called Express Scripts, which studies prescription data. A year later only 15 percent of the quitters had started taking hormones again. The decline continued this year. In March, Express Scripts found that an additional 26 percent of women who had originally decided to stick with hormone therapy had later dropped it. And everybody wondered: how could the doctors get it so wrong?

ILLUSTRATION BY LOST IN SPACE FOR NEWSWEEK

The simple answer is that doctors originally decided hormone therapy was safe because they'd seen positive results in their patients who began treatment at the start of menopause. Based on observational studies of these first patients, doctors began to think in the late 1980s that besides easing hot flashes, hormone therapy prevented all kinds of chronic diseases, says Isaac Schiff, chief of obstetrics and gynecology at Massachusetts General Hospital in Boston. Because women on hormone therapy appeared to have fewer cardiovascular problems, doctors concluded that hormones prevented heart disease. "It was a runaway train," Schiff says. "We lost the focus about what estrogens are really helpful for. And it's for symptom relief."

What they didn't realize is that the patients who took hormones were healthier than the general population—and significantly healthier than the women in the WHI study. In the first major observational study, the average body-mass index of the women subjects was 24, indicating a healthy weight; in the WHI study it was 28, indicating an unhealthy weight. The women in the first studies were also younger—and therefore less at risk for heart attacks—when they started taking hormones (about 51, the average age for the start of menopause).

Some critics blame the pharmaceutical industry. Doctors "let themselves be very manipulated by the drug companies," says Barbara Seaman, author of "The Greatest Experiment Ever Performed on Women," a history of hormone therapy. Seaman contends that doctors who accept pharmaceutical grant money or perks might have been more likely to overlook complications. Most doctors, of course, say that they were acting on the best available scientific evidence.

Over the next two years the NIH will continue to study the long-term effects of taking estrogen without progesterone; doctors speculate that estrogen alone might be safer. Meanwhile, one result of the furor is already clear: women and their doctors will no longer reach automatically for hormones at the first hot flash. "Pharmacotherapy is not your first choice," says Wulf Utian, executive director of the North American Menopause Society. "If she's smoking and she's overweight, her hot flashes may even decrease if she stops smoking or watches her diet and exercises."

As for heart attacks—which prompted so many women to start hormone therapy—WHI investigator JoAnn Manson of Harvard says that 80 percent of the risk can be eliminated through a healthy lifestyle. Others have tried natural remedies like black cohosh. Still, despite all the negative publicity, doctors continue to prescribe limited HRT (no more than three years) for patients who've tried other remedies and still suffer from debilitating hot flashes or other menopausal symptoms. For these patients, relief is worth the risk. ■

4 Hormones

About **9 million** women use hormones, down from **15 million** last year.

Into the Darkness Of the Mind

COMFORT: Friends at a Stuttgart treatment facility

BY ANNE UNDERWOOD

WHEN WAYNE Huizenga of Blockbuster fame bought the Miami Dolphins football team in 1994, he asked a trusted colleague to write the $127 million check: Gillian Bristol of Florida. Bristol handled financial matters for Huizenga for 26 years, until in early 2000 the math started giving her trouble—not arcane accounting problems, mind you, but simple addition and subtraction. Within months, she was diagnosed with Alzheimer's disease and spiraled rapidly downward. Then in August 2001, her husband, Richard, enrolled her in a clinical trial testing a combination of a U.S.-approved drug called Aricept and a European one known as memantine. Gillian finally began stabilizing and has not declined further in the past year. Is that the result of the drug combo or the unpredictable course of the disease? Doctors don't know. But with the trial long over, Richard continues to buy her both drugs.

In a year of steady progress against Alzheimer's, one of the most concrete developments was the release of data showing how effective this drug combination is. "Now finally we as doctors can tell family members that there is something we can do to slow the disease," says Dr. Barry Reisberg of New York University School of Medicine. And it comes none too soon. Already 12 million people have Alzheimer's worldwide. By 2050, the total could reach 45 million. Will we learn to treat or prevent the ailment in time to reduce that toll? Scientists are optimistic, citing potential new treatments and preventive measures.

The drug combination is a good start. While Aricept boosts low levels of a key brain chemical involved in memory, memantine protects neurons from excessive stimulation by a second brain chemical that can damage or even kill brain cells. But the drugs will not halt the disease. Nor will they address what many scientists see as the actual cause of Alzheimer's—excessive levels of a substance called A-beta, the major constituent of the amyloid plaques that clog patients' brains.

That's why many scientists are excited about the revival of vaccine trials against A-beta. Most people had assumed that the quest for a vaccine was dead two years ago, after 18 of 375 patients in a phase-two trial developed brain inflammation. But this fall the U.S. government cleared drugmakers Wyeth and Elan Corp. to test a safer, "passive" vaccine that delivers ready-made antibodies, without prodding the immune system to make its own. That should avoid the side effects of the earlier trial.

Anyone who's truly concerned about developing Alzheimer's can take a simple precaution: lose excess weight. A major Swedish study this summer found a striking association between obesity in women at age 70 and the risk of developing Alzheimer's 10 to 18 years later. For each one-point increase in body-mass index, the risk of dementia increased by 36 percent. "You don't have to be Twiggy," says epidemiologist Deborah Gustafson of the Medical College of Wisconsin, who worked on the study. "The women at greatest risk were clearly overweight." No one has a definitive explanation. But obesity is the leading risk factor for diabetes, and diabetes doubled the risk for Alzheimer's in two studies.

Now neurologist Dennis Selkoe and colleagues at Harvard Medical School may have figured out why. The link is an enzyme that breaks down both insulin and A-beta. This year the scientists showed that mice who were deficient in the enzyme failed to clear A-beta from their brains and also developed insulin resistance. Does the same thing happen in people? Pre-diabetic patients, trying to overcome insulin resistance, produce abnormally high levels of insulin. Perhaps the enzyme is drawn preferentially to the insulin, allowing A-beta to build up.

Either way, the key to controlling Alzheimer's is early intervention. "Waiting until a patient has Alzheimer's is like waiting for a heart attack to start treating cardiovascular disease," says Peter Lansbury of Harvard Medical School. With the looming caseload, new treatments can't come soon enough.

5 Alzheimer's
Two thirds of people with dementia live in the developing world.

PETER GRANSER—LAIF

The Next Wave of Antidepressants

BY MICHAEL C. MILLER, M.D.

IN HIS 1968 NOVEL "DO Androids Dream of Electric Sheep?" (which inspired the movie "Blade Runner"), Philip K. Dick introduced his hero fighting with his wife over what mood to be in. The couple, living in the dreary California of 2021, is fortunate enough to own a Penfield Mood Organ, a device that allows the user to dial up any desired state of mind. They spar over the wife's decision to schedule, twice a month, three hours of hopelessness and despair.

Would you want to manipulate your moods with such precision? If your hopelessness and despair were out of control, you probably would. As helpful as today's antidepressants are, about one third of depression sufferers get little or no relief from them. And because the causes of depression are still so poorly understood, it's hard to tell if an intervention is getting to the heart of the problem.

But the science is changing fast. Researchers are amassing new insights into the biology of depression. According to the new model, depression stems not from a "chemical imbalance" (too little serotonin, too little norepinephrine) but from unhealthy nerve-cell connections in the regions of the brain that create our emotions. If that's true—and the evidence is compelling—then the real goal of treatment is not to alter the brain's chemistry but to repair its blighted circuitry.

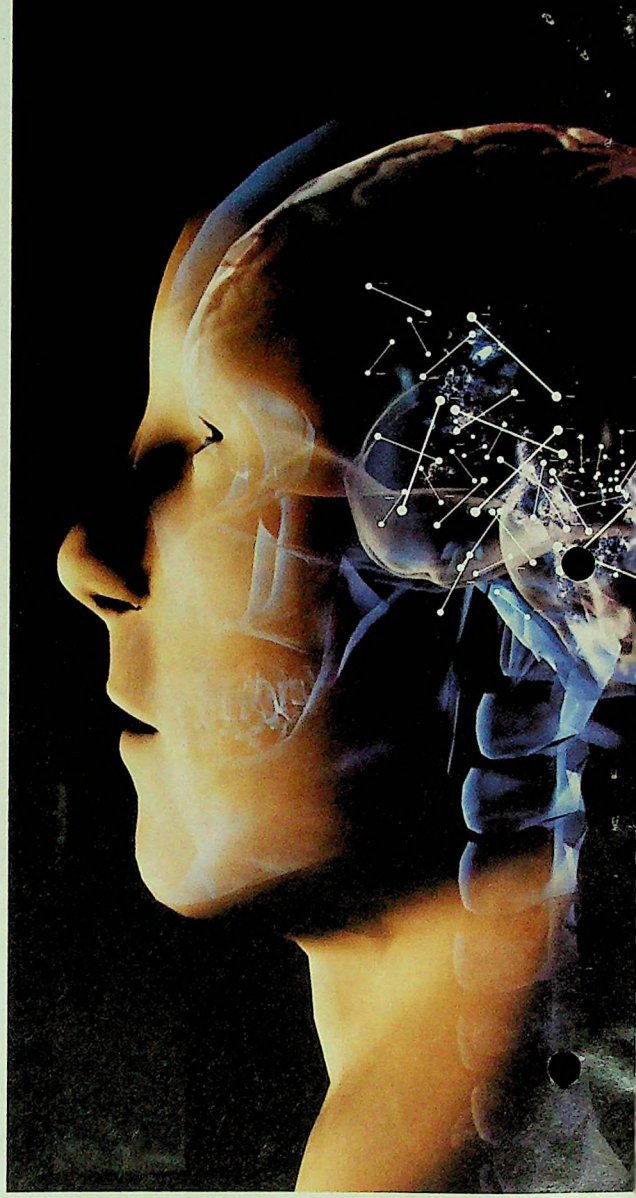
The new paradigm reflects a growing awareness of how chronic distress affects the brain. Our stress-hormone system, which kicks us into action in an emergency, may remain switched on in susceptible people, especially those who were very stressed during childhood. Overexposure to stress hormones slows the growth of nerve fibers in a region of the brain called the hippocampus. This brain center allows us to soak up sensory input, link experience to emotion and store all of it as coherent memories. The hippocampus is typically small in depressed people, with some brain cells lost and some shrunken.

The idea that depression is linked to stalled nerve-cell growth or faulty connections may explain an old mystery. If antidepressant medications boost neurotransmitter concentrations immediately (which they do), why does it often take six weeks or longer to feel better? Recent experiments in mice tell us that antidepressants stimulate the growth of new hippocampal nerve cells, which form connections with older nerve cells. This process takes several weeks. If drugs like Prozac ease depression by inadvertently boosting neurogenesis, the thinking goes, drugs designed specifically for that purpose might bring surer relief with fewer side effects.

That's a tall order, but researchers are already pursuing several strategies. One quest is to find a drug to block the action of Substance P, one of the chemical messengers involved in the stress response. Aprepitant, the first Substance P blocker to enter clinical trials, has recently proved worthless as an antidepressant. But other compounds are under study, and one of them may work.

A second possible target for therapy is CRH (corticotropin-releasing hormone), a chemical produced by the hypothalamus, a tiny part of the brain that integrates hormones with behavior. CRH starts a cascade that ends with the release into the bloodstream of the stress hormone cortisol. An experimental CRH blocker called R121919 can dampen the stress response, both in lab animals and in depressed patients, but it also damages the liver. Drugmakers are now developing other CRH blockers—and learning to manipulate still other parts of the stress response.

Drugs that suppress vasopressin—another hormone released under conditions of stress—leave rodents less anxious and more spirited. Drugs that mimic a stress-busting hormone called Neuropeptide Y have similar effects. They may also have the ability to reduce a mouse's desire for alcohol—pointing the way to a possible new biological model for alcoholism. Some experts believe these compounds are the



6 Depression
Over **121 million** people are affected by depression; less than 25% are treated.

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THE BATTLE TO RUN IRAQ • MESOPOTAMIA'S TREASURES

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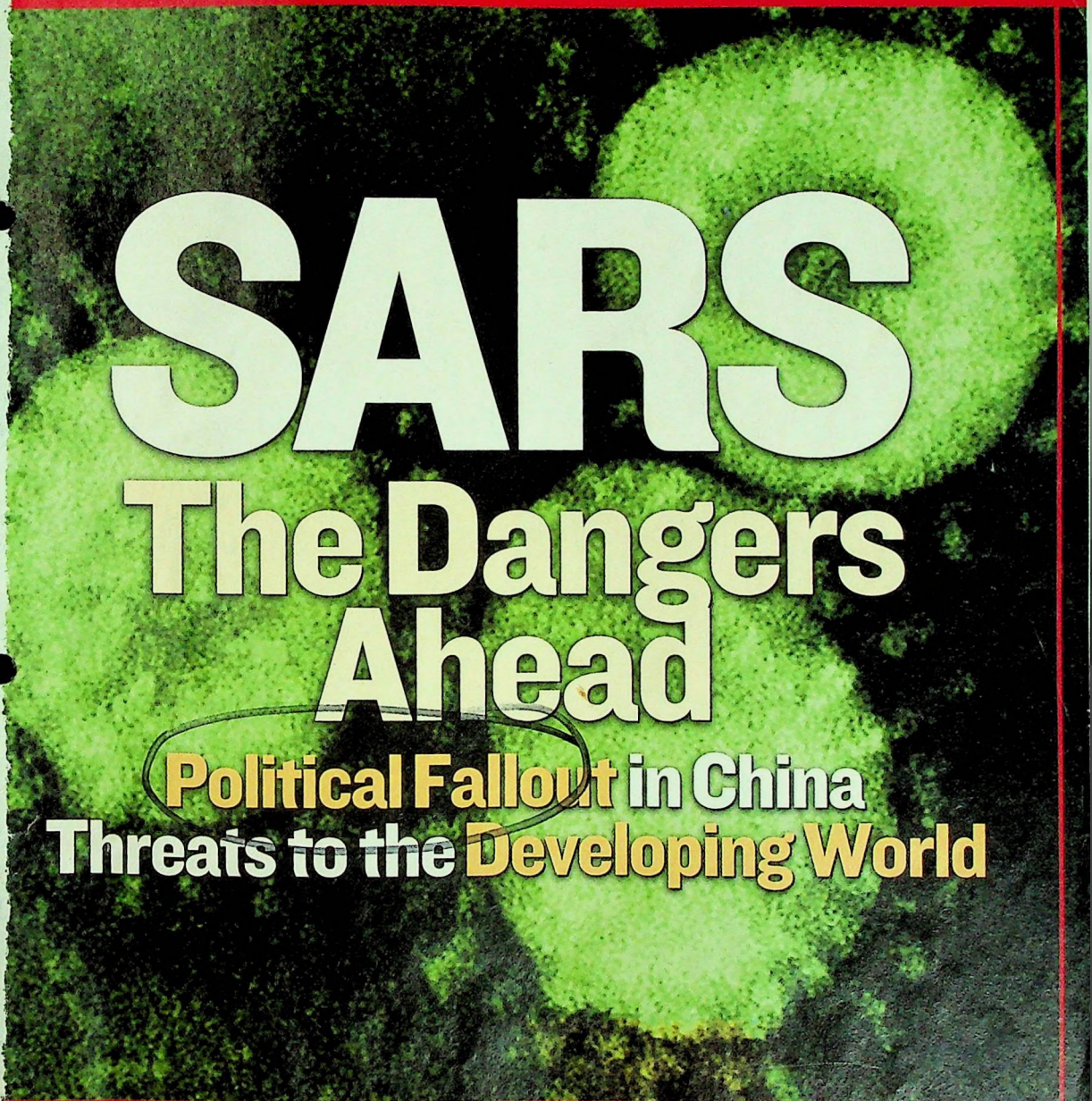

SARS
The Dangers Ahead
Political Fallout in China
Threats to the Developing World

Australia	A$5.50 (GST incl.)	Guam	US$3.95	Malaysia	RM9.90	Pakistan	Rs. 200.00
Bangladesh	Taka 85.00	Hong Kong	HK$37.00	Maldives	Rf. 55.00	P. New Guinea	K9.00
Brunei	B$7.00	India	Rs 75.00	Myanmar	K150	Philippines	P99.00
China	RMB 35.00	Indonesia	Rp 48,000 (PPN incl.)	Nepal	NRs 75.00	Singapore	S$7.00
				New Zealand	NZ$4.95 (GST incl.)		

Sri Lanka	Rs. 200.00
Taiwan	NT$ 120.00
Thailand	B 135.00
U.S. Forces	US$ 3.95

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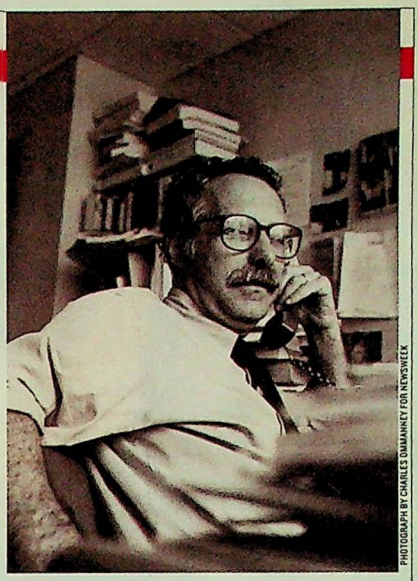
Welfare for Capitalists

BY ROBERT J. SAMUELSON



PHOTOGRAPH BY CHARLES O'MAHONEY FOR NEWSWEEK

THE SCANDAL OF CEO PAY IS NOT THAT IT ASCENDED TO stratospheric levels or that—despite some restraint—it's still unreasonably high. No, the genuine scandal is that few CEOs have publicly raised their voices in criticism and rebuke. They'll condemn many corporate practices (accounting standards, auditing procedures) that now seem suspect. But on their own pay, there's a widespread and self-serving silence. If they can't defend what they're doing, then maybe what they're doing is indefensible.

As everyone knows, CEOs—and a few other top executives—have been on a financial joy ride. From 1992 to 2001, the top five executives of the largest 1,500 U.S. companies made $67 billion in stock-option profits, report Joseph Blasi, Douglas Kruse and Aaron Bernstein, authors of "The Company of Owners: The Truth About Stock Options." Even if these gains were skewed toward a small group, typical compensation exploded. From 1993 to 2002, the median cash portion (annual salary, plus bonus) of CEO pay packages at 350 companies rose 53 percent to $1.8 million, says Mercer Human Resource Consulting. Including the value of long-term "incentives" (mainly stock options and stock awards), median CEO pay tripled, from $2 million in 1993 to $6 million in 2002. Over the same period, compensation for all workers rose only a third (all figures unadjusted for inflation).

Sprinkling so much money over so few people has created a sense of entitlement. The upper echelons of Corporate America have come to believe that they shouldn't simply do well. They deserve to become rich, perhaps fabulously so. Now, a flourishing capitalist system ought to bestow great fortunes on people who create huge enterprises or revive flagging old ones. But great fortunes should not routinely go to people who merely preside successfully over existing firms. The CEO conceit is that everyone near the top of the corporate staircase should become a multimillionaire several times over.

What this produces is a self-justifying set of rules and practices, reinforced by a growing insensitivity to appearances. Last week American Airlines was the latest company to suffer from this mind-set. The airline flirted with bankruptcy after disclosures that its top executives had received special pension protections, even while pilots, mechanics and flight attendants were agreeing to take pay and benefit cuts averaging about 23 percent. The contrast was too much for many workers. Flight attendants suspended their concessions and CEO Donald Carty was forced to resign.

American Airlines is just the latest example of CEOs' insensitivity to the appearance of entitlement in their excessive pay packages

Of course, let's be fair to CEOs. Though popular, CEO bashing is sometimes scapegoating—blaming all CEOs for the mistakes or sins of a few. Even Carty proposed cutting his base salary 33 percent to $543,453. But CEOs and corporate elites have partly brought this on themselves by not confronting the excesses of executive compensation. Ordinary people may not grasp the technicalities of accounting irregularities. But everyone understands pay.

Some will say that CEO pay is now being curbed. True, annual surveys by the business press (The Wall Street Journal, BusinessWeek and Fortune) show modest changes. A few CEOs are working for $1 or no salary; this surely reflects their existing wealth. The Mercer survey, done for the Journal, found that 50 CEOs out of 350 received no cash bonus for 2002. Given sagging profits and stock prices—and all the bad publicity—it would have been astonishing if nothing had changed. But the changes are mostly cosmetic and don't question or threaten the underlying nature of the CEO entitlement system.

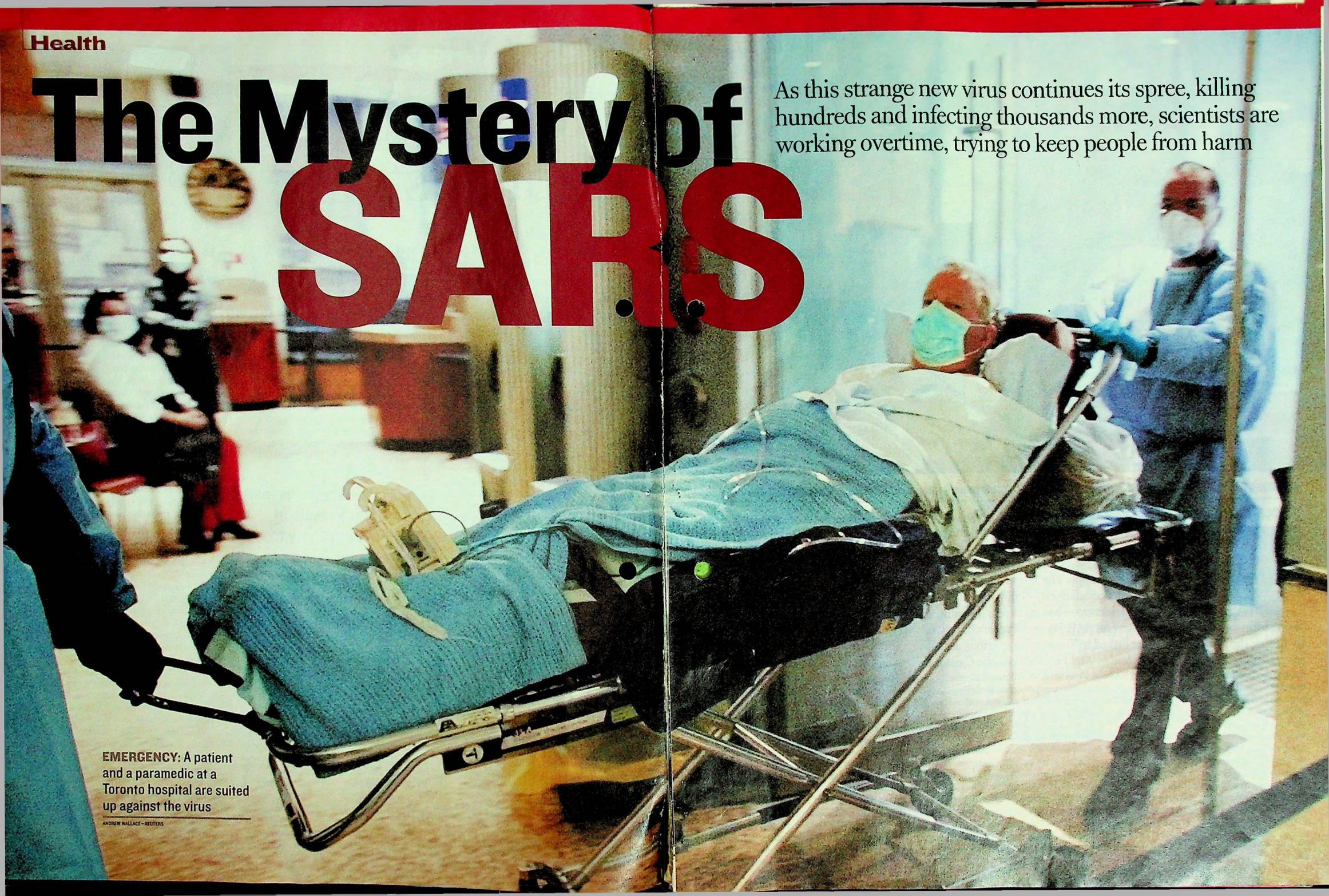
CEOs justify their compensation by saying they get what "the market" dictates, just like everyone else. Rubbish. Their market is highly artificial. CEOs match their pay with that of other CEOs, as revealed by surveys. But this comparison isn't especially relevant because other CEO jobs aren't open. A CEO dismissed today can't easily get a comparable job tomorrow. Compensation levels are what economists call "administered prices," set by corporate directors who are usually top executives or retired executives. The result is an artificial welfare system designed to ensure that even mediocre top executives do well—and everyone else receives repeated chances to make a fortune.

Corporate executives ought to be well paid. But wrong "incentives" are destructive. If underinvested in company stock, executives may have little interest in improving efficiency and profitability. But if overinvested, they may be tempted to stretch accounting rules to puff up profits and stock prices. Today's oversize compensation packages often hinder—as American Airlines reminds—everyday management by demoralizing workers.

What's the right compensation? This is not an easy question. But it's one that top executives should openly address. Defending what you're doing, in public and on paper, is a powerful moral and intellectual discipline. Until that happens, we'll find that pay follows two poor guides: executive greed and, once public anger produces new laws, popular prejudice.

The Mystery of SARS

As this strange new virus continues its spree, killing hundreds and infecting thousands more, scientists are working overtime, trying to keep people from harm



EMERGENCY: A patient and a paramedic at a Toronto hospital are suited up against the virus

ANDREW WALLACE—REUTERS

GLOBE-TROTTER: Fear of SARS prompts a Lufthansa crew to wear masks in the Hong Kong airport (above); the virus may have been born on a farm like this (above) in Guangzhou, China, where animals and people live close together

BY CLAUDIA KALB

TORONTO WAS A CITY ON EDGE LAST WEEK. PEOPLE walked the streets as they always do, families went out to dinner and the Blue Jays game on Friday night drew thousands. But nobody was happy. The World Health Organization had declared the Canadian city—known for its pristine parks and friendly residents—a hazard to public health, advising tourists not to visit after several SARS cases in other countries, including the Philippines, were linked to Toronto. In a furious attempt to reclaim the city's reputation, Mayor Mel Lastman praised Canadian health efforts and lashed out at the WHO. "Let me be clear," he told reporters. "It's safe to come to Toronto." But the alert had set off global alarms. A Toronto girls' soccer team, on its way to Pennsylvania for a much-anticipated exhibition match, was told it was no longer welcome. Player Katie Nizio, 16, had hoped to show off her skills and win a scholarship to college. "It was my one big chance," she says. "I was literally crushed."

From dashing the dreams of teenage athletes to forcing a stunning political fallout in China, severe acute respiratory syndrome, or SARS, is proving itself a formidable enemy at every level—medical, political, economic and even psychological. In Beijing, the government's Health minister and mayor were sacked, three hospitals shut down and 4,000 citizens suspected of exposure to the potentially fatal disease told to stay at home or in hospitals. A false alarm at San Francisco International Airport panicked travelers after a 50-year-old man suspected of having SARS was removed from a Northwest Airlines flight. In Hong Kong, only about 100 people turned up to ogle Qianlong porcelain at a Sotheby's cocktail party—the first major social event in weeks. The party normally draws hundreds in Manolos; last week's guests accessorized with paper masks.

In Britain, students returning to boarding school after spring break in Asia were quarantined in separate buildings or asked to spend an extra 10 days at home. Several dozen University of California students were called home from a study-abroad program in Beijing. A new Gallup poll reported that 43 percent of Americans are now worried about the disease—up one third from the week before. And in Los Angeles, politicians dined in Chinatown to counter rumors that you could get SARS from eating Asian food. Dr. Jonathan Fielding, the city's public-health director, made a point of eating wontons and chow mein at a press conference. "It's scarily reminiscent of the early days of AIDS," he says.

By late last week, there were more than 4,800 cases of SARS in 27 countries and 293 deaths—small numbers in the scheme of global threats. Many people couldn't help but wonder if health officials and the media were manufacturing hysteria over a microscopic bug, now that Iraq was no longer fodder for 24-hour cable news. But the insidious nature of the virus, its capacity to spread and kill, remained. And its lingering mysteries—how it's transmitted, why it's more virulent in some people than others, how it's best treated—have public-health experts discernibly worried and unapologetic for erring on the side of caution.

In the United States, where the tally of "suspect" and "probable" cases is fewer than 300, with no deaths, there was still concern: Could the epidemic spread further? Why hasn't it? How worried should we be? The medical battle is being fought on multiple fronts: doctors are trying to diagnose, treat and contain the virus. Scientists are launching seek-and-destroy missions in petri dishes. And public-health officials are mapping strategies for drug and vaccine development. As with any new enemy, victory will not come easily—or quickly. "This is still a work in progress," said Centers for Disease Control and Prevention director Julie Gerberding last week. "We have a lot to learn."

For an interactive guide to the symptoms and treatment of SARS, go to Newsweek.MSNBC.com

The quest to understand SARS starts in the lungs of victims like Dr. Henry Lik-yuen Chan, 34, who contracted the illness in the Hong Kong hospital where he works. Chan's first few days as a patient are a blur. He had high fevers and was racked with coughs. Taking a shower felt like running a marathon. A colleague who called Chan to see how he was doing cried when she heard his wheezing gasps for breath. On day 10, when chest X-rays showed fluid in his lungs, Chan thought he was going to die. Now, six weeks later, Chan is 10 pounds lighter, but recovered. He is lucky: early in the course of his illness, hospital officials insisted he check in for observation. That vigilance, a cocktail of drugs—including steroids, antibiotics and the antiviral Ribavirin—and a fighting spirit helped him through. "I am quite an aggressive person," Chan says. "That is why I was determined to conquer SARS."

L.A. POLITICIANS DINED IN CHINATOWN TO COUNTER RUMORS THAT YOU COULD GET SARS FROM EATING ASIAN FOOD

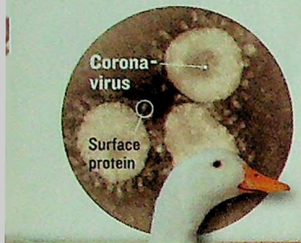
So, too, are the scientists. Thanks to technology and a spirit of global cooperation, the first genome of the virus that causes SARS was mapped by Canadian researchers in less than a week; soon after, it was identified as a coronavirus. Since then, more than a dozen sequences of the virus, decoded by labs from Singapore to Liverpool, have been posted on the WHO's Web site. All show slight differences in the string of about 30,000 bases that make up its blueprint, but researchers say that is not surprising. Coronaviruses are composed of single strands of genetic material called RNA, which has no built-in proofreading system to catch mistakes in replication. Every time the virus copies itself, it changes very slightly. "Coronaviruses mutate for a living," says virologist Mark Denison, of Vanderbilt University Medical Center.

LEFT TO RIGHT: PETER PARKS—AFP; PHOTOGRAPH BY MATTHIEU PALEY FOR NEWSWEEK

The New Bug

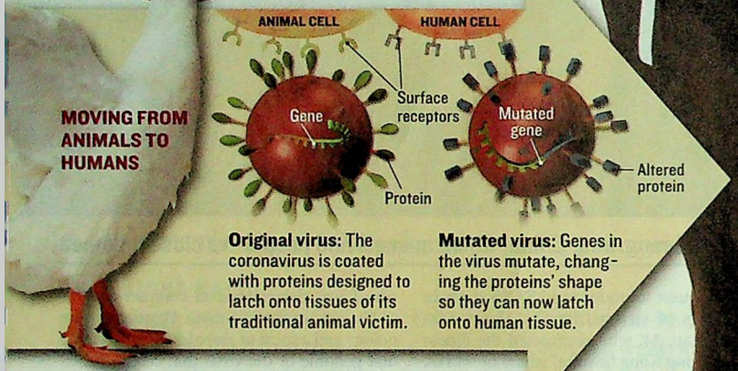
SARS is the first new deadly disease in years that can easily pass from person to person. Here's what you need to know about its science and how it spreads.

THE VIRUS BEHIND THE EPIDEMIC



■ **The bug:** Scientists think SARS is caused by a coronavirus, which is related to the virus behind the common cold.

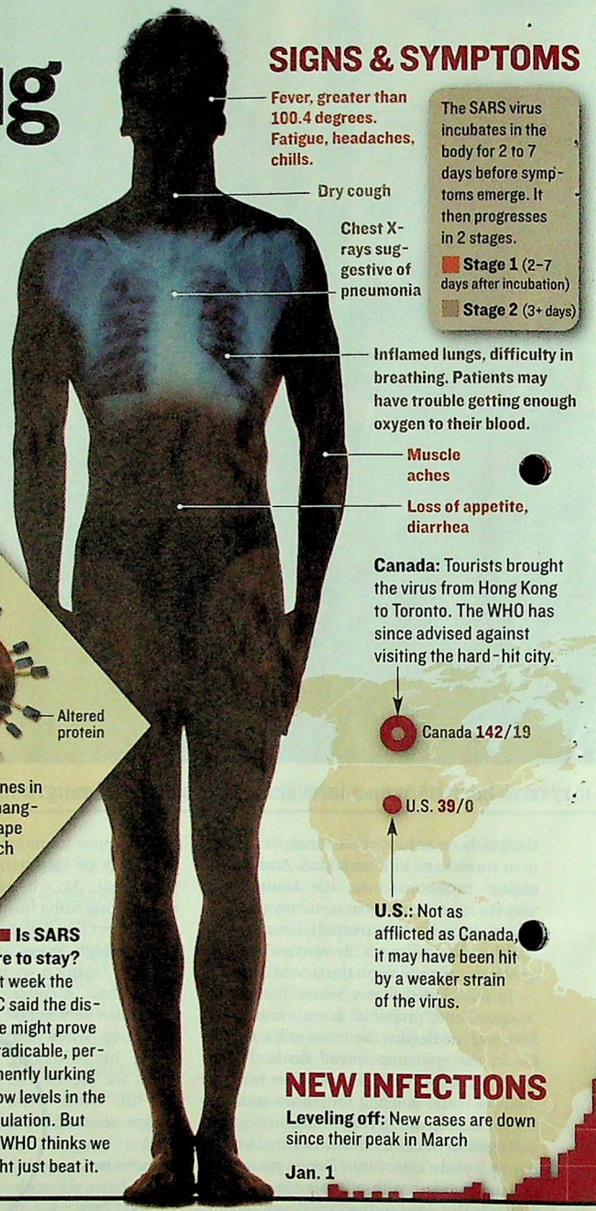
■ **The source:** The virus may have lived in livestock before jumping over to human victims. Here's how it could have switched hosts:



Original virus: The coronavirus is coated with proteins designed to latch onto tissues of its traditional animal victim.

Mutated virus: Genes in the virus mutate, changing the proteins' shape so they can now latch onto human tissue.

SIGNS & SYMPTOMS



The SARS virus incubates in the body for 2 to 7 days before symptoms emerge. It then progresses in 2 stages.

Stage 1 (2–7 days after incubation)

Stage 2 (3+ days)

Canada: Tourists brought the virus from Hong Kong to Toronto. The WHO has since advised against visiting the hard-hit city.

Canada 142/19

U.S. 39/0

U.S.: Not as afflicted as Canada, it may have been hit by a weaker strain of the virus.

THE UNKNOWNS

■ **What causes SARS?** The WHO points to the coronavirus, which was genetically sequenced three weeks ago. A few think other viruses may be involved.

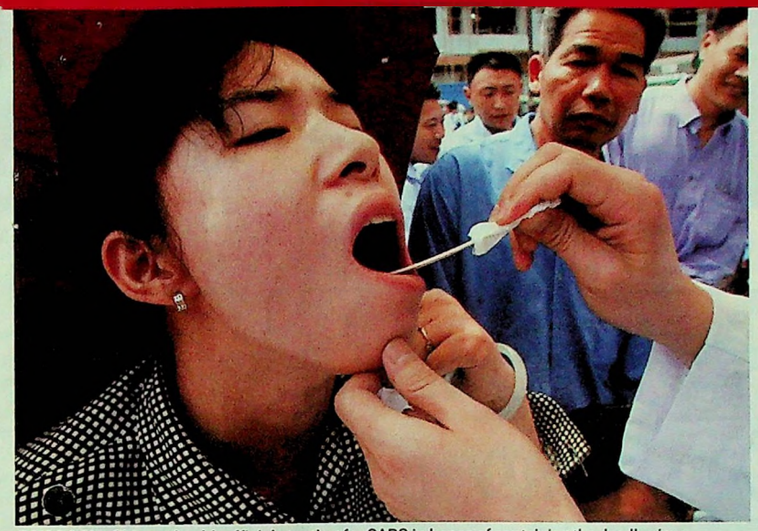
■ **Why is SARS fatal for some and just a bad cold for others?** The pathogen's genome varies, and some versions may be especially virulent. Or, the sickest patients may simply be those with already weak immune systems.

■ **How can we cure it?** For the moment, we can't. Doctors are testing antivirals and other compounds.

■ **Is SARS here to stay?** Last week the CDC said the disease might prove ineradicable, permanently lurking at low levels in the population. But the WHO thinks we might just beat it.

NEW INFECTIONS

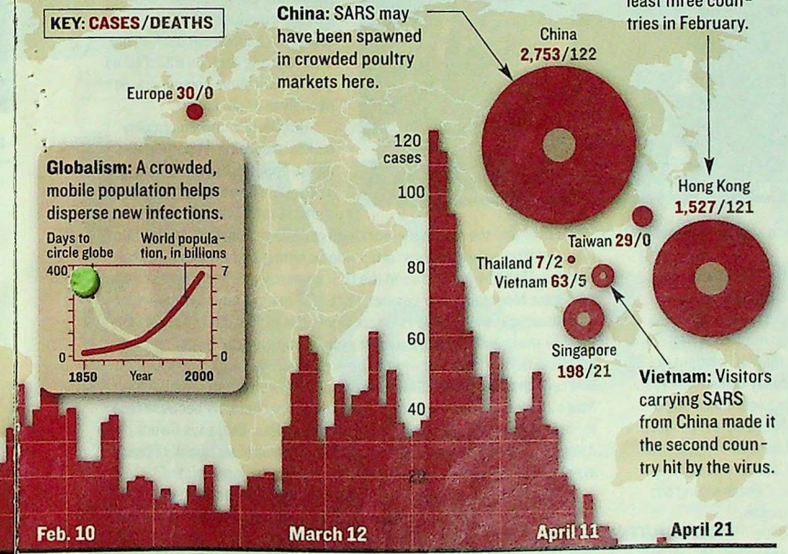
Leveling off: New cases are down since their peak in March



SAY AAAH: Chinese health officials testing for SARS in hopes of containing the deadly virus

TRACKING THE GLOBAL SPREAD

Emerging in rural China last November, SARS has gone on to infect almost 5,000 people on six continents. Here's how.



Hong Kong: Guests at a contaminated hotel carried the virus back to at least three countries in February.

China: SARS may have been spawned in crowded poultry markets here.

Vietnam: Visitors carrying SARS from China made it the second country hit by the virus.

Globalism: A crowded, mobile population helps disperse new infections.

The critical issue, then, is whether those mutations affect the severity of disease. So far, most people have recovered from SARS, but about 6 percent have died; researchers are desperate to know why. Scientists have learned from viruses such as the 1997 bird flu in China, which hopped to humans, that even a single change in the genetic code can mean the difference between a virus that sickens birds and one that can kill people. Experts suspect that the coronavirus mutations may explain why some people suffer more than others. But additional factors, such as the amount of virus in the body or a weakened immune system, could be to blame. And there may be different strains of SARS altogether—viral siblings in the same genetic family, born at different times as the bug spreads. "I'd bet a bottle of champagne that there are," says virologist Robert Webster of St. Jude Children's Research Hospital in Memphis, Tenn.

The chameleonlike quality of a coronavirus makes coming up with accurate diagnostic tools all the more challenging. Right now doctors must rely on a checklist of symptoms—fever, dry cough—a history of travel to SARS hot spots or close contact with patients and chest X-rays to spot the disease. Public-health officials use two main tests to confirm the diagnosis: a blood screening, which looks for evidence of antibodies to the virus, and a polymerase chain reaction (PCR) test, which searches for its genetic footprint in saliva or cough residues. Experts caution that existing tests may have either false positive or negative results, and they are working hard to refine them.

An accurate diagnosis might have spared Mark Van Camp, 49, of Wichita, Kans., a difficult welcome home from China. In March, after he and his wife returned from adopting a baby girl in Guangzhou, Van Camp became sick and was diagnosed as Kansas's first suspect case of SARS. Even after he recovered and doctors concluded he probably had a bad case of pneumonia, his day-care provider said she wouldn't be able to mind his kids. And when Van Camp ran into his former physician and his wife at a local restaurant, the couple moved to another table. "That's the fear factor of SARS," he says.

The fear is that we don't know exactly how the virus spreads. While it's clear that it jumps from person to person through airborne droplets—a sneeze or a cough—experts suspect it may be transmitted fecally as well. In Hong Kong, residents who contracted SARS in a housing complex, Amoy Gardens, suffered severe diarrhea, and experts found coronavirus in feces and on an infected resident's toilet. Health officials concluded that the pathogen spread at least in part through breaks in the building's sewer lines. Worldwide, experts are also working hard to determine how long the SARS virus survives in the environment—on countertops or door handles—and whether that might contribute to its spread.

Treatment is another puzzle. The illness is caused by a virus, rather than a bacterium, so antibiotics are ineffective. Hong Kong doctors are using the antiviral drug Ribavirin, often in combination with steroids, but U.S researchers say the drug has no effect on the SARS virus in a lab. At the United States Army Research Institute for Infectious Diseases in Frederick, Md., scientists are conducting a treasure hunt for treatment. Every few days, a shipment of drugs collected from the National Institutes of Health and drug manufacturers around the world is delivered to a team of virologists led by John Huggins and Peter Jahrling.

Clad in gloves and respirator masks, the team bombards the SARS virus in plastic trays with whatever it can get its hands on: antiviral medications on the market for diseases like HIV, herpes, flu and hepatitis; anti-cancer agents, anti-inflammatories and anti-asthmatics, and more than 1,000 other compounds, including experimental drugs like cysteine protease inhibitors, which block some viruses from replicating. So far some interferon drugs look promising in early testing, but the medication can cause severe side effects, like depression and muscle pain.

Scientists may have to develop a new antiviral drug altogether, and biotech companies are eager to try out their latest inventions. "Every day, I get 20 to 30 e-mails from biotech start-ups telling me why their drug would work," says WHO virologist Klaus Stöhr. The U.S. Department of Health and Human Services, meanwhile, is trying to lure vaccine manufacturers into the fight. Health Secretary Tommy Thompson held a recent meeting with Merck, Wyeth, Aventis Pasteur and other companies. About 70 people attended, including officials from the Depart-

PHOTOS, LEFT TO RIGHT: BRAND X PICTURES (DUCK), JIM GATHANY—CDC—CORBIS (VIRUS), LUIS ENRIQUE ASCUI—GETTY IMAGES (X-RAY), BRAND X PICTURES (MAN), REUTERS

SOURCES: CDC, WHO. DATA FOR INFECTIONS REPRESENT PROBABLE CASES. FIGURES AS OF APRIL 26.
TEXT AND REPORTING BY JOSH ULICK. GRAPHIC BY KARL GUDE AND TONIA COWAN—NEWSWEEK

ment of Defense. "The message clearly was, 'This isn't business as usual,'" says Dr. Bruce Gellin, director of the HHS's national-vaccine-program office.

With every step forward, new mysteries arise. Last week a Canadian virologist, Dr. Frank Plummer, questioned the link between the coronavirus and SARS altogether, announcing that he'd found evidence of the virus in only 40 percent of patients. The data are troubling, but other scientists say a number of factors could account for the finding, including weak or incomplete diagnostic tests. Halfway around the world in Hong Kong, doctors were reporting patients who tested positive for SARS—but had none of the classic symptoms. And then there's Sam Sun, a third-year law student in Beijing, who was cooped up in his dorm room after classes were canceled last week. "I'm worried," he said. "I don't know when this will end." The fact is, SARS may never be vanquished, but its lessons are preparing scientists for whatever comes next.

With ANNE UNDERWOOD, ANNA KUCHMENT and DEBRA ROSENBERG, ALEXANDRA A. SENO in Hong Kong, SARAH SCHAFER in Beijing, STEFAN THEIL in Geneva, BARRY BROWN in Toronto, DALIA MARTINEZ in London, NADINE JOSEPH and JULIE SCELFO

FINANCE

As scientists track mortality rates, analysts assess a different kind of casualty: international business and tourism

Economies on Empty

BY MARY CARMICHAEL

PHOTOGRAPH BY CHIEN-CHI CHANG—MAGNUM PHOTOS FOR NEWSWEEK

WIDE OPEN: Chiang Kai-shek International Airport in Taiwan

By now, everyone knows the early signs of SARS are high fever and a dry cough. But there's a second set of symptoms: canceled business trips, the collapse of tourism and falling stock prices. SARS (and fear of the mysterious disease) has already infected economies in Asia and Canada. Now U.S. markets are starting to look a little sickly, too. Last week analysts here blamed SARS for both a domestic stock slump and the airline industry's most recent woes. That's got economists pondering the kinds of questions doctors usually worry about: how far will this contagion spread, and what will be its final toll?

In Asia, where tourism can account for as much as 9 percent of a country's gross domestic product, companies and families alike are canceling travel plans and locals are staying home. Hotels and restaurants in Hong Kong and Singapore now regularly go more than half empty, if they're open at all; analysts estimate that more than 40 percent of China's annual $67 billion in tourism-related income may be lost this year. Food prices across Asia have tumbled as restaurants cut down on purchase orders, leaving the region's farmers and fishing fleets high and dry. The only luxury goods flying off shelves are fake Louis Vuitton surgical masks. "It's pretty clear the Chinese economy will shrink this quarter," says chief economist Mark Zandi of Economy.com. "That's taking out a growth engine for the entire global economy." Morgan Stanley chief economist Stephen Roach has pared his forecast for global economic growth down to 2.4 percent; 2.5 is the Rubicon for worldwide recession.

On Friday, the Federal Reserve acknowledged that economic troubles abroad were starting to cause ripple effects at home. The U.S. stock market, already weakened by war and winter weather, slid even further last week as the chairman of American International Group, the world's largest insurer, said that SARS fears were behind weakening sales in Hong Kong and China. The Air Transport Association reported that transpacific travel was down 40 percent compared with this time last year. Chinatowns in San Francisco and other cities became ghost towns. All this without a single American death.

Despite these developments, SARS isn't likely to be lethal to the U.S. economy. In fact, it might even have an upside. If fewer firms invest in China, says Diane Swonk, chief economist of Bank One Corp., that's not necessarily a bad thing. "Everyone says China is the new Asian tiger, but it's lacking in infrastructure," she notes. "Maybe this will puncture the hype—and bring that investment back to the U.S." Cutting back on travel could also benefit some companies, especially in tough times.

But SARS's unpredictability makes assessing its potential economic impact difficult. So far, most projections have assumed that the United States will stay relatively SARS-free and the rest of the world will get things under control by late May. But if those predictions turn out to be wrong and a major outbreak hits, say, Orlando, it could send the U.S. economy plunging faster than the Space Mountain roller coaster. For SARS to have any real impact on GDP, though, it would have to cause a collapse in tourism to almost all parts of the United States, and that's never happened before. The upshot: no one in the world knows what to base predictions on. Last week a London consultancy claimed SARS would have an even greater impact than Asia's 1998 currency-devaluation meltdown, particularly because face-to-face contact is a cornerstone of Asian business. But, says Swonk, "the Asian financial crisis was the result of years of overinvestment, of building skyscrapers with nobody in them. This is much more isolated."

If SARS's major economic effects do remain limited to Asia, it'll largely be due to smart thinking by national governments. Most of Asia moved quickly to curb the virus's spread, and China is taking big steps now to make up for lost time (more than 4,000 are quarantined in Beijing alone). Ailing Asian economies are also getting heavy doses of medicine, including a $1.5 billion relief package for local businesses announced by the Hong Kong government last week. Throwing big bucks around will help, but the only sure cure will be to control the disease.

With DANIEL MCGINN and STEFAN THEIL

LEADING INDICATORS

$11 Amount SARS has cost Asia, in billions

40% Drop in transpacific travel on U.S. airlines

80% Singapore and Hong Kong hotel-vacancy rate

2.4% New projection of world economic growth

SAFETY FIRST: In Taipei, a young girl takes care to escape infection as she walks to her elementary school

How Progress Makes Us Sick

Advances that make life more comfortable can also make it more dangerous

BY GEOFFREY COWLEY

SARS MAY HAVE DOMINATED the headlines last week, but it wasn't the only weird disease on the World Health Organization's radar screen. In central Africa, an outbreak of the dreaded Ebola fever had stretched into its fifth month. In Belgium and the Netherlands, a virulent new strain of avian flu was wiping out entire chicken farms. Dutch farmers recently slaughtered 18 million birds in hopes of stopping the outbreak. Yet the bird flu has spread to several provinces and jumped from poultry to pigs and even people, causing 83 human cases. Most of the infected people have suffered only eye inflammation, but some have developed respiratory illness. One of them, a 57-year-old veterinary surgeon, recently died of pneumonia. "Bird flu virus was ... found in the lungs," according to an April 19 statement from the Dutch Agriculture Ministry, "and no other cause of death could be detected." Sound familiar?

SARS. Ebola. Avian flu. The parade of frightening new maladies continues, each one confirming that our species, for all its cleverness, still lives at the mercy of the microbe. It didn't seem that way 30 years ago—not with smallpox largely defeated, AIDS still undreamed of and medical science evolving at an unprecedented clip. But even as optimists proclaimed victory over the germ, our megacities, factory farms, jet planes and blood banks were opening broad new avenues for infection. The dark

PHOTOGRAPH BY CHIEN-CHI CHANG—MAGNUM PHOTOS FOR NEWSWEEK

THE SHIITES

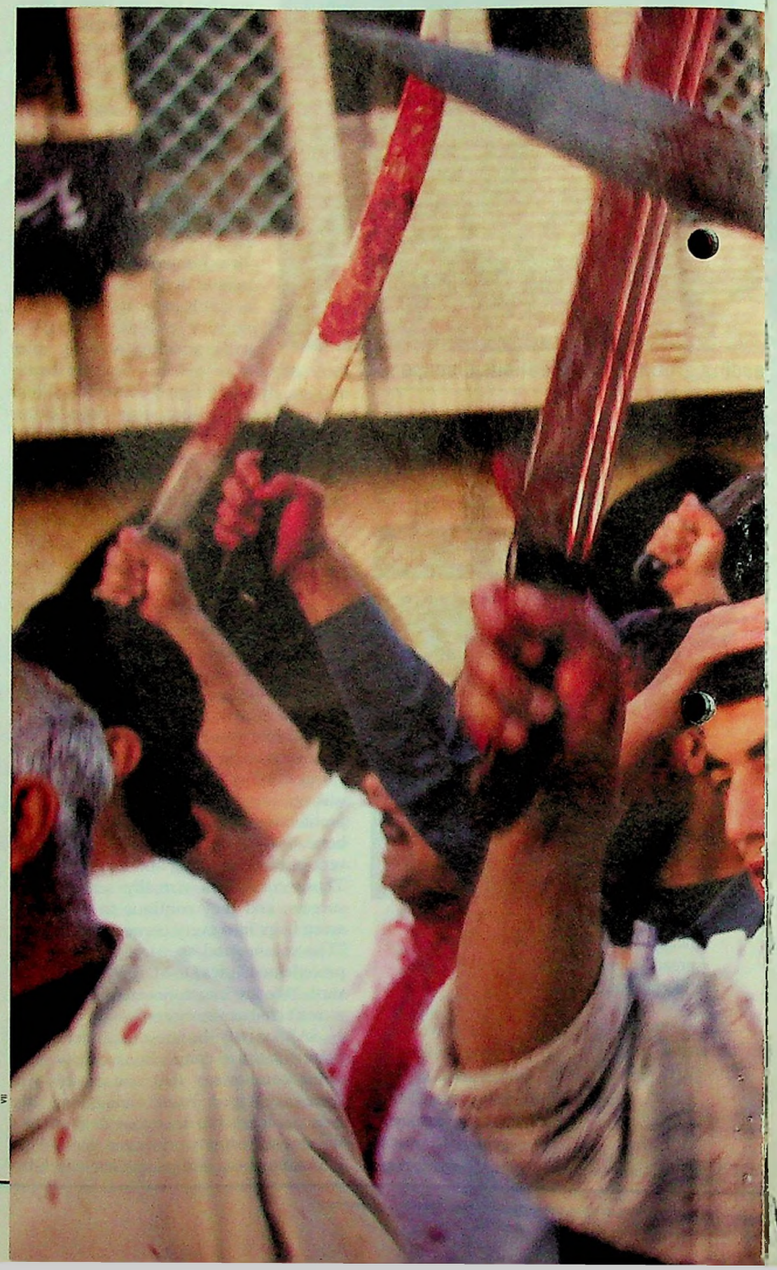
Already, a subtle shift in power is underway in the Muslim Middle East. And just about everyone has a reason to be nervous.

BY BABAK DEHGHANPISHEH AND CHRISTOPHER DICKEY

KHALED ABDULLAH WAITED 23 years for this moment. The 43-year-old Iraqi climbed a flight of stairs last week and gazed ecstatically on the golden dome of Shiite Islam's holiest shrine, the tomb of Imam Hussein in Karbala. He closed his eyes, turned his palms toward the sky and gave a prayer of thanks.

In the streets below, throngs of Shiites were celebrating the festival of Arbaeen with ancient rituals of penance and devotion. Chanting men and a few black-shrouded women pounded their chests, while drummers filled the air with deafening rhythm. Other men circled the shrine, flogging themselves with heavy chains. Youths, dusty and bleeding, crept on hands and knees toward the shrine's golden archway. Inside, other young men with shaved heads slashed their own scalps with ceremonial daggers. Attendants bandaged the wounds of some; others were half-carried onto donkey carts outside to be paraded around the courtyard in their bloodstained white shirts.

Abdullah was glad to be home. He had been living in Persian Iran since 1980, when he fled the Iraqi dictatorship. He has made a comfortable income selling cloth in Tehran's main bazaar, but he hasn't been happy. "The Iranians are racist," he says. "They don't respect Arabs." At the bazaar his Persian neighbors sometimes snubbed him when he said good morning. Some cloth suppliers wouldn't deal with him. Once a cabdriver refused to let him ride after hearing Abdullah's Iraqi accent. The



RAPTURES OF PENANCE: Shiite pilgrims in Karbala celebrate the festival of Arbaeen

PHOTOGRAPH BY ROH HAVIV FOR NEWSWEEK

More an Actor Than a Leader

WHEN I MET YASIR ARAFAT FOR THE FIRST TIME, IN 1996, I was struck by the contrast between his revolutionary appearance—with his uniform and his gun—and his soft-spoken manner. That hasn't changed. He has a fragile, seemingly helpless physical appearance, but according to Israeli intelligence files he's a corrupt terrorist. I watched him through the gun sights for 20 years, and then spent time with him around negotiating tables at Camp David and elsewhere. I gradually found him to be a sophisticated manipulator, more an actor than a leader, holding a mirror and a weather vane to find his way, rather than a compass.

THIMOTHY JACOBSEN—GETTY IMAGES

NOT LEADING: Barak, Clinton and Arafat

Arafat is a man of the past. Yes, the Palestinian crowds still cheer for him, and the struggle that preceded the formation of Abu Mazen's government shows that he still retains power. He remains a living symbol of the Palestinian national movement. But since the attacks of September 11, 2001, and the war in Iraq, a new chapter in Middle East history has been opened, and it has no natural place for him. Hence, within a year or two, I believe, Chairman Arafat will begin his march into history. He has failed to rise to the challenge of historic leadership, and has thus become a source of tragedy for his own people.

Last week's release of the Roadmap is a demanding, and potentially damaging, challenge to Arafat. It was launched only after Arafat was coerced into accepting the executive triumvirate of Abu Mazen (whose formal name is Mahmoud Abbas), Muhammad Dahlan and Salam Fayad. Abu Mazen, the Palestinian prime minister, will deprive Arafat of some executive power. Dahlan, the minister of internal security, is supposed to crack down on Hamas and Islamic Jihad as well as on Arafat's own Aqsa Martyrs Brigades. And Fayad, the Finance minister, will try to find the Palestinian money that's trickled into the private accounts of Palestinian leaders, and to establish new, transparent and accountable institutions.

They will not have an easy time, mostly because it's not in Arafat's interest for them to succeed. If they implement reforms and move toward reconciliation with Israel, honest Palestinians might wonder who was responsible for the thousands of Palestinian lives that have been lost in a vain attempt to dictate a political solution to Israel through homicidal bombings. As long as Arafat holds power, there will be no Israeli-Palestinian peace. Orwellian double-speak and treachery will prevail.

Chairman Arafat has failed to rise to the challenge of historic leadership, and has thus become a source of tragedy for his own people

The Israeli-Palestinian peace process is a painful divorce that should be executed for the benefit of both sides. Israel should give the Roadmap a fair chance to succeed. Illegal settlement outposts should be dismantled. The rule of law should be followed by all. Ways should be found to ease daily life for Palestinians. If and when the Palestinians launch a coherent and determined crackdown on all terror groups, then Israel will have to use common sense and not let a single attack stop the peace process. But we're not yet there. And Israel cannot be expected to step forward before statements turn into action on the Palestinian side. The opportunity is here, but the challenge is immense.

There have been opportunities before—as the late Israeli foreign minister Abba Eban used to say, "The Palestinian leadership has never missed an opportunity to miss an opportunity." The Israeli-Palestinian conflict, I once told Arafat, is one of the most complicated conflicts on earth, and it won't be solved unless human beings are ready to make decisions and put an end to it. We happen to be the human beings in charge, I added, and the price of our failure will be the loss of thousands of innocent lives on both sides before our successors return to the negotiating table to solve exactly the same issues. Yet in July 2001, Arafat rejected the Camp David proposal as a basis for negotiation and deliberately turned to terror.

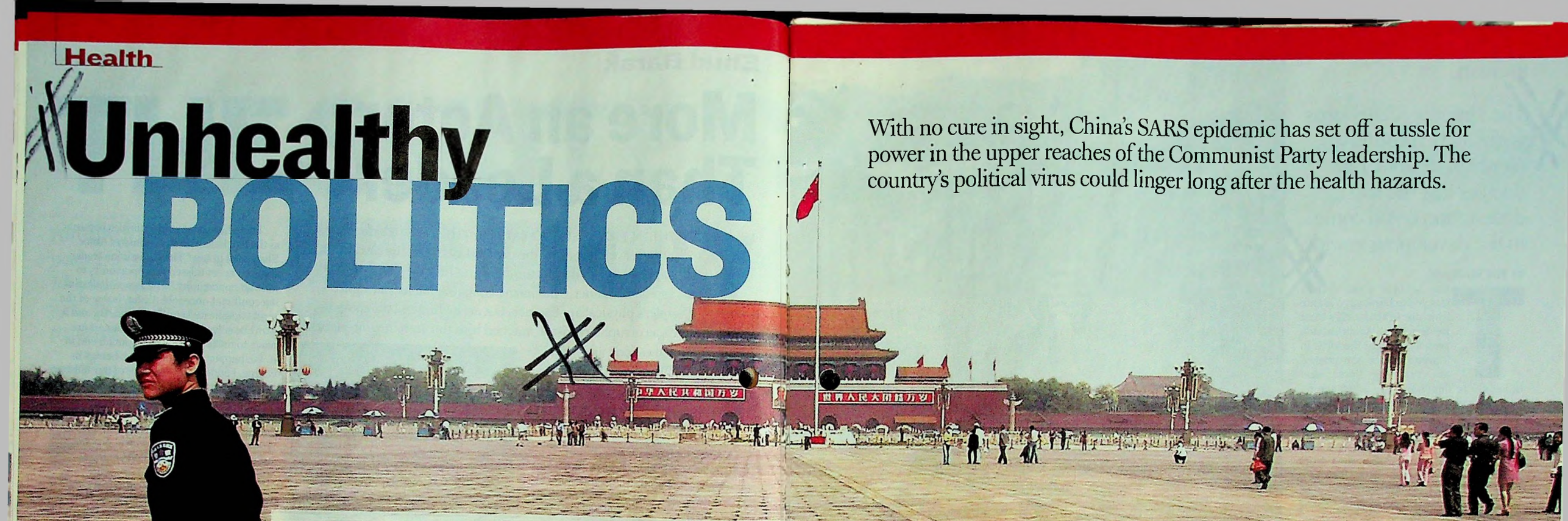
Last week President Bush, addressing the American people from an aircraft carrier, said that whoever commits terrorist acts, or supports or harbors those who do, is the enemy of the United States. No one better fits those descriptions than Arafat. He has engendered hatred in a generation of Palestinians, poisoned the souls of millions of young Arabs and Muslims around the world. But beyond that, he represents a failure of character and leadership. If the Palestinians had a leader like Egypt's Anwar Sadat or Jordan's King Hussein, we would have had peace by now.

At decisive moments leadership is about moving against the stream, asking yourself not what the people want right now, but rather what the people need in the long term and what should be done about it now. It's not easy: leadership has its risks. You might lose your office, like Mikhail Gorbachev. You can even lose your life, as happened to Sadat, Yitzhak Rabin and Abraham Lincoln. But when leaders aren't ready to lead, many other people have to pay the price. That is the failure of Arafat.

BARAK was Israel's prime minister from 1999 to 2001.

Unhealthy POLITICS

With no cure in sight, China's SARS epidemic has set off a tussle for power in the upper reaches of the Communist Party leadership. The country's political virus could linger long after the health hazards.



BY RODERICK MACFARQUHAR

CHINA'S SARS EPIDEMIC has its Communist Party leaders on their heels. Not since the 1989 student uprising in Tiananmen Square has its leadership been so exposed to the humiliating glare of international scrutiny and criticism. The cancellation of prestigious conferences in the capital and the potentially precipitous drop in foreign trade and investment as foreigners obey the World Health Organization's advisory to shun Beijing are embarrassing enough. Worse is the image of China's leaders behaving in feckless fashion, putting politics before people.

The leadership's perennial obsession with secrecy led it to prevaricate about the extent of the disease in the capital for five months. The rationale seems to have been a desire to avoid public panic during the passing of the torch to new leaders at the Party Congress last November and the National People's Congress in March. But in truth, the party has always carried the "hear no evil, see no evil, speak no evil" policy—preferred by bureaucrats everywhere—to extraordinary lengths. The assignment of the 2008 Olympic Games to Beijing augured for many China's arrival in the modern world. But the SARS epidemic has revealed the early-20th-century Leninist paranoia that still infects the behavior of China's leaders, and the Third World nation that lingers behind the glittering skyscrapers of Beijing and Shanghai.

The public-health crisis is also beginning to pull back the curtain that hides the divisions within the party itself. Clearly, the honeymoon is over for the new leaders, President Hu Jintao and Premier Wen Jiabao. Whether praise for the energetic measures they have taken to contain the epidemic ultimately outweighs blame for concealing it will doubtlessly depend on the human toll SARS exacts. The public-relations battle will be fought out partly through the ubiquitous urban Residents' Committees, the asphalt-level apparatus through which the party confronts its subjects. But for China's leaders the popular mood will be of less consequence than the factional struggle within the party.

When Hu took over in March, he did not inherit the full panoply of China's leadership posts. His predecessor, Jiang Zemin, retained the key chairmanship of the party's Central Military Commission. Jiang also seeded a significant number of his "Shanghai faction" in the ranks of the new Politburo, orchestrated by his main trusty, Vice President Zeng Qinghong, a brilliant political operator. At the time Jiang gave every appearance of leaving office reluctantly, and having bowed to necessity he seems determined that his faction should preserve his legacy in the people's eyes as the third member in an apostolic succession—Mao, Deng and Jiang.

GUANG NIU—REUTERS

Today, when every Chinese leader is of a reformist bent, the endemic factionalism in the leadership appears to be driven more by personality than policy. Most Western observers assumed that power plays between Hu and Jiang would begin in earnest in several years when Hu began to lay the groundwork for a second term. The SARS epidemic could be the catalyst for the struggle to begin now. As the senior civilian overseeing the military, Jiang has ultimate responsibility over the capital's military hospitals. The military's initial refusal to reveal the number of their SARS cases led to China's international humiliation when the full extent of the epidemic in Beijing was finally revealed. Was Jiang kept ignorant or was he trying to protect his power base from external interference?

Most party officials would probably like the military made subservient to the civilian bureaucracy and deprived of its special relationship to Jiang. The military's insubordination in the early stages of the crisis may be an opportunity for Hu to whittle away Jiang's power base. But he is proceeding cautiously. One of the two principal scapegoats so far, the minister of Health, was certainly a Jiang protégé, but the other, the mayor of Beijing, was one of Hu's men—almost certainly a sacrifice to prevent a backlash from Jiang loyalists. And significantly, the more powerful Beijing official, the party's first secretary—also of Jiang's clique—escaped with only a public self-criticism. Hu cannot go too far too fast.

MAY DAY: Tiananmen Square was eerily empty during the workers' holiday, save for a few police (inset)

—FREDERIC J. BROWN—AFP

But he is not entirely alone either. Hu has found a potent ally in Wen Jiabao, a protégé of Jiang's former political opponent, Zhu Rongji. Indeed, Hu appears to be exploiting the moment to employ a number of officials from Zhu's circle. Known as the "Iron Lady," Vice Premier Wu Yi—the highest-ranking woman in the government—was appointed last week as chief of the leadership team overseeing the battle against the deadly virus. And Wang Qishan, also a longtime Zhu protégé, is now serving as the acting mayor of Beijing.

For their part, Jiang and his frontman, Zeng Qinghong, know it would be fatal to seem to be endangering the anti-SARS campaign in the interests of scoring political points. So, much will depend on the success of the campaign. If SARS is quickly contained, the position of Hu and Wen will be greatly strengthened. It is hoped they might be emboldened to experiment with greater transparency in other spheres of public life. But if the epidemic spreads through large parts of the country and primitive rural medical care proves unable to cope, then Jiang could point out that the epidemic burgeoned only after Hu took over the party. Either way, the political virus unleashed by China's SARS crisis may persist longer than the health hazards.

MACFARQUHAR is the Leroy B. Williams Professor of History and Political Science at Harvard University.

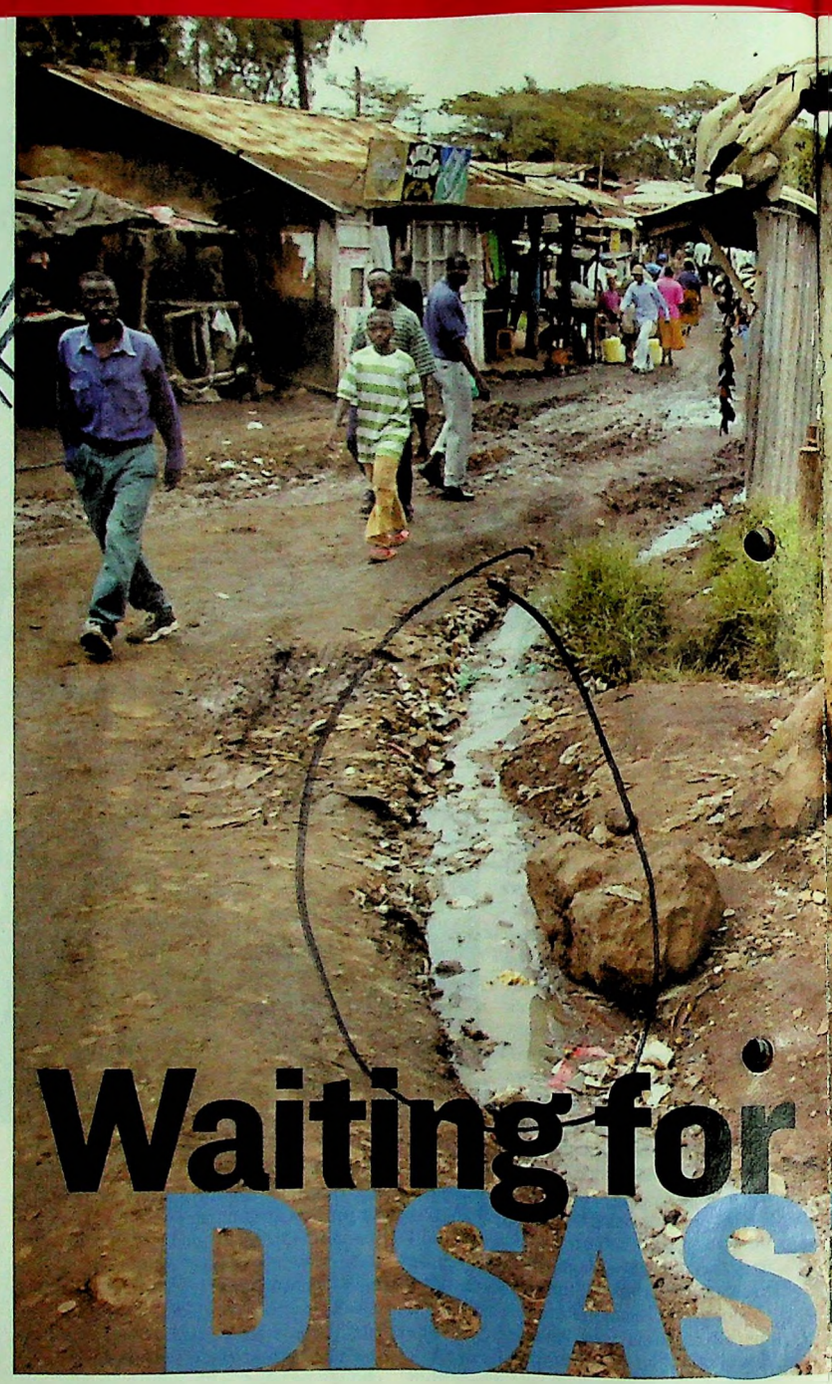
Waiting for DISASTER

The slippery SARS virus is giving rich countries plenty of trouble. But doctors fear the real devastation could come in the developing world.

BY TOM MASLAND

THE KILLER SARS VIRUS traveled to Barangay Vacante from one of the world's most modern cities. Adela Catalon probably caught the virus in Toronto, where she worked at a nursing home, and brought it to the Philippines when she returned to care for her ailing father. She visited three provinces before falling fatally ill. Her father, Mauricio, whose immune system had already been weakened by a bout with abdominal cancer, also died from SARS. Police ordered 210 Barangay Vacante residents to stay home, and local health officials went door-to-door twice a day to check up on them. That didn't stop some residents from slipping away on foot to shop in the nearby market town of Alcala. To persuade them to stay put, the government rushed in dried fish, rice and canned goods.

Such are the simple tools deployed against severe acute respiratory syndrome in the so-called developing world. Even rich countries haven't exactly produced a lightning victory against the disease. Last week, just as the World Health Organization lifted its travel advisory for Toronto, Canadian health officials announced two new cases. And scientists in Hong Kong raised the frightening possibility that patients who have already recovered from the disease may still infect others. What if SARS holds another punch for the world's poorest countries?



VULNERABLE: Health clinics in the Kibera slums of Nairobi aren't ready for SARS

The prospect has health experts in South Asia and Africa, in particular, on edge. So far India has kept its 19 mild cases from turning into an epidemic, and only one case has cropped up in Africa. With the disease on the wane in Vietnam and leveling off in Bangkok, it's possible that SARS won't become a pandemic. But it's far from a sure thing. The epidemic is still raging in China, only a plane ride away from vast populations of vulnerable people. Thirty million HIV-infected Africans, who have compromised immune systems, are sitting ducks for the disease, warned Luc Montagnier, one of the discoverers of the AIDS virus. Millions more people sick with malaria, hepatitis and bilharzia are similarly at risk. A recent report from the World Health Organization sounds an ominous note: "Nearly two thirds of all the patients who die in all age groups already suffered from chronic diseases." Dr. Alfred Jumba, who works in the eight-bed Vipawa Medical Center, one of the main health-care facilities in the teeming Nairobi slum of Kibera, says, "This is potentially devastating."

The Philippines is better off than many developing countries, but it is hard-pressed to defend itself against SARS. Unlike Hong Kong, which has erected virtual holiday camps for its SARS victims, or Singapore, which has installed video cameras to police urban areas, it makes do with the 2 percent of its annual budget that goes to health care. Officials say they can't afford to buy gloves and masks for nurses. The Philippines' trade minister said last week that the country has run out of N95 face masks. "We are hoping that the WHO will help us out," says Dr. Troy Gepte, a government spokesman. People are turning to home preventions like papayas and ginger-and-garlic infusions.

Indian health officials have even more cause to be jittery. None of the country's 19 SARS victims so far has died. But with a billion people crammed together, a fifth of them in megacities like Mumbai and New Delhi, the Subcontinent is ripe for a SARS epidemic. Only a quarter of all Indians have toilets; SARS, scientists suspect, can be spread by feces. A major outbreak of SARS

PHOTOGRAPH BY SVEN TORFINN FOR NEWSWEEK

WARY: Taking temperatures in Manila (above, left), lecturing on SARS in India

would overwhelm India's health-care system. The country has fewer than five physicians per 1,000 people and one small community health center for every 80,000 people. The government's drive to promote family planning has starved other health services of funds. "The danger is extremely great," says Ghanshyan Shah of Delhi's Jawaharlal Nehru University. "Over time the health system has become weaker and weaker."

Because most Indians aren't covered by health insurance, many may wait too long before reporting to the rudimentary health clinics serving rural areas. India's plan to use airports as a first line of defense doesn't inspire confidence either. Although all arriving passengers are required to fill in questionnaires, many say they haven't been asked any questions once they've landed.

African health officials cast a worried eye toward India. Here's their nightmare scenario: An expatriate Indian from Nairobi returns to Mumbai, where some SARS patients live, for a visit. He comes home and infects his housemaid. She in turn spreads the virus to Kibera, Kenya's largest slum. There, working in shacks with signboards out front, local staff are trained to diagnose familiar diseases like flu or malaria—but not SARS.

Whatever the route might be, Africa lacks the ability to fight SARS. Suspected carriers should be quarantined, and victims need an intensive-care unit and an isolation ward, equipped with respirators and staffed by specialists trained in so-called barrier nursing. But even in Kenya, one of Africa's best developed countries, only 10 respirators are available for isolation rooms. Ghana, another well-off African country, is equally at risk. "In the whole of Ghana there are only a few isolation units with respirators," says Dr. Peter Ottengraf, who works in the capital, Accra.

The presence of HIV makes the situation potentially catastrophic. Most AIDS patients in South Africa, which has the world's highest incidence of the disease, go untreated. State hospitals are overwhelmed with tuberculosis patients, many weakened by AIDS. "We are already living a nightmare here," says Dr. Steve Andrews, a Cape Town AIDS specialist. "Six hundred people are dying each day from AIDS in South Africa, but if SARS comes into a community, it may be as bad as the 1918 influenza outbreak."

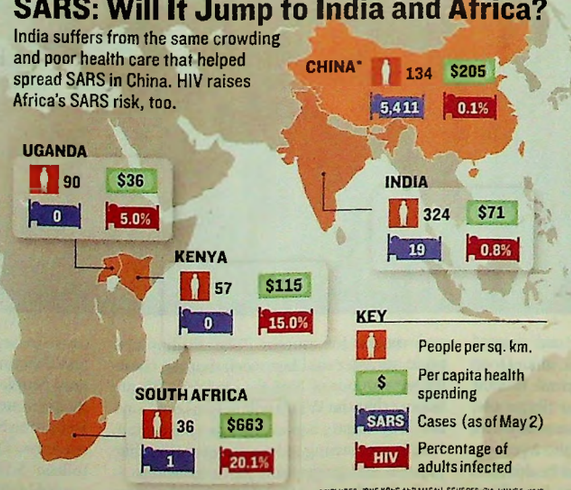
The South African government, Africa's best-heeled administration, has deployed its defenses quietly in order to avoid sowing panic. With no fanfare, it opened a 24-hour clinic at Cape Town airport for checking international visitors for SARS symptoms. All airports are now required to check each airplane from an outbreak country. A public-heath officer boards the plane, addresses the passengers and hands out cards listing SARS symptoms and phone numbers to call for help. Health officials will track those who seem ailing. The government has also created outbreak-response teams and designated hospitals for suspected SARS patients. "People now know about SARS, they are worried about the symptoms and those who fly here with the disease will let medical people know immediately once they feel sick," says one South African specialist. "But what about their gardener or maid, who lives in the township, and goes home that night with a cough?"

It hasn't happened so far. And for now, the south's best chance is that the rich north stamps out SARS before it rolls into a slum like Soweto. "Let us hope that the WHO manages to keep it under control," says Dr. Jumba in Nairobi's Kibera slum. Millions of lives hang in the balance.

With ERIN PRELYPCHAN in Manila, IAN MACKINNON in New Delhi, TEIJE BRANDSMA in Nairobi and JEFFREY BARBEE in Cape Town

SARS: Will It Jump to India and Africa?

India suffers from the same crowding and poor health care that helped spread SARS in China. HIV raises Africa's SARS risk, too.



FROM LEFT: ERIK DE CASTRO—REUTERS; ANJAN SHARMA—AP

The Perils of PARANOIA

The true cost of the SARS crisis may be a lot less than many economic forecasters are predicting

BY GEORGE WEHRFRITZ AND ALEXANDRA A. SENO

SARS HAS TURNED MICHAEL O'Keefe's business upside down, but not for the reasons you might think. As a risk consultant at Kroll International, he normally plays the voice of caution. Not now. In Japan, which has yet to confirm a single case of SARS, he's telling clients that draconian emergency measures—from bans on corporate travel to quarantines for employees who have visited Asia even briefly—are "overkill." His advice: be prudent, but recognize that SARS is not an Asia-wide pandemic, even if it looks like one in headlines. "Just because there's a sick man in Asia," he says, "doesn't mean all of Asia is sick."

Amid warnings from prominent economists that SARS threatens to produce a financial crisis as bad as the 1997-98 Asian currency contagion, it's time for a reality check. SARS has crippled travel, transport and retail industries, but the damage is largely confined to a few "hot zones" like Hong Kong, Singapore and, most recently, China. No, SARS isn't all in our heads, but predictions of an economic disaster assume a regionwide epidemic, which now looks less and less likely. "In my 28 years in Asia, I have never seen such blind panic," says Steve Vickers, CEO of International Risk, a security consultancy. "I've heard about people in Europe concerned about packages coming from Asia. DHL takes 36 hours; viruses don't last that long."

In a report released late last month, the World Bank lowered its growth forecast for Asia from 6 percent to 5 percent, which puts the cost of the SARS epidemic at roughly $30 billion, a tiny fraction of Asia's losses in 1998. The study attributed most of the losses to panic, not illness, noting that "in the short run, the economic consequences arise almost entirely from public perceptions and fears about the disease—and from precautions the public is taking against it—rather than from the disease itself."

That observation should quiet melodramatic comparisons of the SARS scare to the Asian contagion. Back then, all of Asia fell into a serious recession, with regionwide growth plummeting from 8.3 percent in 1996 to 4.4 percent in 1998; in Thailand, Malaysia, and Indonesia, tens of millions fell into poverty. Even China (which cooked its books to hide the impact) saw GNP growth fall to as little as zero percent by some estimates. In comparison, SARS is a paper contagion.

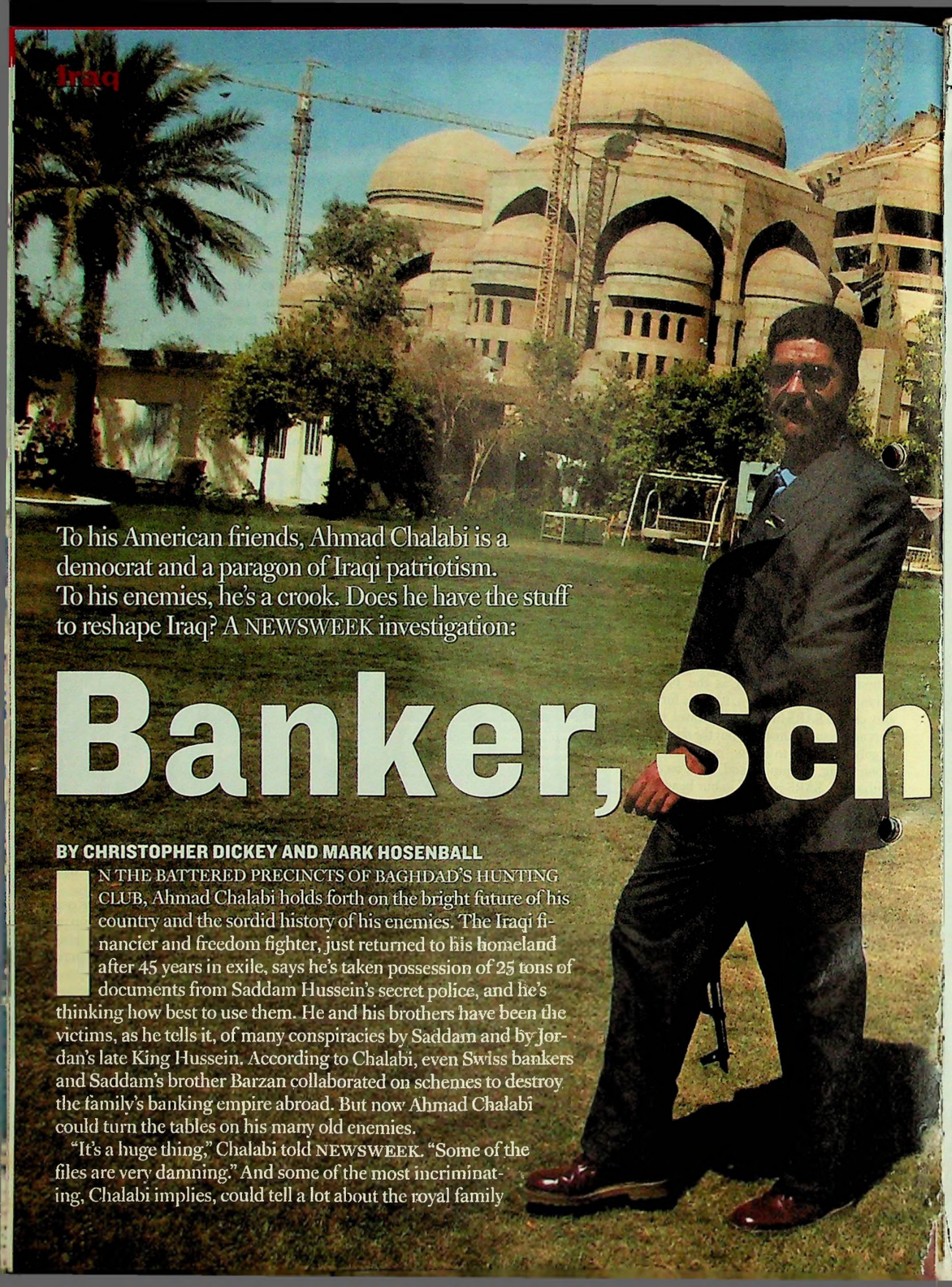
RARE RESPITE: Hospital workers outside a SARS clinic in Beijing

Consider the epicenter of the SARS crisis, Hong Kong. "The lobby of the Mandarin Hotel is empty, sure, but this is pent-up demand, not destroyed demand," says Enzio von Pfeil, CEO of advisory group Commercial Economics Asia, adding that media accounts of the city's dismal prospects are "90 percent based on fear, 10 percent based on reality." By the numbers, tourism accounts for about a tenth of Hong Kong's GDP, so drops in air travel, hotel occupancy and general tourist spending could push the economy into recession this year. But trade, the city's lifeblood, remains largely undisturbed. "It's business as usual for most companies here," says Frank Martin of Hong Kong's American Chamber of Commerce. Traffic at Kwai Chung—the world's busiest deepwater port, which deals mainly in China cargo—has not slowed a bit.

The voices of reason are not getting much airplay these days, however. Pradumna Rana, director of the Asian Development Bank's Asia Recovery Information Center, says Asian countries are healthy enough to defend their economies against short-term capital pressures should they arise, and the region has foreign-currency reserves 400 percent larger than in 1996. Mark Mobius, emerging-markets guru at Franklin Templeton Investments asset management, remains unruffled by SARS after recent business trips to Singapore, Hong Kong and China. "In a few months we will see a return to a normal dynamic economic environment and growth will pick up again," says Mobius.

Even in China, where SARS remains out of control, the outbreak looks like a bump in the financial road. "I don't see SARS destabilizing China's economy," says Cesar Bacani, author of "The China Investor." "The momentum from trade, investment, restructuring and growing household affluence is simply too strong." Last week the World Health Organization lifted bans on travel to Singapore and Vietnam. If those states can contain SARS, why not China? "Once China's leaders focus on problems, they usually manage to resolve them—sometimes with brutal efficiency," a Goldman Sachs report concluded. "You may call that a virtue of authoritarian government." It's also another reason not to fear contagion.

With R[illegible] in Seoul



To his American friends, Ahmad Chalabi is a democrat and a paragon of Iraqi patriotism. To his enemies, he's a crook. Does he have the stuff to reshape Iraq? A NEWSWEEK investigation:

Banker, Sch

BY CHRISTOPHER DICKEY AND MARK HOSENBALL

IN THE BATTERED PRECINCTS OF BAGHDAD'S HUNTING CLUB, Ahmad Chalabi holds forth on the bright future of his country and the sordid history of his enemies. The Iraqi financier and freedom fighter, just returned to his homeland after 45 years in exile, says he's taken possession of 25 tons of documents from Saddam Hussein's secret police, and he's thinking how best to use them. He and his brothers have been the victims, as he tells it, of many conspiracies by Saddam and by Jordan's late King Hussein. According to Chalabi, even Swiss bankers and Saddam's brother Barzan collaborated on schemes to destroy the family's banking empire abroad. But now Ahmad Chalabi could turn the tables on his many old enemies.

"It's a huge thing," Chalabi told NEWSWEEK. "Some of the files are very damning." And some of the most incriminating, Chalabi implies, could tell a lot about the royal family

NOTEBOOK

MILESTONES

SENTENCED. GOHAR KHEIRANDISH, Iranian actress; to 74 lashes for illegal physical contact with a man to whom she is not married; in Tehran. Kheirandish kissed filmmaker Ali Zamani on the forehead during an awards ceremony last September. Her sentence was suspended after she apologized for the offense.

RESIGNED. DONALD CARTY, 58, as chairman and CEO of American Airlines, the world's largest air carrier; after unions found out that he had awarded large bonuses to himself and other top executives last March, while workers were being urged to accept wage concessions; in Fort Worth, Texas. The unions still agreed to $1.6 billion in wage cuts, helping American stave off bankruptcy.

STEPHEN JAFFE—AFP

BORN. CARYS ZETA DOUGLAS, a daughter, to actors Catherine Zeta-Jones and Michael Douglas; in Ridgewood, New Jersey. The couple already have a two-year-old son named Dylan.

▶DIED. NINA SIMONE, 70, fiery singer and classically trained pianist who was known, somewhat inaccurately, as the "high priestess of soul"; after a long illness; in Carry-le-Rouet, France. Born Eunice Waymon, the onetime aspiring concert pianist took a new name so that her mother wouldn't catch on to her pop career. The self-described diva had only one hit single—*I Loves You Porgy* in 1959—but won fans with her alternately smooth and gravelly tones, majestic stage presence and maverick opinions. Simone called her music "black classical," embracing such genres as African folk, jazz and gospel. An influential voice in the civil-rights movement—she wrote *Mississippi Goddam*, a response to the murder of Medgar Evers and a church bombing, and the anthem *Young, Gifted and Black*—she left the U.S. in the 1970s to protest racism, eventually settling in France.

MARK HUMPHREY—AP

▲DIED. FELICE BRYANT, 77, co-author, with her late husband, Boudleaux Bryant, of such hits of the 1950s for the Everly Brothers as *Wake Up Little Susie* and *Bye Bye Love*; of cancer; in Gatlinburg, Tennessee. The pair's more than 800 songs were also recorded by Elvis Presley, Bob Dylan and Buddy Holly.

GETTY IMAGES

DIED. CHOLLY ATKINS, 89, pristinely polished, graceful tap stylist turned Motown choreographer; in Las Vegas. As part of Motown's artistic development, he engineered the images, costumes and dance moves of such acts as Marvin Gaye, Smokey Robinson and the Miracles and the Temptations.

DIED. MARTHA GRIFFITHS, 91, keenly intellectual former U.S. Congresswoman from Michigan, whose persistence led to the House and Senate passage of the never-ratified Equal Rights Amendment; in Armada, Michigan. During her 20-year tenure in Washington (she chose not to run again in 1974), she was responsible for adding "sex" to the 1964 Civil Rights Act, thus banning discrimination based on gender, and became the first woman to serve on the powerful Ways and Means Committee.

JOHN SPRINGER COLLECTION—CORBIS

▲DIED. KAREN MORLEY, 93, brainy blonde bombshell of 1930s Hollywood, who played Paul Muni's moll in *Scarface*, Greta Garbo's fellow spy in *Mata Hari*, and a farm cooperative pioneer in King Vidor's *Our Daily Bread*; in Woodland Hills, California. In 1947, Morley was blacklisted for refusing to answer questions from the U.S. Congress about her ties to the Communist Party.

SO NOW WE KNOW ...

No matter how defiant their private squabbles, politicians like to emerge from closed-door summits appearing grown-up. Now a Danish Broadcasting Corporation documentary, *Fogh Behind The Façade*, shown last week in Denmark, reveals some embarrassing moments as E.U. leaders negotiated the formal acceptance of 10 new countries to the Union. French President Jacques Chirac is caught in a tête-à-tête with Danish PM Anders Fogh Rasmussen, during which Chirac throws his hands up in dismay when Fogh Rasmussen suggests a deal on agriculture might not go through. "No, no, it's too much," Chirac moans. "I can't do that. The French farmers ... get furious. I cannot give something one day and take it back the next." Another revealing episode came when Danish Foreign Minister Per Stig Moller expressed his vexation with his German counterpart Joschka Fischer's position on Turkey joining the E.U. "Did I tell you that Joschka Fischer had three different points of view in less than 12 hours on the question of Turkey's application?" Moller asks Rasmussen. The statement angered the Turks, and the German Foreign Ministry issued a statement saying the film's account of Fischer's supposed equivocation is "not true." Moller was so mortified he felt obliged to explain himself to Fischer during a recent meeting in Brussels. If nothing else, the film affirms that there are good reasons to keep the doors on E.U. meetings closed. —By Ulla Plon/Copenhagen

MARK RENDERS—GETTY IMAGES

TOUGH ACT: PM Fogh Rasmussen

HOW BAD IS IT?

Beijing has come clean, but the litmus test of China's new openness is Shanghai

By HANNAH BEECH, SHANGHAI

FOR A METROPOLIS TEEMING WITH 13 million people, it was the most spectacular of disappearing acts. Overnight, Beijing, a city whose wide avenues are usually jam-packed with crowded buses, squadrons of bicycles and even the occasional donkey cart, had transformed into a ghost town. Panicked about Beijing's burgeoning severe acute respiratory syndrome (SARS) crisis, residents were fleeing or staying indoors to evade the deadly disease that had by week's end claimed 48 lives and afflicted 988 others in the capital. Restaurants, theaters and shopping malls resembled abandoned movie sets. Elementary and middle schools were closed for two weeks, while some universities confined students to their campuses. Three major hospitals were quarantined, including the Peking University People's Hospital with its 2,000 or so employees. Only the city's dilapidated railway stations bustled with activity as frantic, face-mask-clad citizens pushed and shoved for a ticket out of town. "I'm very worried about getting on a train with so many people," says a student surnamed Wang, who was waiting for the poorly ventilated train back to his native Changzhou in Jiangsu province. "But I'll do anything to get out of Beijing. It's simply become too dangerous."

CHIEN-MIN CHUNG FOR TIME

It is a crisis the international community has known about for more than a month, but only now is it hitting home in China. On April 20 the government ended a weeks-long policy of massively underreporting SARS cases in the capital, sacking the city's Mayor Meng Xuenong and the nation's Health Minister Zhang Wenkang. In just one day, the city's SARS caseload was revised from 37 to 339. By week's end even that figure had almost tripled. But increased transparency has hardly meant an end to Beijing's looming biological nightmare, and the scramble to make up for lost time has only succeeded in spooking residents who had genuinely believed the city's original lowball SARS statistics. As nervous citizens cooked up exit strategies, the social stability that China's leaders were trying to maintain when they underplayed Beijing's SARS numbers has been shaken. The World Health Organization (WHO) slapped a travel advisory on the capital city, portending a slowdown of foreign investment in Beijing and sluggish economic growth.

Panics can happen anywhere, but they take on epidemic proportions in countries lacking a free flow of information. Unable to rely on government reports, Beijing's citizens were forced to depend on the rumor mill, which was turning at 1,000 r.p.m. last week. Grannies in Mao suits whispered that the entire capital was going to be quarantined, while Internet chat rooms buzzed with claims that the disease was a conspiracy courtesy of the Americans and the Taiwanese. Yu Jun, a worker at a private metal company, had heard that shops would soon be closed and was raiding a grocery store for basic food supplies. "I know this is probably a rumor," says the 32-year-old, whose neighbor has come down with SARS. "But right now I'd rather believe rumors than what the government tells me is true." Meanwhile, in villages on the outskirts of Beijing, terrified citizens have set up blockades to bar all outsiders from entering, creating an atmosphere of desperate vigilantism.

Even more worrying, hospitals on the epidemic's front lines are also spooked. Medical facilities in both Beijing and the country's impoverished interior are reeling, as the very doctors supposed to be fighting the disease are themselves falling ill; at the quarantined Peking University People's Hospital, 70 medical staff caught the disease after one virulent victim arrived at the emergency room. When that first patient checked into the hospital on April 7, doctors had not been adequately schooled in infectious-disease protocol, since Beijing was still denying the capital had a SARS problem. Medical staff quickly fashioned a makeshift isolation ward, but their quarantine techniques proved faulty when 20 patients and dozens of doctors were infected. "We just didn't have the right resources to handle the problem properly," says a department head at the hospital. "It was hard to do the right thing before the government started reporting accurate numbers." In an effort to prevent the disease from spreading to other vulnerable hospitals, Beijing has touted a soon-to-be-finished facility dedicated to treating SARS victims. The complex is a converted clinic formerly used to treat sexually transmitted diseases. Wards are being constructed out of sheet metal and resemble the temporary dormitories usually used to house migrant workers.

For the Chinese government, the SARS crisis presents the gravest threat since the student protests at Tiananmen Square 14 years ago. Confidence that the Party always knows best is badly shaken. China's leaders

JU LINWEI FOR TIME

COMING AND GOING Thermal body scans are conducted upon arrival at a Shanghai airport, left. A migrant worker flees Beijing, above

TAPPING THE SOURCE

Did Guangdong Beat the Bug?

By MATTHEW FORNEY
GUANGZHOU

In the struggle to contain SARS, Ma Lin is the man with his finger in the dike. Ma is the vice director of the center for disease control and prevention (CDC) in Guangzhou, and it's his job to track every suspected SARS victim in the capital of China's Guangdong province. That makes him one of the busiest men in China. Last Thursday, a Guangzhou man reported by his employer as running a fever was refusing to submit to a SARS examination. The response was instant. "Tell him he can deal with us now, or deal with the police later," Ma says, dictating an order to one of hundreds of health officials working around the clock. He turns to a reporter from TIME. "The police haven't actually become involved, but people always respond to the threat."

The health department is not normally an agent in mainland China's feared security apparatus, but decisive measures like this seem to have enabled Guangdong, birthplace of SARS, to stabilize the spread of the disease. While Beijing panics, Shanghai quibbles and Hong Kong continues to flounder, Guangdong has apparently seen a reduction in new cases from a peak of almost 50 a day in February to an average of nine for the past month, although it has hit the teens in recent days. "If SARS can be contained in Guangdong," notes World Health Organization (WHO) Beijing representative Hank Bekedam, "it becomes clear that strong action can help other provinces."

So what's Guangdong's secret? First, according to WHO sources, provincial officials on Feb. 3 set up an effective system of reporting new cases and disseminating information among its health-care workers. Unlike in Beijing or Hong Kong, where SARS patients have been scattered throughout the network of hospitals, Guangdong has consolidated them in a handful of its best hospitals. On Feb. 11, when the province publicly admitted to 305 cases, it was already running a central command to coordinate the fight against SARS. "We're tracking down every suspected case, quarantining patients and letting them go only after we're sure they're not infected," says Huang Fei, director of the command office. In the absence of a vaccine or effective treatment, that kind of dogged, shoe-leather epidemiology is vital to bringing an outbreak under control.

CHINA PHOTO—REUTERS

CLEAN TEAM Guangdong's measures seem to be working

A look at how suspected cases are handled reveals a level of sophistication probably unseen in other parts of China. On April 20, Li Junhua, a worker on a construction site, boarded a bus for the five-hour ride to his home province of Hunan. Near the border with Guangdong, the man sitting behind the bus driver suddenly died. The driver contacted the police, who 10 minutes later arrived with health officials. They distributed masks and ordered that nobody was to leave the bus as the officials performed a background check on the dead man. "We were terrified he had died of SARS," says Li. Nine hours later, the officials had their result: the dead man's name turned up on a hospital computer as having been treated days before for a stroke. Doctors concluded the case was not SARS, but still recorded contact details of everyone on the bus and forwarded the list to the CDC in Guangzhou, where Li's contact information remains on file. "The whole process was remarkably efficient," Li told TIME by telephone from his home in Hunan.

Perhaps even more crucial, Guangdong quickly recognized the importance of protecting its medical staff, which early on accounted for nearly 40% of all SARS cases. After an initial delay, in late February front-line workers received full-body protective suits for use in dangerous cases of the disease—something doctors and nurses in Hong Kong are only now being given. In the past month, the number of new SARS cases among health-care workers has fallen steadily to "basically none," according to Huang. SARS wards in Guangdong are well ventilated, with open windows and fans circulating air, which doctors in the province and the WHO alike believe plays an important role in preventing hospital infections.

Politically, though, Guangdong has acted as shamefully as Beijing—and those mistakes have cost the rest of the world. The province dithered in January when it first identified the virulent new atypical pneumonia that would later be labeled as SARS, losing a chance to stop the disease in its tracks. Even after Guangdong had set up its efficient response system, officials there failed to share their expertise with Beijing and Hong Kong, and misrepresented the extent of the deadly new disease. Although the WHO is "pretty satisfied" with the way the outbreak has been handled medically, "that's distinct from how it was handled politically," says Peter Cordingley, WHO's Asia spokesman.

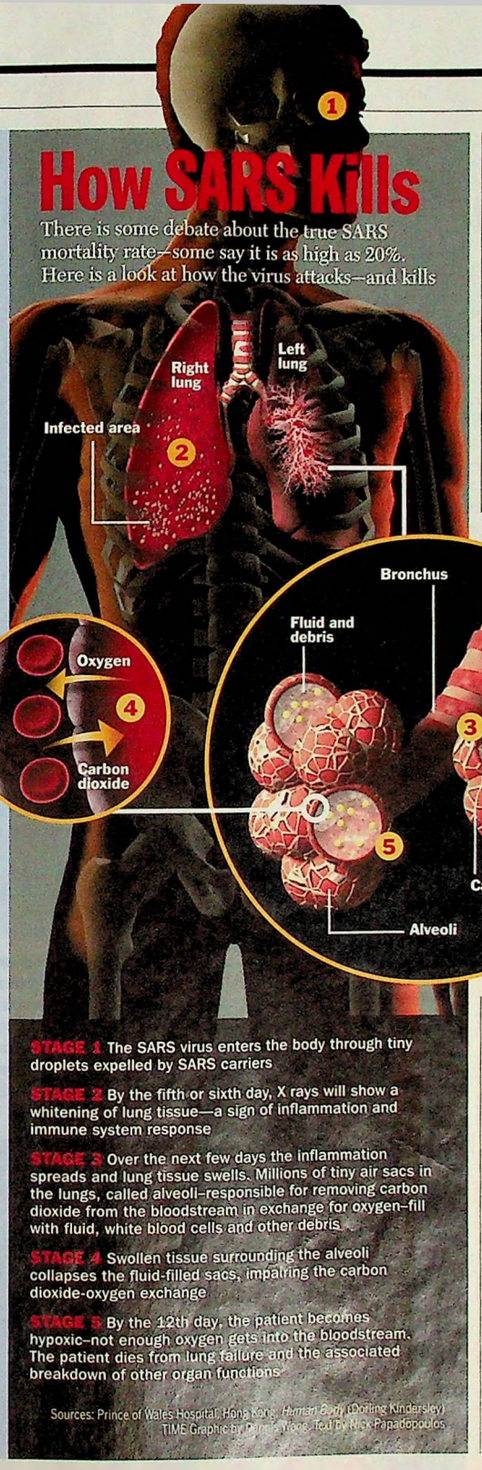
But infection-control methods alone seem unlikely to account for the SARS tally gap between Guangdong and neighboring Hong Kong, the latter having recorded over 130 more cases in only a month-and-a-half, with a fatality rate that's significantly higher than Guangdong's reported figure of 3.5%. Dumb luck plays a part. Guangdong officials say the province hasn't suffered a single explosive outbreak along the lines of Amoy Gardens in Hong Kong, where 321 people were infected, possibly via contaminated sewage, in a matter of days. That sudden mass of seriously ill patients spread SARS through the local community and overwhelmed hospitals, directly leading to more infections among health-care workers.

It's also possible that Guangdong natives have built up herd immunity to SARS, which occurs when a significant percentage of a population has developed antibodies against a specific disease, slowing its spread. But Malaysian microbiologist Dr. Lam Kai Sit notes that "with SARS, the incidence is so low there cannot be much immunity in the general population." Herd immunity could be aided by large instances of asymptomatic infection (infections with no sign of disease), but scientists have no way of knowing if such cases exist without using wide-scale diagnostic tests.

A more likely, and frightening, possibility is that the unstable SARS coronavirus has mutated since it left Guangdong, perhaps into a more virulent and contagious form. Scientists at the Beijing Genomics Institute announced last week that there were significant genetic differences between coronavirus samples sequenced from patients in Guangdong and in Beijing. In Hong Kong, doctors believe the virus may have mutated when it infected Amoy Gardens residents, who suffer unusual symptoms (including severe diarrhea) and have a higher fatality rate. Says Dr. Michael Lai, a coronavirus expert at the University of Southern California: "As the virus responds to different environments, different strains will emerge."

The possibility weighs on the minds of Guangdong's health officials, who know the province is just one superspreader away from a new outbreak. If SARS returns, it could spread rapidly among the province's 31 million migrant workers, who live in cramped dorms and enjoy few health services. "Even just one case a day is a problem," says Chen Rongchang, vice director of the Guangzhou Institute of Respiratory Disease. "One person could easily pass SARS on to 10 people, and then to a hundred. The virus is not dying out." Fortunately, neither is Guangdong's will to stem the tide on this deadly disease.

—With reporting by Neil Gough and Bryan Walsh/Hong Kong and Jodi Xu/Guangzhou



have parlayed their success at transforming the mainland economically into a depoliticization of the masses that enables continued one-party rule. But if the Communist Party cannot handle a public-health crisis—a basic service in most developed countries—then will it really be effective as China hurtles toward even greater transformations ahead?

How the crisis ultimately rattles China depends, in part, on what happens in the country's financial capital, Shanghai. The city is home to Jiang Zemin's power base, and if any heads roll there, the former President and his acolytes lose out. So far this city of 16 million has appeared largely untouched by the mystery virus. Last Saturday, local health officials had only confirmed two cases and 15 suspected patients, one of whom was an American. So worried were central-government officials that this last bastion of good health might be infected that they sent a directive to Shanghai authorities early last week demanding that local bureaucrats maintain the city's reputation as essentially "SARS-free," according to a vice-mayoral aide. Whether that meant Shanghai really was immune to the disease or whether they were just supposed to give outsiders the impression that China's biggest city didn't have a SARS outbreak wasn't clear. "All I have been told is that we must maintain the image of Shanghai as a place without a SARS problem," says a Shanghai health official, before adding: "Sometimes the reality can be different from the image, but if you want to attract foreign investment, image is the most important thing."

But as the week progressed, Shanghai's much-vaunted image was starting to fray. Local doctors, who have been instructed not to talk to foreign media lest they lose their jobs, haven't accused Shanghai of a cover-up as extensive as the one in Beijing. But they have voiced doubts about the veracity of the government's statistics. In a press briefing last Friday, the WHO, which concluded a five-day trip to Shanghai that day, said it generally accepted the government's confirmed caseload, despite having posted a notice on its own website the day before saying that it suspected Shanghai

Perry Link

Will SARS Transform China's Chiefs?

Only if the Communist Party believes it needs to come clean to survive

WHY DID THE CHINESE GOVERNMENT WANT TO COVER up SARS? Who lied and why? Does the sacking of two high-level officials, Minister of Health Zhang Wenkang and Beijing's Mayor Meng Xuenong, mean that China is on the verge of liberalization?

The answers to these questions can be found in the way the Chinese leadership handles information. The Communist Party runs two different communication systems with very different missions. One system collects information and sends it up the bureaucratic hierarchy. This information is supposed to be—and often is—solid and "objective." But it is kept secret. The higher a person's position, the higher the quantity and quality of the information he receives. The other system channels information from the top down. This is the open, public information Party leaders have decided that people below them may—and in some cases should—know about. It might or might not be solid, but it should never harm the interests of the leaders.

The two systems work in tandem, often with the same officials performing both functions. During the nationwide student demonstrations in 1989, New China News Agency reporters in all the provinces wrote detailed daily reports on local student activities and sent them to Beijing for the eyes of top leaders. The information was remarkably accurate; but hardly any of it went into the agency's bulletins that were sent back down the bureaucracy, which merely told the citizenry that "a small clique of hooligans was causing turmoil."

A bureaucrat in both systems might drag his feet in reporting bad news, because in Chinese culture local trouble, whatever its cause, is assumed to reflect poorly on local leaders. But his clear duty is always to report truthfully to those above and speak officially to those below. The by-product of the difference between the two systems is prevarication.

With SARS, as with earlier crises manmade (Tiananmen in 1989) or natural (the Tangshan earthquake of 1976) in China, the spread of information to the public underwent distinct stages. The first stage is cover-up. If that fails, the next is to say "the problem is small." If that becomes untenable, the last message is "everything is under control." Meanwhile, the flow of accurate information upward is never supposed to stop. We do not know when word of SARS first reached Beijing, but in late February the government's propaganda department ordered a halt to public reporting on the disease in order to "ensure the smoothness" of the National People's Congress meetings in March. Since then the Politburo has met three times about SARS. Party boss and President Hu Jintao has issued nine directives on the topic and Premier Wen Jiabao has released 29. Still, at a meeting of the Politburo's Standing Committee on April 17, Zhang Wenkang and Meng Xuenong were accused of failing to keep their superiors adequately informed. For that, they were made scapegoats.

But if the need for scapegoats is routine, the question of who should be purged is almost never so. Factionalism sometimes so dominates the decision making that dispatching a political opponent can become the main reason for the firing. Strategies and motivations for such maneuvers are usually kept private. It is hard to say, for example, whether the current shake-up will affect the balance of power between Hu and his predecessor, Jiang Zemin. Of the two positions at stake, mayor of Beijing is far more important politically than Minister of Health. Beijing mayors have been chosen with great care ever since Chairman Mao's day. If push comes to shove, administrative control of China's seat of power outweighs many other things, including public health. So who wins and who loses when Meng Xuenong is replaced by Wang Qishan? Meng is from the Communist Youth League organization, a base for Hu Jintao. Wang Qishan has recently been close to former Premier and economic reformer Zhu Rongji, but was also once favored by Chen Yun, a champion of central planning, and is the son-in-law of the late Yao Yilin, a conservative Party elder. It is not clear where Wang will stand on issues. Zhang Wenkang, the sacked Health Minister, was once Jiang Zemin's personal doctor and has been politically close to Jiang for a long time. But Jiang has so many other allies in the Politburo and military that this loss hardly seems to matter.

The process of the personnel shifts might be more significant than the shifts themselves. Apparently Hu Jintao and Wen Jiabao made the decisions and then ushered them through the Politburo without consulting Jiang. Hu and Wen, who since last November have made some tentative moves toward press freedom, seem also to be using the admission of SARS patients into military hospitals to leverage more access to the military bureaucracies controlled by Jiang's group.

At the fringes, such efforts to skirt Jiang might do some good for liberalization in the mainland. Some China watchers have even speculated that SARS might be the country's Chernobyl—a traumatic event that forces a closed political system into more permanent openness. Such optimism is probably misplaced. Chernobyl inspired *glasnost* because Mikhail Gorbachev chose to see it as serving the Soviet Union's best interests. But for a decade now, Chinese leaders have been looking at the Gorbachev precedent and inferring exactly the opposite lesson: they believe Gorbachev made a fatal mistake by loosening up. True, some Chinese leaders secretly may be waiting for a chance to dismantle China's repressive system and thereby earn a glorious place in Chinese history. But there is currently no evidence of that.

On the contrary, the current generation of top leaders, educated Soviet-style in the 1950s and 1960s, and having traveled abroad less than even previous generations, are inured to the system in which they rose. It is the only system they truly understand, and control of information is its lifeblood. They are still unlikely to relinquish that control willingly. ■

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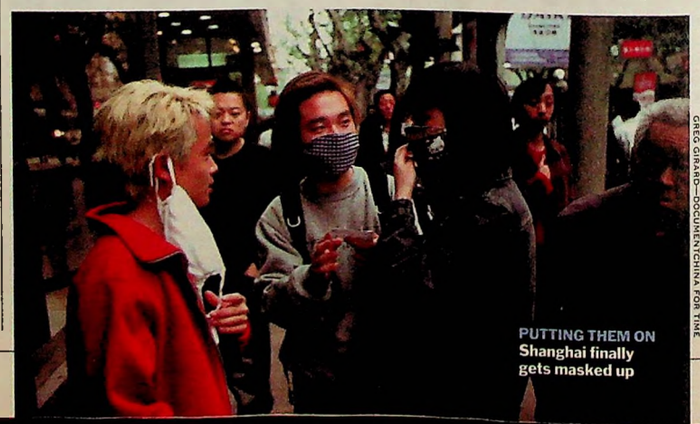
GLAD-HANDING
Hu on an inspection tour of Guangdong province in April

FAN BILLING—DENDRAF

was underreporting the numbers. (An informal press conference set up by a WHO official on Thursday evening was halted by security personnel.) Though the WHO reported it had been given full access to medical facilities, a doctor at the People's No. 6 Hospital said the international experts were shown "a sanitized version of Shanghai's SARS problem." A doctor at the Shanghai Contagious Diseases Hospital told TIME there were more than 30 suspected cases at his hospital alone, double the official suspected caseload for the whole city. He and other physicians also complained that Shanghai's requirements for diagnosing SARS had been much more stringent than elsewhere in the world and that if the standards used in, say, Hong Kong were applied in Shanghai, many patients in the suspected caseload would be shifted to confirmed cases. The same questionable accounting had been used in Beijing, before the capital became more forthright about its viral crisis. On Friday, the WHO reported that Shanghai would be adopting a less strict standard for calculating suspected cases and that the city therefore would soon be substantially increasing its suspected caseload.

At the Huashan Hospital in a leafy district of Shanghai, doctors and nurses confirmed there were seven suspected cases at their hospital, although the hospital's official press liaison said it had none. The patients were being treated in a makeshift isolation ward housed in a dilapidated prefab building formerly used for hepatitis patients. Doctors and nurses were not wearing formal isolation suits, and many were wearing four or five simple surgical masks over each other. But last Wednesday, security guards waiting for possible visit from WHO officials were instead ushering interested foreigners to a fancy high-rise nearby. On the 15th floor of this building, medical staff in full barrier suits greeted the guests, while other staff conspicuously sprayed disinfectant around the ward. The road leading to the building had been recently repainted and an elevator lady stood in the lobby, helpfully directing the visitors to the official isolation clinic. No such sprucing-up measures, however, had been taken at the makeshift ward where the patients were actually being treated. In the end, the WHO did not visit the hospital, although it toured many others. Says one security guard there: "Now we can go back to being normal."



PUTTING THEM ON
Shanghai finally gets masked up

GREG GIRARD—DOCUMENTCHINA FOR TIME

Similar games were played out at other hospitals. At the People's No. 6 Hospital, director He Mengqiao formally denied there were any suspected cases there, instead maintaining that the hospital was merely a "monitoring station." Yet just 10 minutes earlier, another doctor who mistakenly assumed a TIME reporter was affiliated with the WHO showed X rays of a 14-year-old patient suspected of having the disease. He said that other students at the same school were also running fevers and were being monitored. Education officials denied knowing of any such cases.

Political analysts say Shanghai's Party discipline has never been so tight as it has been in recent weeks. Early last week, top Shanghai Communist Party officials met with local state-run media to discuss the city's SARS situation. The meeting was classified as *neibu* (internal), meaning that the information discussed would not be disseminated to the public. Officials told the gathered media that medical experts had told them Shanghai would not escape the SARS epidemic, despite previous public assurances to the contrary. The cadres also said the WHO had told them that the U.N. agency did not believe the government number of only two confirmed cases—before the WHO basically proclaimed otherwise in its Friday press conference. Large-scale events in the city were to be canceled, and Shanghai's much-vaunted auto exhibition was ordered closed two days early after rumors that SARS-positive patients had visited the show. The media were instructed to ramp up a SARS public-education campaign so that city residents would know how to prevent the spread of the virus.

But then the meeting took an alarming turn. Party officials cautioned that "Shanghai's SARS caseload was still a state secret," according to a journalist in attendance. The state media were not to report any SARS statistics higher than the government-sanctioned figures, nor were Shanghai-based journalists allowed to interview any SARS patients or their families. "Readers are going to be very confused," complained the journalist. "On the one hand, we tell them there are almost no cases in Shanghai. On the other, we tell them that they must be very vigilant in avoiding the disease. But if Shanghai has barely any

HONG KONG

System Failure

When Betty Tung, wife of Hong Kong's beleaguered Chief Executive Tung Chee-hwa, toured the city's SARS-slammed Lower Ngau Tau Kok housing estate to pass out hygiene kits, she dressed up for the occasion. Clad in a face mask, a protective cap, goggles, a plastic disposable gown, gloves and shoe guards, Mrs. Tung alarmed local residents. The protective suit was more elaborate than an ICU doctor would wear—if ICU doctors had ready access to that sort of gear—and local media had a field day criticizing her.

Mrs. Tung's misguided mission exemplifies the Hong Kong government's half-measured response to SARS. Medical staff are facing shortages of vital protective equipment even as more health-care workers are afflicted. Medical resources are stretched to the limit, but the government has been slow to consolidate the SARS patients scattered among more than 10 hospitals. "There is mismanagement within the Hospital Authority," says Dr. Lo Wing-lok, chairman of the Hong Kong Medical Association. It's not just a lack of hardware but also of will and common sense. Hong Kong authorities are screening airport passengers but have been slow to institute health checks along the busy border with Guangdong province. "This government is unwilling to take up matters with [Beijing]," says Allen Lee, a Hong Kong delegate to China's National People's Congress. "It's pathetic."

Hong Kongers are usually resigned to such incompetence. But last Friday, encouraged by the sacking of China's Health Minister and Beijing's mayor, legislator Albert Chan made a formal call for Tung's resignation. Whether or not Tung goes, his administration's credibility has already become a victim of SARS.

—By Bryan Walsh. Reported by Ilya Garger and Carmen Lee/Hong Kong

APPLE DAILY

BETTY BOO: Mrs. Tung proved to be an alarming sight

YOUR TABLE IS READY Eateries have been hard hit

MIRANDA LUO FOR TIME

cases, why does the public need to be worried about SARS?" The answer to that question is self-evident. The Party, however, appears to still be putting its own survival above the well-being of ordinary Chinese.

AS FRIGHTENING AS CHINA'S MEDICAL EPIdemic is, the country's leaders could find the economic and political fallout even more terrifying. For years, the Communist Party has based its legitimacy on a record of rapid economic development. Soaring GDP rates and rapidly improving material well-being have distracted the masses from a still spotty human-rights record and sclerotic political system. Fear of an economic downturn, such as the one hitting Hong Kong, was among the reasons the government covered up the epidemic for so long. Now, the disease looks like it could indeed have a devastating effect on the country's finances—precisely at a time when other Asian nations were counting on China to serve as an engine for regional economic growth. Already, Citigroup has lowered its forecast of China's growth for this year to 6.5%, far below the 8% Beijing considers the minimum requisite level to provide work for the millions who are being let go by money-losing state enterprises each year. A poll by the American Chamber of Commerce in Beijing shows that 20% of its member companies have already sent family members out of China for fear of SARS. "Anything that requires face-to-face meetings is on hold," says Jack Langlois, director of Morgan Stanley Properties for China. But expatriates are the least of China's problems. The brunt of the economic burden will be largely borne by the laboring masses, namely the country's estimated 120 million migrant workers, who have already been flocking to Beijing's train stations in the tens of thousands after being let go from menial jobs at restaurants, markets and factories. "(The impact) will fall disproportionately on those least able to cope," says Tang Min, chief economist at the Asian Development Bank in Beijing.

These economic and social implications of the disease may be pushing China's leadership to a make-or-break point. Containing the outbreak is the first big test for the country's new President, Hu Jintao, a man who appears to have reached the top by keeping his head down and not formulating a single memorable policy. But in an unprecedented display of forthrightness, both Hu and Premier Wen Jiabao have called for increased transparency in dealing with SARS—a radical policy departure, and major political gamble, for a leadership that traditionally feels more comfortable with obfuscation than candor. If Hu's move toward open governance pays off by containing the disease and winning public confidence, analysts say it could help him consolidate his power base by shunting aside forces loyal to his predecessor, Jiang Zemin. "This is his chance to grab the support of the people and stand up on his own," says Bao Tong, a former senior Party official who was purged after the 1989 Tiananmen uprising and lives in Beijing. But should China's GDP rates tumble or the public remain skittish, Jiang, with his continuing control of the military, could reassert his authority. That could signal a return to the bad old days when the Communist Party regarded the massacre around Tiananmen Square and the deaths of some 200,000 people in the 1976 Tangshan earthquake as state secrets. Keeping information about SARS a secret, however, could ultimately undo much of the progress China has made over the past 10 years in securing foreign investment and ensuring growth. It's hard to do business with a government that won't talk openly about a disease that could kill you. *—With reporting by Bu Hua/Shanghai and Matthew Forney, Huang Yong and Susan Jakes/Beijing*

Michael Elliott

Mother Nature: Political Reformer

Chernobyl and an earthquake in Mexico City led to great change. Will SARS?

WHAT SCARES YOU MORE, SARS OR TERRORISM? FOR ME, it's the disease, though I'll concede to a bias: I spent part of last week in Toronto, where commuters are now worried about whom they're sitting next to and where a favorite bar of mine—packed when I was there in February—is now as empty as the Yukon.

The problem isn't just the virus, which has traumatized at least two other cities: Beijing and Hong Kong. What's especially nerve-racking is the cover-up at the source, in the corridors of power in China. Hu Jintao, who became leader of China's Communist Party half a year ago, now has to manage the country's biggest internal political crisis since the 1989 massacre at Tiananmen Square. After Beijing's initial efforts to hide the severity of crisis, Hu will have to step nimbly to protect the party's authority—and his career.

Once upon a time, outbreaks of disease and environmental catastrophe could be swept under the rug. Man-made famines in Russia in the 1930s and China two decades later were scarcely known outside their borders. But more recently the world has become too interconnected for deception of that magnitude. In 1986, when a nuclear reactor exploded at Chernobyl, in Ukraine, the Soviet government initially tried to keep it quiet. But when Geiger counters in Scandinavia went haywire, Moscow had to come clean. This year the truth about SARS emerged after citizens infected in China traveled outside the country—and after the groundbreaking reporting of TIME and other international publications.

JEFF ROBBINS—AP

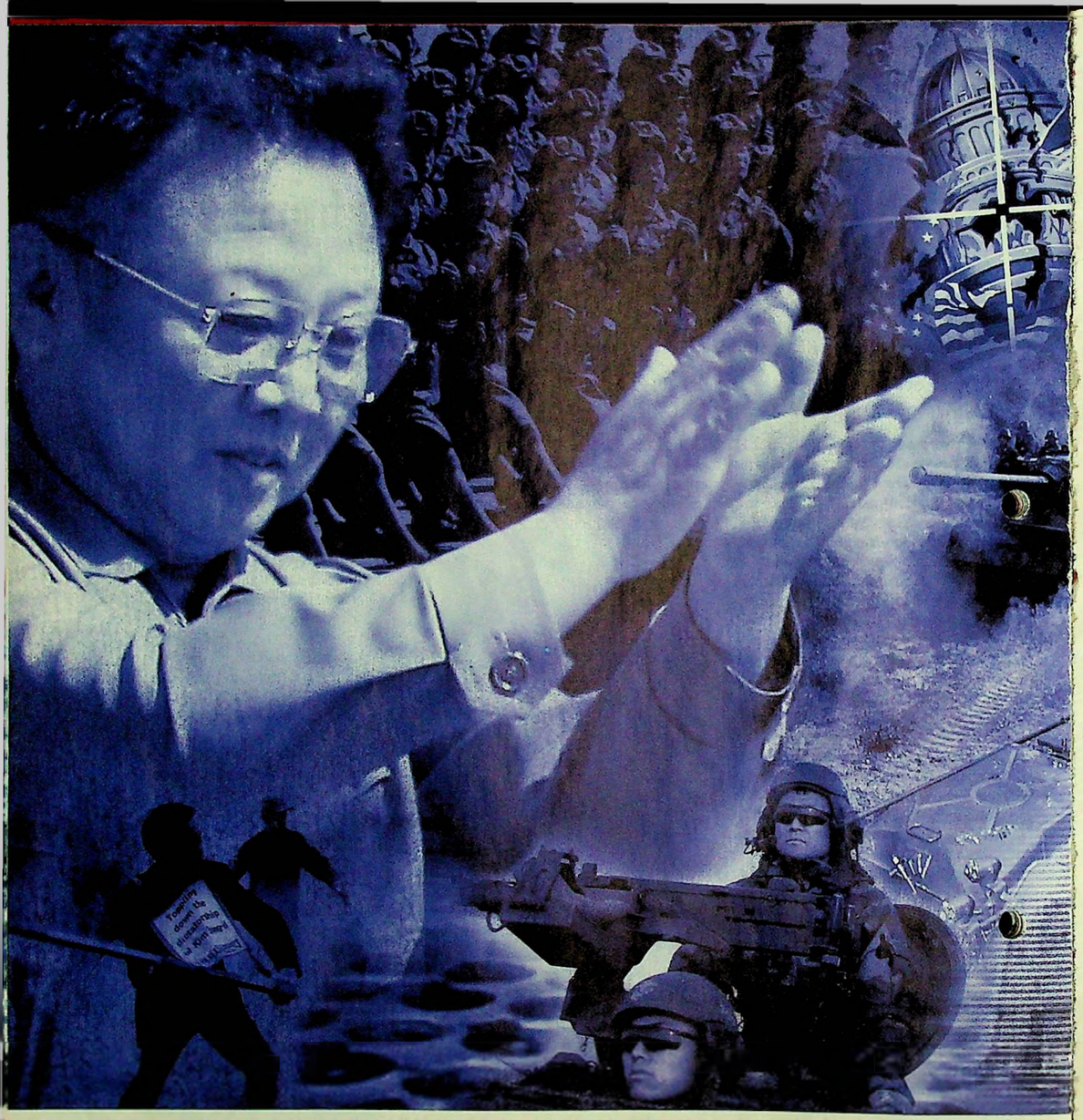
MEXICO, 1985: An earthquake shook up the system

China still has a long way to go. Beijing even now has been less forthcoming than the Soviets were during their crisis 16 years ago. Mikhail Gorbachev finally admitted that Chernobyl was a disaster (with some caveats, to be sure) 18 days after the explosion; Beijing is still being less than honest about SARS, unless you really believe that, as of last week, there were just two cases of the disease in Shanghai (pop. 17 million). Chernobyl eventually helped promote positive change in the Soviet Union as citizens grasped just how awful the system had become. Gorbachev realized that "even if you wanted to be Stalin, you couldn't anymore," says Michael Mandelbaum of the Johns Hopkins School of Advanced International Studies. Within months, the Soviet leader accelerated his *perestroika* and *glasnost* reforms, which speeded the collapse of Soviet communism. In China, Hu sacked the health minister and Beijing's mayor. But it is still unclear if the Chinese leadership knows that it is not possible to have free markets, and the economic prosperity they bring, without a free flow of truthful information. "They don't understand what it means to handle things openly. They don't understand it's the start of a crisis. They are not psychologically, materially or politically ready for this," says Huang Jing, a political scientist at Utah State University.

There's another model China's leaders would do well to study. In 1985 a massive earthquake shook Mexico City. At the time, Mexico was, in effect, a one-party state, governed by a deeply corrupt and softly totalitarian regime whose leaders were beggaring the country. But within the bureaucracy was embedded a generation of brilliant technocrats who were trying to open the nation and its closed economy to the world. The crisis of legitimacy posed by the earthquake was a catalyst; it convinced the Mexican public and many of the technocrats that Mexico had to change in a fundamental way—that its society and politics, not just its economy, had to welcome new ideas. After a decade and a half of many bumps and some tragedies, the process reached a pinnacle when the 2000 presidential election saw the overthrow of the old order. The candidate of the Institutional Revolutionary Party, which had ruled Mexico without a break since the 1920s, lost to Vicente Fox.

The story holds another lesson: Mexico could not have changed on its own. The transformation from a closed, state-dominated economy to an open one was wrenching. Mexico needed help, which it got from the U.S. The North American Free Trade Agreement, negotiated by the first Bush Administration and signed by that of Bill Clinton, guaranteed that the U.S. would buy what Mexico produced; later, when the peso collapsed, Clinton put together a rescue package.

Successive American administrations helped Mexico not because they had drunk of the milk of human kindness but because it was in their interests to do so. Economic turmoil in Mexico would have spilled north of the border, just as polluted water and diseases do. For Clinton, especially, it was axiomatic that the U.S. could not be immune to economic, environmental or health crises elsewhere in the world—that such "soft" issues posed as real a danger to American interests as "hard" ones like terrorism. "People looked askance," Clinton told me last week. "When we said that AIDS and other diseases were a security threat, that environmental degradation was a security threat, SARS is just the latest example." You don't have to visit Toronto to know that he's right. *—With reporting by Matthew Forney/Guangzhou and Susan Jakes/Beijing*



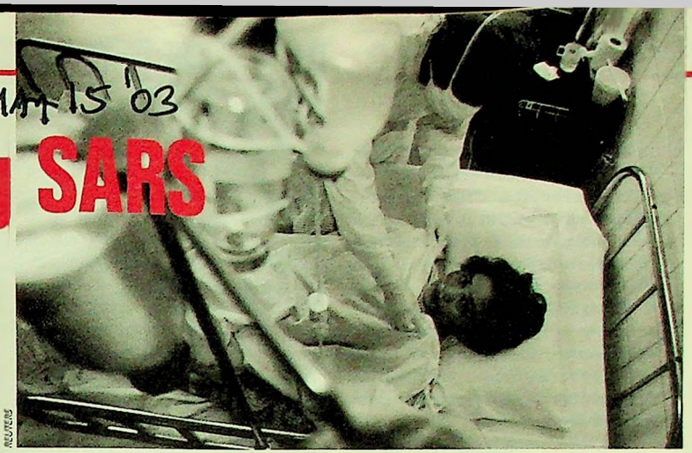
JOINING THE

North Korea claims it has the Bomb, pushing the nuclear deadlock over

DOWN TO EARTH MAY 15 '03

Suffering SARS

Is the crisis spawned by this new viral infection a failure of global health governance?


REUTERS

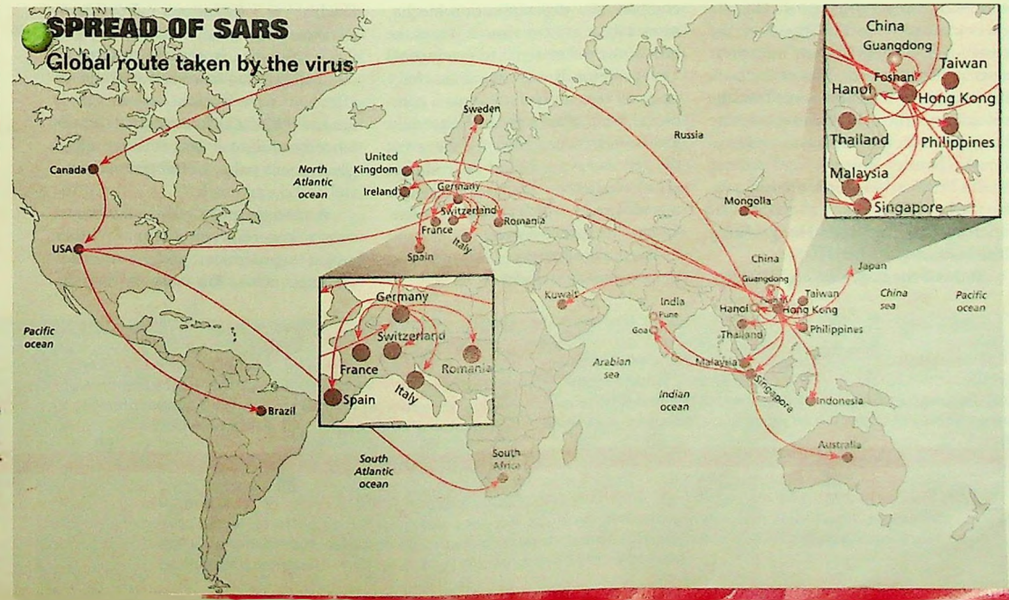
Last November, a trader in Foshan, a small industrial town in Guangdong province in China, fell seriously ill with an incurable high fever and cough. He was suspected to be suffering from pneumonia, a non-infectious disease common in the area. But then four health workers who had been treating him in the local hospital also fell critically ill. This confounded Chinese clinicians. Initially, they believed this was just another variant of the flu and countered it with traditional concoctions and high doses of antibiotics.

To be sure, the affliction resembled any pneumonia or viral infection: moderate-to-high fever accompanied by shivering, headache and body ache; after three to seven days, the formation of dry, non-productive cough. Strangely, the Chinese authorities kept the outbreak under wraps.

The panic button was pressed only after conventional treatment methods failed and more cases of the strange fever surfaced. By February, the perplexing infection got out of hand. Finally, the authorities admitted that they were grappling with an unknown pneumonia — Severe Acute Respiratory Syndrome (SARS). Yet they reluctantly permitted experts from the World Health Organization (WHO) to access hospitals in affected areas. By April, the virus causing the disease had created enough of a scare to cause mass hysteria.

From China, the virus entered the porous borders of Hong Kong. To date, the other affected areas are Singapore, Toronto and Hanoi. Hong Kong has the highest number of SARS cases after China — 2,158 infected, of which 105 have died. Singapore has 186 cases with 16 deaths; Vietnam has reported 63 cases with five deaths, while Canada had 304 cases of whom 14 have died. In USA 220 cases of SARS have been recorded. Since November 16, 2002, when the first case was reported, more than 4,059 cases and 211 deaths have been caused by the virus globally, of which 1,807 affected and 79 officially dead are in China alone. The outbreak is threatening to trigger a financial disaster like the Asian economic meltdown.

Persistent rumours about the disease did the rounds in different corners of India. Every fever death was grist to the mill. The first case was that of an American backpacker in Mumbai. Then reports came in of suspected cases from Goa, Chennai and Kolkata. On April 17, the first case of SARS was "confirmed" in Goa. A marine engineer who had been to Hong Kong was a passive carrier and had recovered after a visit to the Goa Medical College. On April 19, three



confirmed cases were reported from Pune. A bride and her family contracted SARS after her brother returned from a visit to Indonesia. The passenger seated next to him on the flight was reportedly ill. Another case was reported from Jaipur on April 21, 2003.

China continued to hush up the controversy by removing patients from isolation wards in hospitals ahead of visits by WHO officials. After startling discoveries made by them and western journalists in military hospitals in China, the Chinese health minister was asked to resign on April 19.

The pathogen's path

Several strains of influenza or flu have been named after Guangdong province, where the first SARS cases surfaced. This dubious distinction stems from the agricultural practices prevalent in the region. Rice fields support ducks and chickens, which feed on pig waste. The waste of one becomes the food of the other, resulting in a perfectly self-sufficient nutrient cycle. Helped by their ability to exist in faecal matter, conditions become ideal for viruses to evolve very quickly in different animals.

Luis Villarreal, director, Center for Virus Research, University of California, Irvine, USA, believes that China's otherwise ecologically sound agricultural systems facilitate recombination between silent viruses in farmed species and other organisms. This, he says, increases the likelihood of the emergence of new human infectious agents. "The domestication of the duck has brought a 'harmless' virus from its natural, aquatic avian habitat into the farmyard, with economic consequences for the poultry industry and serious health implications for humans," says Kennedy Shortridge, professor of microbiology at the Hong Kong University.

If this is the case, then highly potent zoonotic infections like Ebola kill many, but appear sporadically. SARS is a zoonotic — animal to human- disease that belongs to the *Coronavirus* family. Often zoonotic viruses become less virulent over time and become part of the normal disease cycle of humans. SARS could be one such example.

The virus spreads today much faster because of the integration of the world air travel, large-scale migration and crowding in cities. Hong Kong, the airline hub of Southeast Asia, was successfully exploited by the coronavirus to spread to other countries.

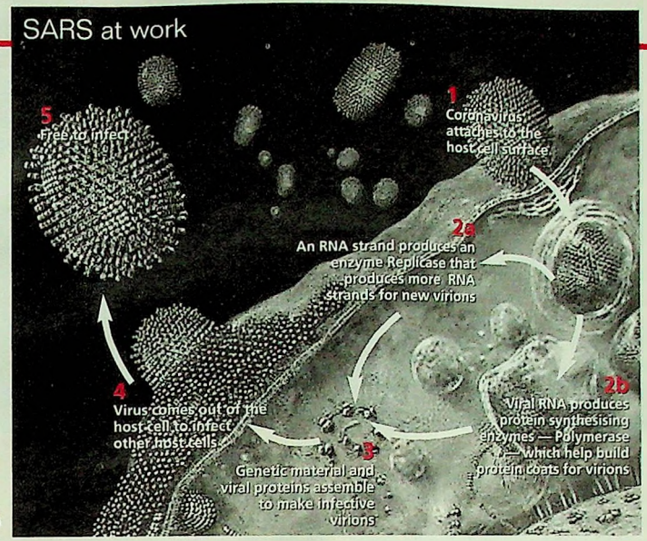
Different types of flu viruses mutate in the body of a duck, pig or human. A new strain is considered created when an imperfect version of the original survives and re-infects its hosts successfully. Chances are that the previous strains would confer cross-immunity, but very often some viruses mutate once in each host or each generation thereby acquiring additional virulence. This genetic lottery makes viruses deadly.

The first coronavirus was isolated in 1937 which caused infectious bronchitis in birds, especially in chicken flocks. Since then researchers have found its cousins to infect cattle, pigs, horses, turkeys, cats, dogs, rats, and mice. Most coronaviruses cause either a respiratory or an enteric disease, and some do both. Coronaviruses are relative giants in the virus world. Their genome has more than 30,000 nucleotides and have a complex two-step replication mechanism. Like many RNA viruses, it uses the host's nuclear material to produce all viral proteins. But coronaviruses have up to 10 separate genes and use a complex enzyme called replicase, to produce a series of enzymes. These use the rest of the genome as a template to produce a set of smaller, overlapping messenger RNA molecules, which are then translated into the so-called structural proteins — the building blocks of new viral particles (see: *SARS at work*).

There is another complication related to influenza, quite similar to the current SARS problem. Varying population density and age structures may allow for coexistence of two strains. Changes in population density or transmission potential can alter pathogen virulence. Similarly, different people of different ages have different genetic make-up which make some susceptible and others not. The phenomenon of 'superinfection' by multiple strains, where one strain can infect a host already infected by a related strain, has been confounding scientists. Co-existence means the viruses can jointly manipulate the immune system and form a mechanism to evolve into new forms. Super-infection is a prerequisite for recombinant viruses and, therefore, for new strains of influenza-like viruses. Several strains of SARS, if it follows an infectious pattern as the flu viruses, can be assembled in a single generation.

In September 1999, in a seminar organised by the US Centers for Disease Control and Prevention (CDC), based in Atlanta, Georgia, Guangdong was described as an influenza "hotspot". It was said to be the place of origin of the chicken flu virus that caused deaths and widespread panic in Hong Kong between March and early December 1997. The virus was identified as H5N1 (see: *Down To Earth*, Vol 6, No 16, January 15, 1998). In November 2001, the European Commission's (EC) Health & Consumer Protection Division found food contaminated with avian influenza strains. In this report CDC had pointed towards a need for an effective surveillance system. It is unclear if China lacks a national surveillance system, or if SARS is the result of government policy of information control and clamp down.

According to CDC, China has been a source and reservoir for many other recent epidemics and outbreaks. Hantaan virus, the cause of Korean haemorrhagic fever, causes over 100,000 cases a year in China. In 2002, the Crimean Congo haemorrhagic fever and new varieties of pertussis (whopping cough) have re-emerged here.



SARS unravelled

Between March 25 and 27, 2003, two different groups of researchers in the CDC and Hong Kong University announced that a previously unrecognised coronavirus could have caused the SARS epidemic. This family of viruses is the second leading cause of colds in children and premature infants but has never been perceived to be a serious health threat. Other labs in Hong Kong, Germany and Singapore proposed that another virus from the family of polymyxovirus could be a helper or a cause of co-infection in SARS. But on April 15, the WHO confirmed that monkeys experimentally infected with a new coronavirus developed an illness similar to SARS.

Close contact with infected persons raises the risk of contracting SARS. Transmission usually takes place through direct contact with respiratory secretions and body fluids of patients. But another recent discovery that it can survive in human faeces implies that unhygienic conditions even in homes — like moist toilets and sinks — could enable the virus to survive for long periods of time. The people who checked into the Metropole hotel in Hong Kong show that the virus can endure in the area for several days and drift through airspaces into other rooms. In E-block of Amoy Gardens apartments in Hongkong, where 213 people got infected, it is believed to have spread through leaking sewage pipes and drains. "If the SARS virus can infect from faeces and is capable of spreading via airborne sources, then we have a persistent killer on our hands," says Kiwana Thapurkakorn, influenza virologist at the Royal University of Bangkok. Cockroaches too have been alleged to carry the virus. Another strange mode of spread of SARS is that some individuals spread the virus more prolifically than others. Doctors are still not sure if such patients carry an especially infectious form of the virus or whether some other factor, such as behaviour, was the cause.

What is perplexing is that WHO confirmed on April 19 that fatality rates have risen to 5.1 per cent of the infected population from 4 per cent at the beginning. Does this mean that the virus is becoming more virulent? Or does it simply mean that treatment is inadequate?

Antivirals like ribavirin supplemented with steroids have been suggested as treatment for full- blown SARS.

Testing time

The WHO and CDC have a clinical diagnostic protocol for those affected by SARS. They have laid down clear-cut guidelines in order to prevent suspected patients from coming into contact with infected people.

A team of scientists in the department of microbiology, University of Hong Kong, was the first to succeed in culturing the viral agent that causes SARS. Using a special cell line, the Hong Kong scientists isolated the virus from the lung tissue of a patient who developed pneumonia following contact with a professor from Guangdong. Both persons have ince died. The scientists have devised a basic test that relies on neutralising antibodies. This "hand-made" technique will now be developed into a more sophisticated diagnostic test.

India's Mumbai-based SRL Ranbaxy Limited is checking for the presence of coronavirus with its influenza test panels. These can be used to identify Influenza A virus, Influenza B virus, parainfluenza virus, respiratory synctial virus (RSV) and enterovirus. According to the company, if the virus does not turn out to be any of these, the disease can be assumed to be SARS. "This is a diagnosis by exclusion," says Shishir Malwankar of Ranbaxy.

On April 16, the Institute of Medical Research in Malaysia and Germany's

Tracking SARS

15 December 2002: Two more cases detected in Guangdong hospital

16 November 2002: First possible case of SARS in a Foshan-based businessperson

7 February 2003: Claims that in Guangdong Province, 305 cases and 5 deaths have occurred between 16 November 2002 — February 7, 2003

10 January 2003: WHO reports in the Weekly Epidemiology Record for the first time of a mysterious pneumonia in China

18 February 2003: Bird flu strikes Hong Kong. A man and his nine-year-old daughter hospitalised

10 February 2003: WHO office in Beijing reinforces its staff to learn more about SARS

28 February 2003: Carlo Urbani, WHO epidemiologist in Hanoi, identifies the first case of SARS

10 March 2003: 22 hospital workers in Hanoi French Hospital with SARS

11 March 2003: The Polymerase Chain Reaction (PCR) test for detection of SARS virus made

12 March 2003: First global alert on severe atypical pneumonia with unknown etiology placing health workers at high risk

14 March 2003: WHO receives a report from Canada about four cases of atypical pneumonia within a single family in Toronto that resulted in 2 deaths

15 March 2003: Singapore government notifies WHO, of a similar illness in a 32-year-old physician

24 March 2003: CDC announces *Coronavirus* as the causative agent of SARS

27 March 2003: International travel advisories issued


AP / PTI

Singapore airport uses temperature scanners to search for SARS victims

Hamburg-based company Artus announced that they had developed the first and only commercially available diagnostic kit. Since April 12, Singapore has used a high-tech thermal-imaging thermometer at Changi airport. The device automatically checks the temperature of air travellers as they step off the plane. These sensors alert health authorities to quarantine and isolate an infected person.

But SARS is slippery. Singapore's ring-fence approach — cordoning off the infected-seems to have suffered a setback when another hospital in the city was declared to have a patient of SARS. Hong Kong on the other hand has had a significant rise because it believed in voluntary measures (self-reporting) rather than the military-style quarantining in Singapore. Germany, too, was able to isolate the single victim that reached Frankfurt airport and is reportedly keeping a keen watch.

In India, the first confirmed case in Goa was found to be a passive carrier who had crossed the "window" period. "As per WHO norms, the patient was released but asked to take rest and remain indoors," said Suresh Amonkar, Goa's health minister. Till *Down To Earth* went to press, the Pune case was the only active and confirmed SARS case. A neighbourhood in Mumbai has been reportedly cordoned off by the hapless state government.

Caught off guard

SARS is a stark reminder that there is no universal safeguard against infectious diseases. The syndrome has actually exposed the lack of preparedness with regard to infectious diseases — from hospitals, public hygiene and sanitation, to access to drugs.

David Heymann, executive director of the communicable disease programme at WHO, believes that emerging infections can be controlled by containing known risks, responding to unknown risks and improving preparedness.

When the case made headlines on March 12, in Hong Kong, it was found that the syndrome has devastated the Chinese healthcare system. With the virus reaching distant provinces and even Mongolia, Chinese authorities have been forced to clamp down on migration between villages.

While China dithered, Singapore responded by quarantining even its healthy citizens and shut all schools after the first SARS death. Taiwan has successfully prevented a potential public health crisis from mainland China and Hong Kong through its stringent seven-level surveillance systems operating since 1999. These include monitoring of poultry markets, wild birds and pig stocks. An active repository of flu virus strains is maintained that keeps track of the presence of any new strains.

In India, the two nodal agencies responsible for detecting and diagnosing suspected SARS cases are the New Delhi-based National Institute of Communicable Diseases (NICD) and National Institute of Virology (NIV), Pune. NIV would receive all samples from tests and would present results within four days. "As a precautionary measure, the Union government is only screening all incoming passengers at the international airports and ports," reveals a nodal project officer of NICD. Further, all hospitals dealing with infectious diseases in the country are required to report suspect cases to the NICD. Cases detected in any state should also be reported to the Directorate General of Health Services (DGHS). The DGHS would then intimate the NICD and send samples to the NIV.

Global preparedness against infectious diseases in recent times has been from the perspective of bioterrorism. But this cannot address the possibility of prevention from an ecological perspective. Through better sanitation and disciplined monitoring, and understanding what ecological changes can trigger release of microbes, governments can ensure that they keep ahead of outbreaks by microbes.

What is the actual cost of preparedness? A study by Dutch researchers found that an additional investment of US $120 million would be needed to avoid influenza-related mortality. But then, even a "prepared" country like the US has looked uncertain in its approach towards SARS. A study by Martin Melzer and his associates at CDC estimate that for flu control, if the current strategy is employed unchanged, would cost the economy US $71.3 billion to US $166.5 billion annually.

Meanwhile in China, international crisis management efforts are underway. The CDC has activated its emergency operations center. A similar initiative has been taken up by WHO in Hongkong, Beijing, Shanghai and Geneva. With WHO's assistance, China has developed a national SARS reporting system and elevated SARS to the status of cholera and yellow fever.

Law & beyond

To some extent, the crisis spawned by SARS is a failure of global health governance. The International Health Regulations (IHR) — a set of rules proposed by the WHO — are a legally binding framework for preventing the spread of disease across the world. These laws, however, focus on plague, cholera and yellow fever. They have not been modified significantly enough since its inception in 1969 or recent amendment in 2002.

The World Health Assembly in Geneva is specifically authorised to administer "sanitary and quarantine requirements and other procedures designed to prevent the international spread of disease". But current regulations are also restricted to the three diseases and based on outdated quarantine practices.

Even if IHR's scope was expanded to cover all infectious diseases, implementation of health-based trade barriers by member nations would throw a spanner in the works. Driven by political and economic pressures, neighbours and trading partners of countries affected by epidemics often overreact. The restrictions they impose are far in excess of those permitted by the IHR.

SARS has curtailed liberty, where individual rights are pitted against public health imperatives. Legal action can now be enforced to isolate, hospitalise, and quarantine individuals. Singapore's authoritarian government had no such reservations in imposing strict quarantines for doctors and suspected patients. A more people-friendly and cosmopolitan Hong Kong, on the other hand, did not quarantine at first, and recommended isolation, which led to rapid spread of SARS. In the long run such leniency will prove expensive. Enforcing strict quarantine will cause temporary loss of liberty but it is a decision that can prevent health damages of an unforseen nature. SARS created a wave of xenophobia — both in a tolerant Asia and in the intolerant west.

The only strict action that the World Health Assembly is authorised to take under "exceptional circumstances" is to withdraw membership privileges of a country. But such sanctions would also hinder the WHO's objectives of tracking, controlling and preventing incidence and transmission of disease.

WHO has been criticised for relying solely on information provided officially by member states regarding outbreaks within borders. Fearing self-incrimination, countries do not report diseases — as in the case of the SARS episode.

SARS appears to be a more serious threat to regional growth than the war in Iraq

Unfortunately, the current WHO regime gives individual nations the liberty to determine whether a disease constitutes a public health emergency of international concern. To some extent, the WHO's Weekly Epidemiological Record (WER) under the IHR and Global Outbreak Alert and Response Network have helped plug the loopholes. For example in the SARS case, the WER reported the SARS incidence only by January, almost two months after the first case occurred in Guangdong.

Villarreal is sceptical about legal measures: "Although a new body on international law could well decrease the likelihood of such events, laws alone will not control disease emergence. This phenomenon is possibly inherent in all living systems so I don't expect it to be eliminated."

The fallout

Hong Kong, Singapore and Malaysia have received bad economic hits. Tourism has fallen by more than 20 per cent. Hong Kong's pre-SARS gross domestic product (GDP) projection of 3 per cent for 2003 is now down to 1.5 per cent, according to Dutch Investment firm ING Financial Markets. Tim Condon, ING's chief Asia economist, observes: "SARS appears to be a more serious threat to regional growth than the war in Iraq." Regional forecasts done for these countries by Merrill Lynch also show lower growth. Ironically the GDP of China is expected to go down by a mere 0.1 per cent. This is because China's agricultural and manufacturing base can offset losses to tourism and the services sector. Airlines, cargo and courier services and the telecommunication industry have been affected worldwide. "If the SARS episode is linked to domestic animal origin, then we can see a significant decrease in the near future of agriculture exports largely because countries will put non-trade barrier to goods from the region", opines John Cheung, director of international trade services, government of Taiwan.

The battle may have just begun. ■

Story co-ordinated by Pranay G Lal, with inputs from D B Manisha, Sarita and Vibha Varshney

29 March 2003: 213 cases of SARS confirmed in Amoy Gardens, a high-rise residential area in Hong Kong. Carlo Urbani, who detected the first case of SARS, dies of SARS

12 April 2003: One case of SARS observed in South Africa

14 April 2003: Scientists map suspected SARS virus genome

18 April 2003: First case in Goa, India, reported: a marine engineer who had travelled all over South Asia

Cases: 2,722; Dead: 106

10 April 2003: Three US health workers detected with SARS

13 April 2003: Death toll in Hong Kong rises to 40

15 April 2003: Situation still grave in China. number of deaths: 56, and 42 new patients

18 April 2003: About 150 boarding school pupils arriving back in Britain from Asia taken to quarantine camps

20 April 2003: China's official number of SARS cases account for about half the world's total. China sacks its health minister and Beijing's mayor on Sunday after reporting a huge increase in SARS

22 April 2003: Suspected case of SARS found in Jaipur

Cases: 3,947; Dead: 229

19 April 2003: 12 people die in Hong Kong, the highest number of fatalities in a single day

20 April 2003: One man dies and 14 more reported to be affected, raising the number of cases to 204 in Canada

21 April 2003: Three confirmed cases of SARS in Pune, India

Deal shelved

Chhattisgarh decides to scrap a privatised water supply project. What happens next?

SOPAN JOSHI/CSE

Who will own this anicut now?

THE Chhattisgarh government has decided to cancel the agreement under which a project to supply water from Sheonath river to factories was leased out to a private company. At a high-level meeting on April 2, chief minister Ajit Jogi instructed the advocate general, Chhattisgarh State Industrial Development Corporation (CSIDC) and the departments of water resources, public health engineering and legal affairs to scrap the deal immediately. The departments are yet to submit their reports. The deal had become the rallying point for groups opposed to privatisation of water supply, who termed it as the 'selling of a river'.

In the eye of the storm is a 'build-own-operate-transfer' (BOOT) agreement signed in 1998 between the Madhya Pradesh government and private firm Radius Water Limited to supply water to the Borai Industrial Growth Centre in Chhattisgarh's Rajnandgaon district. A stretch of 23 kilometres of the river was ceded to Radius Water Limited, which is developed and owned by Kailash Engineering Company Limited.

Adverse reports in the media made the state government distance itself from the agreement. It asserted that the pact was signed before Chhattisgarh's creation in November 2000 (see: *Down To Earth*, Vol 11, No 18, February 15, 2003). With elections to the state legislature due later this year, the decision to cancel the project is in line with the popular sentiment. The two main criticisms of the project were:

- Residents of villages surrounding the project area were not consulted. They feel cheated by the fact that their traditional rights and access to the river have been restricted.
- The agreement ensured payment for a minimum of four million litres of water per day by the state government, regardless of the amount of water used. CSIDC lost Rs 1.29 crore between December 2000 and June 2002. This is because water-intensive factories haven't come up as had been expected.

Now, the issue is: what happens to the project? Who will own the anicut built by Radius? Who will decide about the usage of water? What will be the nature of the settlement with Radius? CSIDC does not have the money to pay back the company, which had taken a loan to build the anicut.

Shakrajit Nayak, state minister for water resources, says his department would pay the compensation and would settle the loan for the ar... would also decide the amou... back. The anicut is seen as ... series of similar structur... department has planned fo... of Sheonath and the Mahar...

This region is categoris... shadow area, and a propos... cuts in the two basins has ... the Union government f... support. Nayak says work h... six anicuts, which are exp... ready before the monsoon s... the water supplied to t... would be priced at Rs 0.4... litres, according to Nayak v... gation would be provided f...

The agreement also m... possibility of an effluent tre... for the water-intensive i... Borai. But the future of th... uncertain, as it is not clea... not the state government ... ahead with the plan. ■

Unprecede...

Madhya Pradesh set... precedent

TWO recent developments ... the forest dwellers of Ma... (MP). Firstly, under the joi... agement plan (JFM), fore... committees in the villa... receive all revenue collecte... timber and bamboo. And ... MP government has decid... late the trade of minor fo... (MFP). The significance of ... be gauged from the fact th... of the people inhabitin... forests depend on MFP ... their livelihood.

The state governme... intense opposition from ... to implement the new rev... plan under JFM. Until no... bodies used to get 10 per ce... ber revenue and 20 per cen... ceeds from bamboo sales. ... decision would, therefor... earnings of the forest pro... mittees considerably. MP is ... state to take such a step un...

During the past two ye...

DIS-21.

Unhealthy POLITICS

BY RODERICK MACFARQUHAR

CHINA'S SARS EPIDEMIC has its Communist Party leaders on their heels. Not since the 1989 student uprising in Tiananmen Square has its leadership been so exposed to the humiliating glare of international scrutiny and criticism. The cancellation of prestigious conferences in the capital and the potentially precipitous drop in foreign trade and investment as foreigners obey the World Health Organization's advisory to shun Beijing are embarrassing enough. Worse is the image of China's leaders behaving in feckless fashion, putting politics before people.

The leadership's perennial obsession with secrecy led it to prevaricate about the extent of the disease in the capital for five months. The rationale seems to have been a desire to avoid public panic during the passing of the torch to new leaders at the Party Congress last November and the National People's Congress in March. But in truth, the party has always carried the "hear no evil, see no evil, speak no evil" policy—preferred by bureaucrats everywhere—to extraordinary lengths. The assignment of the 2008 Olympic Games to Beijing augured for many China's arrival in the modern world. But the SARS epidemic has revealed the early-20th-century Leninist paranoia that still infects the behavior of China's leaders, and the Third World nation that lingers behind the glittering skyscrapers of Beijing and Shanghai.

The public-health crisis is also beginning to pull back the curtain that hides the divisions within the party itself. Clearly, the honeymoon is over for the new leaders, President Hu Jintao and Premier Wen Jiabao. Whether praise for the energetic measures they have taken to contain the epidemic ultimately outweighs blame for concealing it will doubtlessly depend on the human toll SARS exacts. The public-relations battle will be fought out partly through the ubiquitous urban Residents' Committees, the asphalt-level apparatus through which the party confronts its subjects. But for China's leaders the popular mood will be of less consequence than the factional struggle within the party.

When Hu took over in March, he did not inherit the full panoply of China's leadership posts. His predecessor, Jiang Zemin, retained the key chairmanship of the party's Central Military Commission. Jiang also seeded a significant number of his "Shanghai faction" in the ranks of the new Politburo, orchestrated by his main trusty, Vice President Zeng Qinghong, a brilliant political operator. At the time Jiang gave every appearance of leaving office reluctantly, and having bowed to necessity he

FREDERIC J. BROWN—AFP

More an Actor Than a Leader

WHEN I MET YASIR ARAFAT FOR THE FIRST TIME, IN 1996, I was struck by the contrast between his revolutionary appearance—with his uniform and his gun—and his soft-spoken manner. That hasn't changed. He has a fragile, seemingly helpless physical appearance, but according to Israeli intelligence files he's a corrupt terrorist. I watched him through the gun sights for 20 years, and then spent time with him around negotiating tables at Camp David and elsewhere. I gradually found him to be a sophisticated manipulator, more an actor than a leader, holding a mirror and a weather vane to find his way, rather than a compass.

Arafat is a man of the past. Yes, the Palestinian crowds still cheer for him, and the struggle that preceded the formation of Abu Mazen's government shows that he still retains power. He remains a living symbol of the Palestinian national movement. But since the attacks of September 11, 2001, and the war in Iraq, a new chapter in Middle East history has been opened, and it has no natural place for him. Hence, within a year or two, I believe, Chairman Arafat will begin his march into history. He has failed to rise to the challenge of historic leadership, and has thus become a source of tragedy for his own people.

TIMOTHY JACOBSEN—GETTY IMAGES

NOT LEADING: Barak, Clinton and Arafat

Last week's release of the Roadmap is a demanding, and potentially damaging, challenge to Arafat. It was launched only after Arafat was coerced into accepting the executive triumvirate of Abu Mazen (whose formal name is Mahmoud Abbas), Muhammad Dahlan and Salam Fayad. Abu Mazen, the Palestinian prime minister, will deprive Arafat of some executive power. Dahlan, the minister of internal security, is supposed to crack down on Hamas and Islamic Jihad as well as on Arafat's own Aqsa Martyrs Brigades. And Fayad, the Finance minister, will try to find the Palestinian money that's trickled into the private accounts of Palestinian leaders, and to establish new, transparent and accountable institutions.

They will not have an easy time, mostly because it's not in Arafat's interest for them to succeed. If they implement reforms and move toward reconciliation with Israel, honest Palestinians might wonder who was responsible for the thousands of Palestinian lives that have been lost in a vain attempt to dictate a political solution to Israel through homicidal bombings. As long as Arafat holds power, there will be no Israeli-Palestinian peace. Orwellian double-speak and treachery will prevail.

Chairman Arafat has failed to rise to the challenge of historic leadership, and has thus become a source of tragedy for his own people

The Israeli-Palestinian peace process is a painful divorce that should be executed for the benefit of both sides. Israel should give the Roadmap a fair chance to succeed. Illegal settlement outposts should be dismantled. The rule of law should be followed by all. Ways should be found to ease daily life for Palestinians. If and when the Palestinians launch a coherent and determined crackdown on all terror groups, then Israel will have to use common sense and not let a single attack stop the peace process. But we're not yet there. And Israel cannot be expected to step forward before statements turn into action on the Palestinian side. The opportunity is here, but the challenge is immense.

There have been opportunities before—as the late Israeli foreign minister Abba Eban used to say, "The Palestinian leadership has never missed an opportunity to miss an opportunity." The Israeli-Palestinian conflict, I once told Arafat, is one of the most complicated conflicts on earth, and it won't be solved unless human beings are ready to make decisions and put an end to it. We happen to be the human beings in charge, I added, and the price of our failure will be the loss of thousands of innocent lives on both sides before our successors return to the negotiating table to solve exactly the same issues. Yet in July 2001, Arafat rejected the Camp David proposal as a basis for negotiation and deliberately turned to terror.

Last week President Bush, addressing the American people from an aircraft carrier, said that whoever commits terrorist acts, or supports or harbors those who do, is the enemy of the United States. No one better fits those descriptions than Arafat. He has engendered hatred in a generation of Palestinians, poisoned the souls of millions of young Arabs and Muslims around the world. But beyond that, he represents a failure of character and leadership. If the Palestinians had a leader like Egypt's Anwar Sadat or Jordan's King Hussein, we would have had peace by now.

At decisive moments leadership is about moving against the stream, asking yourself not what the people want right now, but rather what the people need in the long term and what should be done about it now. It's not easy; leadership has its risks. You might lose your office, like Mikhail Gorbachev. You can even lose your life, as happened to Sadat, Yitzhak Rabin and Abraham Lincoln. But when leaders aren't ready to lead, many other people have to pay the price. That is the failure of Arafat.

BARAK was Israel's prime minister from 1999 to 2001.

With no cure in sight, China's SARS epidemic has set off a tussle for power in the upper reaches of the Communist Party leadership. The country's political virus could linger long after the health hazards.

seems determined that his faction should preserve his legacy in the people's eyes as the third member in an apostolic succession—Mao, Deng and Jiang.

Today, when every Chinese leader is of a reformist bent, the endemic factionalism in the leadership appears to be driven more by personality than policy. Most Western observers assumed that power plays between Hu and Jiang would begin in earnest in several years when Hu began to lay the groundwork for a second term. The SARS epidemic could be the catalyst for the struggle to begin now. As the senior civilian overseeing the military, Jiang has ultimate responsibility over the capital's military hospitals. The military's initial refusal to reveal the number of their SARS cases led to China's international humiliation when the full extent of the epidemic in Beijing was finally revealed. Was Jiang kept ignorant or was he trying to protect his power base from external interference?

Most party officials would probably like the military made subservient to the civilian bureaucracy and deprived of its special relationship to Jiang. The military's insubordination in the early stages of the crisis may be an opportunity for Hu to whittle away Jiang's power base. But he is proceeding cautiously. One of the two principal scapegoats so far, the minister of Health, was certainly a Jiang protégé, but the other, the mayor of Beijing, was one of Hu's men—almost certainly a sacrifice to prevent a backlash from Jiang loyalists. And significantly, the more powerful Beijing official, the party's first secretary—also of Jiang's clique—escaped with only a public self-criticism. Hu cannot go too far too fast.

QUAO NIN—REUTERS

MAY DAY: Tiananmen Square was eerily empty during the workers' holiday, save for a few police (inset)

But he is not entirely alone either. Hu has found a potent ally in Wen Jiabao, a protégé of Jiang's former political opponent, Zhu Rongji. Indeed, Hu appears to be exploiting the moment to employ a number of officials from Zhu's circle. Known as the "Iron Lady," Vice Premier Wu Yi—the highest-ranking woman in the government—was appointed last week as chief of the leadership team overseeing the battle against the deadly virus. And Wang Qishan, also a longtime Zhu protégé, is now serving as the acting mayor of Beijing.

For their part, Jiang and his frontman, Zeng Qinghong, know it would be fatal to seem to be endangering the anti-SARS campaign in the interests of scoring political points. So, much will depend on the success of the campaign. If SARS is quickly contained, the position of Hu and Wen will be greatly strengthened. It is hoped they might be emboldened to experiment with greater transparency in other spheres of public life. But if the epidemic spreads through large parts of the country and primitive rural medical care proves unable to cope, then Jiang could point out that the epidemic burgeoned only after Hu took over the party. Either way, the political virus unleashed by China's SARS crisis may persist longer than the health hazards.

MACFARQUHAR is the Leroy B. Williams Professor of History and Political Science at Harvard University.

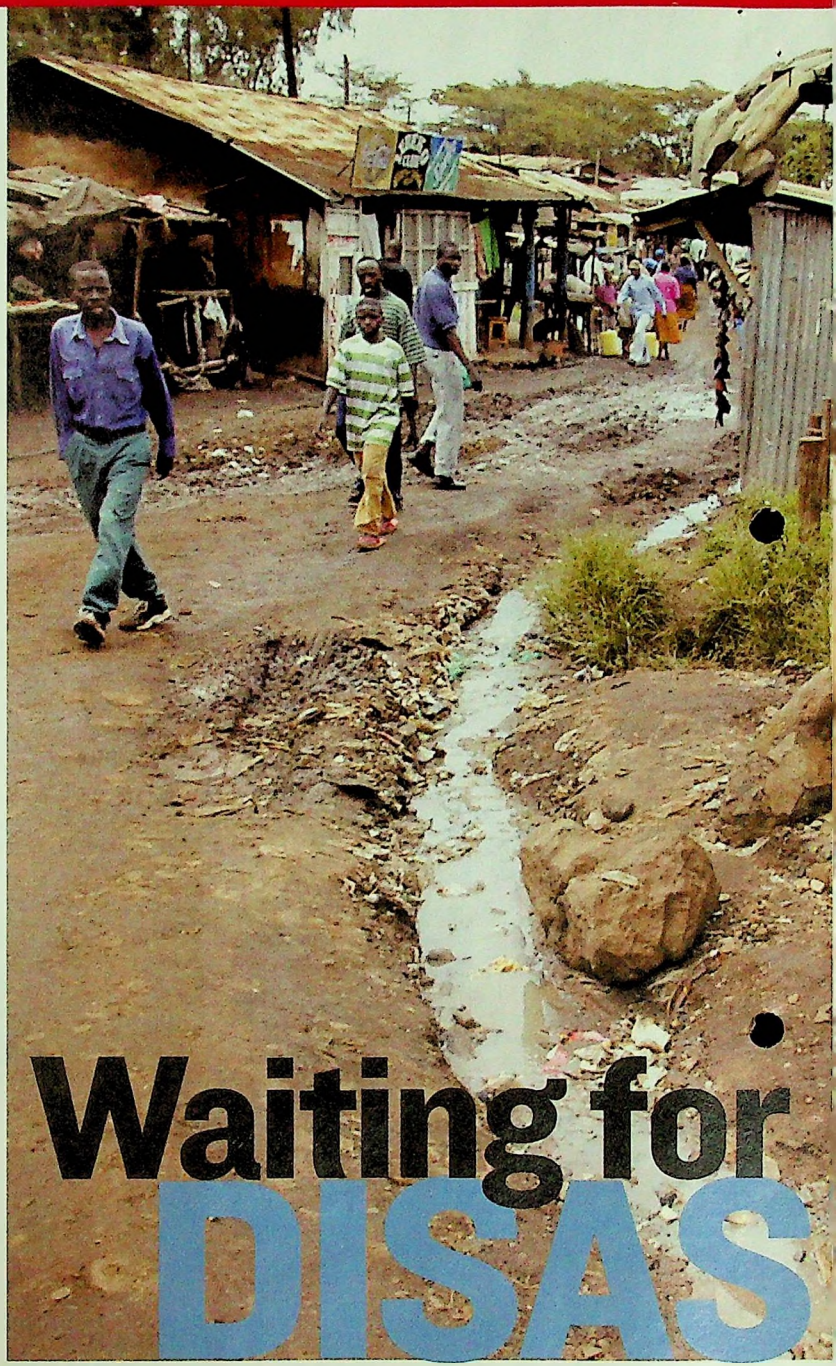
Waiting for DISASTER

The slippery SARS virus is giving rich countries plenty of trouble. But doctors fear the real devastation could come in the developing world.

BY TOM MASLAND

THE KILLER SARS VIRUS traveled to Barangay Vacante from one of the world's most modern cities. Adela Catalon probably caught the virus in Toronto, where she worked at a nursing home, and brought it to the Philippines when she returned to care for her ailing father. She visited three provinces before falling fatally ill. Her father, Mauricio, whose immune system had already been weakened by a bout with abdominal cancer, also died from SARS. Police ordered 210 Barangay Vacante residents to stay home, and local health officials went door-to-door twice a day to check up on them. That didn't stop some residents from slipping away on foot to shop in the nearby market town of Alcala. To persuade them to stay put, the government rushed in dried fish, rice and canned goods.

Such are the simple tools deployed against severe acute respiratory syndrome in the so-called developing world. Even rich countries haven't exactly produced a lightning victory against the disease. Last week, just as the World Health Organization lifted its travel advisory for Toronto, Canadian health officials announced two new cases. And scientists in Hong Kong raised the frightening possibility that patients who have already recovered from the disease may still infect others. What if SARS holds another punch for the world's poorest countries?

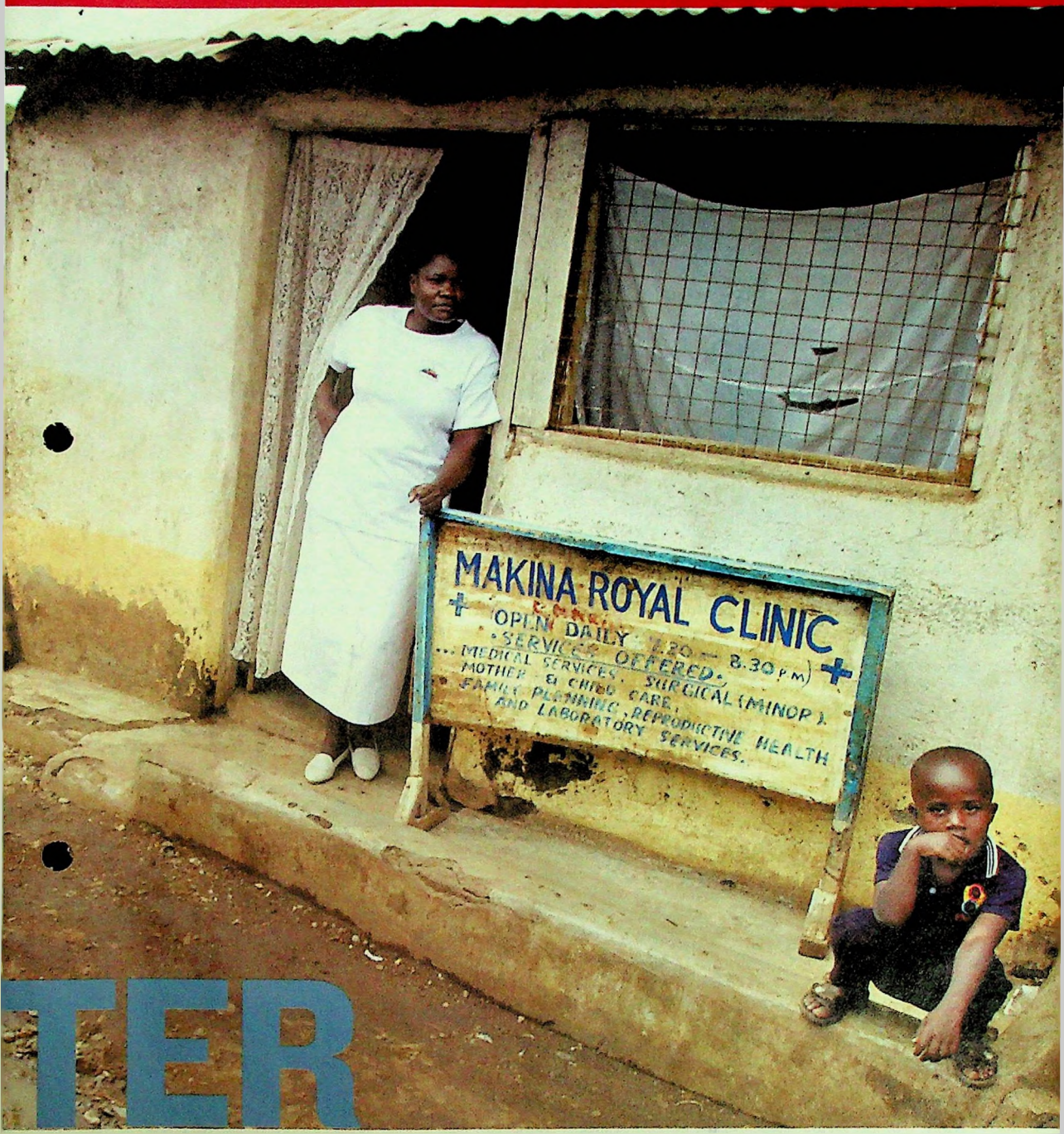


VULNERABLE: Health clinics in the Kibera slums of Nairobi aren't ready for SARS

The prospect has health experts in South Asia and Africa, in particular, on edge. So far India has kept its 19 mild cases from turning into an epidemic, and only one case has cropped up in Africa. With the disease on the wane in Vietnam and leveling off in Bangkok, it's possible that SARS won't become a pandemic. But it's far from a sure thing. The epidemic is still raging in China, only a plane ride away from vast populations of vulnerable people. Thirty million HIV-infected Africans, who have compromised immune systems, are sitting ducks for the disease, warned Luc Montagnier, one of the discoverers of the AIDS virus. Millions more people sick with malaria, hepatitis and bilharzia are similarly at risk. A recent report from the World Health Organization sounds an ominous note: "Nearly two thirds of all the patients who die in all age groups already suffered from chronic diseases." Dr. Alfred Jumba, who works in the eight-bed Vipawa Medical Center, one of the main health-care facilities in the teeming Nairobi slum of Kibera, says, "This is potentially devastating."

The Philippines is better off than many

PHOTOGRAPH BY SVEN TORFINN FOR NEWSWEEK



developing countries, but it is hard-pressed to defend itself against SARS. Unlike Hong Kong, which has erected virtual holiday camps for its SARS victims, or Singapore, which has installed video cameras to police urban areas, it makes do with the 2 percent of its annual budget that goes to health care. Officials say they can't afford to buy gloves and masks for nurses. The Philippines' trade minister said last week that the country has run out of N95 face masks. "We are hoping that the WHO will help us out," says Dr. Troy Gepte, a government spokesman. People are turning to home preventions like papayas and ginger-and-garlic infusions.

Indian health officials have even more cause to be jittery. None of the country's 19 SARS victims so far has died. But with a billion people crammed together, a fifth of them in megacities like Mumbai and New Delhi, the Subcontinent is ripe for a SARS epidemic. Only a quarter of all Indians have toilets; SARS, scientists suspect, can be spread by feces. A major outbreak of SARS

WARY: Taking temperatures in Manila (above, left), lecturing on SARS in India

would overwhelm India's health-care system. The country has fewer than five physicians per 1,000 people and one small community health center for every 80,000 people. The government's drive to promote family planning has starved other health services of funds. "The danger is extremely great," says Ghanshyan Shah of Delhi's Jawaharlal Nehru University. "Over time the health system has become weaker and weaker."

Because most Indians aren't covered by health insurance, many may wait too long before reporting to the rudimentary health clinics serving rural areas. India's plan to use airports as a first line of defense doesn't inspire confidence either. Although all arriving passengers are required to fill in questionnaires, many say they haven't been asked any questions once they've landed.

African health officials cast a worried eye toward India. Here's their nightmare scenario: An expatriate Indian from Nairobi returns to Mumbai, where some SARS patients live, for a visit. He comes home and infects his housemaid. She in turn spreads the virus to Kibera, Kenya's largest slum. There, working in shacks with signboards out front, local staff are trained to diagnose familiar diseases like flu or malaria—but not SARS.

Whatever the route might be, Africa lacks the ability to fight SARS. Suspected carriers should be quarantined, and victims need an intensive-care unit and an isolation ward, equipped with respirators and staffed by specialists trained in so-called barrier nursing. But even in Kenya, one of Africa's best developed countries, only 10 respirators are available for isolation rooms. Ghana, another well-off African country, is equally at risk. "In the whole of Ghana there are only a few isolation units with respirators," says Dr. Peter Ottengraf, who works in the capital, Accra.

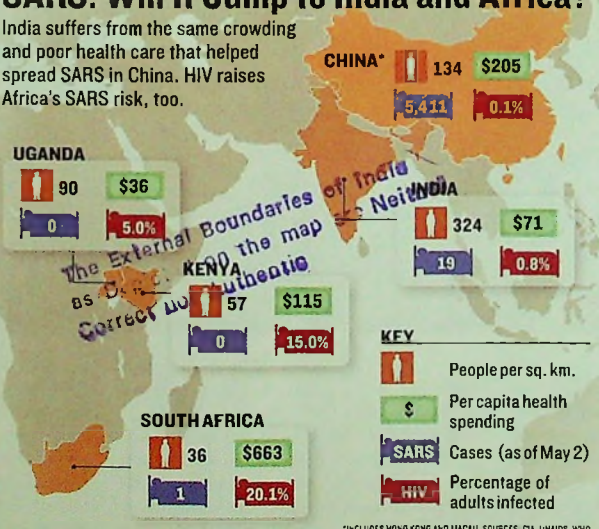
The presence of HIV makes the situation potentially catastrophic. Most AIDS patients in South Africa, which has the world's highest incidence of the disease, go untreated. State hospitals are overwhelmed with tuberculosis patients, many weakened by AIDS. "We are already living a nightmare here," says Dr. Steve Andrews, a Cape Town AIDS specialist. "Six hundred people are dying each day from AIDS in South Africa, but if SARS comes into a community, it may be as bad as the 1918 influenza outbreak."

The South African government, Africa's best-heeled administration, has deployed its defenses quietly in order to avoid sowing panic. With no fanfare, it opened a 24-hour clinic at Cape Town airport for checking international visitors for SARS symptoms. All airports are now required to check each airplane from an outbreak country. A public-heath officer boards the plane, addresses the passengers and hands out cards listing SARS symptoms and phone numbers to call for help. Health officials will track those who seem ailing. The government has also created outbreak-response teams and designated hospitals for suspected SARS patients. "People now know about SARS, they are worried about the symptoms and those who fly here with the disease will let medical people know immediately once they feel sick," says one South African specialist. "But what about their gardener or maid, who lives in the township, and goes home that night with a cough?"

It hasn't happened so far. And for now, the south's best chance is that the rich north stamps out SARS before it rolls into a slum like Soweto. "Let us hope that the WHO manages to keep it under control," says Dr. Jumba in Nairobi's Kibera slum. Millions of lives hang in the balance.

SARS: Will It Jump to India and Africa?

India suffers from the same crowding and poor health care that helped spread SARS in China. HIV raises Africa's SARS risk, too.



*INCLUDES HONG KONG AND MACAU. SOURCES: CIA, UNAIDS, WHO

With ERIN PRELYPCHAN in Manila, IAN MACKINNON in New Delhi, TEIJE BRANDSMA in Nairobi and JEFFREY BARBEE in Cape Town

FROM LEFT: ERIK DE CASTRO—REUTERS, AMAN SHARMA—AP

The Perils of PARANOIA

The true cost of the SARS crisis may be a lot less than many economic forecasters are predicting

BY GEORGE WEHRFRITZ AND ALEXANDRA A. SENO

SARS HAS TURNED MICHAEL O'Keefe's business upside down, but not for the reasons you might think. As a risk consultant at Kroll International, he normally plays the voice of caution. Not now. In Japan, which has yet to confirm a single case of SARS, he's telling clients that draconian emergency measures—from bans on corporate travel to quarantines for employees who have visited Asia even briefly—are "overkill." His advice: be prudent, but recognize that SARS is not an Asia-wide pandemic, even if it looks like one in headlines. "Just because there's a sick man in Asia," he says, "doesn't mean all of Asia is sick."

Amid warnings from prominent economists that SARS threatens to produce a financial crisis as bad as the 1997-98 Asian currency contagion, it's time for a reality check. SARS has crippled travel, transport and retail industries, but the damage is largely confined to a few "hot zones" like Hong Kong, Singapore and, most recently, China. No, SARS isn't all in our heads, but predictions of an economic disaster assume a regionwide epidemic, which now looks less and less likely. "In my 28 years in Asia, I have never seen such blind panic," says Steve Vickers, CEO of International Risk, a security consultancy. "I've heard about people in Europe concerned about packages coming from Asia. DHL takes 36 hours; viruses don't last that long."

In a report released late last month, the World Bank lowered its growth forecast for Asia from 6 percent to 5 percent, which puts the cost of the SARS epidemic at roughly $30 billion, a tiny fraction of Asia's losses in 1998. The study attributed most of the losses to panic, not illness, noting that "in the short run, the economic consequences arise almost entirely from public perceptions and fears about the disease—and from precautions the public is taking against it—rather than from the disease itself."

That observation should quiet melodramatic comparisons of the SARS scare to the Asian contagion. Back then, all of Asia fell into a serious recession, with regionwide growth plummeting from 8.3 percent in 1996 to 4.4 percent in 1998; in Thailand, Malaysia, and Indonesia, tens of millions fell into poverty. Even China (which cooked its books to hide the impact) saw GNP growth fall to as little as zero percent by some estimates. In comparison, SARS is a paper contagion.

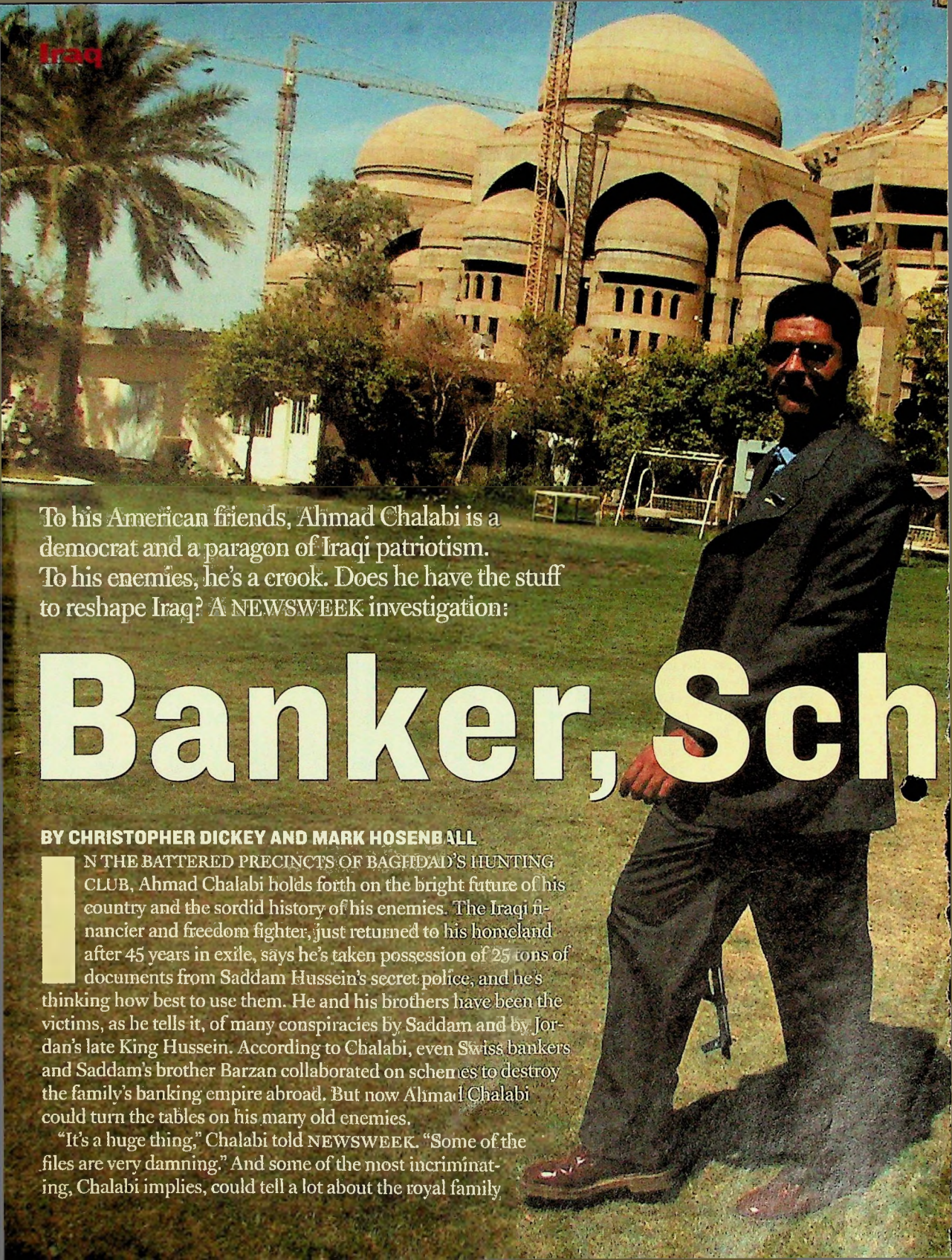
RARE RESPITE: Hospital workers outside a SARS clinic in Beijing

Consider the epicenter of the SARS crisis, Hong Kong. "The lobby of the Mandarin Hotel is empty, sure, but this is pent-up demand, not destroyed demand," says Enzio von Pfeil, CEO of advisory group Commercial Economics Asia, adding that media accounts of the city's dismal prospects are "90 percent based on fear, 10 percent based on reality." By the numbers, tourism accounts for about a tenth of Hong Kong's GDP, so drops in air travel, hotel occupancy and general tourist spending could push the economy into recession this year. But trade, the city's lifeblood, remains largely undisturbed. "It's business as usual for most companies here," says Frank Martin of Hong Kong's American Chamber of Commerce. Traffic at Kwai Chung—the world's busiest deepwater port, which deals mainly in China cargo—has not slowed a bit.

The voices of reason are not getting much airplay these days, however. Pradumna Rana, director of the Asian Development Bank's Asia Recovery Information Center, says Asian countries are healthy enough to defend their economies against short-term capital pressures should they arise, and the region has foreign-currency reserves 400 percent larger than in 1996. Mark Mobius, emerging-markets guru at Franklin Templeton Investments asset management, remains unruffled by SARS after recent business trips to Singapore, Hong Kong and China. "In a few months we will see a return to a normal dynamic economic environment and growth will pick up again," says Mobius.

Even in China, where SARS remains out of control, the outbreak looks like a bump in the financial road. "I don't see SARS destabilizing China's economy," says Cesar Bacani, author of "The China Investor." "The momentum from trade, investment, restructuring and growing household affluence is simply too strong." Last week the World Health Organization lifted bans on travel to Singapore and Vietnam. If those states can contain SARS, why not China? "Once China's leaders focus on problems, they usually manage to resolve them—sometimes with brutal efficiency," a Goldman Sachs report concluded. "You may call that a virtue of authoritarian government." It's also another reason not to fear contagion.

With B. J. LEE in Seoul



To his American friends, Ahmad Chalabi is a democrat and a paragon of Iraqi patriotism. To his enemies, he's a crook. Does he have the stuff to reshape Iraq? A NEWSWEEK investigation:

Banker, Sch

BY CHRISTOPHER DICKEY AND MARK HOSENBALL

IN THE BATTERED PRECINCTS OF BAGHDAD'S HUNTING CLUB, Ahmad Chalabi holds forth on the bright future of his country and the sordid history of his enemies. The Iraqi financier and freedom fighter, just returned to his homeland after 45 years in exile, says he's taken possession of 25 tons of documents from Saddam Hussein's secret police, and he's thinking how best to use them. He and his brothers have been the victims, as he tells it, of many conspiracies by Saddam and by Jordan's late King Hussein. According to Chalabi, even Swiss bankers and Saddam's brother Barzan collaborated on schemes to destroy the family's banking empire abroad. But now Ahmad Chalabi could turn the tables on his many old enemies.

"It's a huge thing," Chalabi told NEWSWEEK. "Some of the files are very damning." And some of the most incriminating, Chalabi implies, could tell a lot about the royal family

The SARS epidemic

Even as the SARS virus arrives in India, with the first case being reported from Goa, laboratories under the WHO continue to explore ways to counter the rapidly spreading disease.

R. RAMACHANDRAN

WITH the spread of Severe Acute Respiratory Syndrome or SARS, a hitherto unknown atypical form of pneumonia, to more and more countries as a result of international travel, India could not have escaped for long. Since February 26, when the first case was detected in Hanoi, SARS has spread to 27 countries, including India. The first case of SARS in India was identified on April 16, in Prasheel Varde, a 32-year-old marine engineer from Goa. He had travelled to Hong Kong and Singapore – both categorised as SARS 'affected areas' or hot zones – before returning to India on April 1.

A diagnostic test based on the Polymerase Chain Reaction (PCR) done by the Pune-based National Institute of Virology (NIV) confirmed the presence of the SARS virus in samples of the patient's blood, sputum and urine, which were sent by the Goa Medical College Hospital (GMCH) where he was being treated. In a press briefing on April 17, officials from the Health Ministry said that all the samples were found to be positive for the SARS virus. However, it is curious that even though the samples indicated the presence of the virus in the blood stream, the patient showed no clinical symptoms characteristic of the disease – high fever, cough, breathing difficulty and, most importantly, signs of pneumonia or respiratory distress syndrome in a chest X-ray.

Thus, the Indian SARS case, with an apparent mismatch between clinical symptoms and the diagnostic test, is a unique one. Since the cause or the aetiology of the disease was unknown till about four weeks ago, the case definition has been done solely on the basis of clinical symptoms specified by the World Health Organisation (WHO). Of the 3,461 suspected and probable SARS cases reported worldwide so far, the WHO has recorded the Indian case as one that has recovered.

Diagnostic tests are being developed after the causative agent was identified recently as a hitherto unknown form of coronavirus, a family to which the common cold virus belongs. But all the three different tests – Enzyme-Linked Immunosorbent Assay (ELISA), Immunofluorescence Assay (IFA) and PCR – seem to have their limitations. A PCR test that was developed in early April by the Centres for Disease Control and Prevention (CDC) of the United States is stated to be effective only in the early stages of the disease.

However, with the isolation and genetic sequencing of the SARS virus, primers – pieces of genetic material that are specific to a given virus and are the key pieces for a PCR test – have been made available to laboratories around the world by the Hamburg-based Bernhard-Nocht Institute for Tropical Medicine (BNI), one of the laboratories in the WHO consortium for research on SARS aetiology. Arcus Biotech, a Hamburg-based firm, has developed a real-time, ready-to-use PCR diagnostic kit that uses primers. The company has offered to supply these kits, which became available since April 14, free of cost to laboratories participating in the WHO network of 13 laboratories from 10 countries. No Indian institution is part of this network. Therefore, in all likelihood, the NIV test is based on the primer sequences that were made available by the WHO on its website.

According to Kumar Rai, head of the communicable diseases wing at the WHO's Regional Centre in New Delhi, as diagnostic tests are still being developed, there is also a high probability of the test indicating a "false positive" result. Christian Drosten, the BNI scientist who was responsible for identifying the primers and developing the PCR test, said: "The case definition of SARS does not include findings in PCR. Results of PCR can be used to complement clinical diagnostic evaluation. However, tests have not been validated for confirmation of cases or exclusion of the disease." Therefore, it is unclear why the WHO decided to confirm the Indian case, which is based entirely on the PCR test, as an instance of SARS.

PRASHEEL Varde, his wife and his father had sailed from Hong Kong, where they stopped for four hours on March 26, to Singapore, where they spent a couple of days. On April 1, the three arrived in Mumbai, where they spent a couple of days, before reaching Goa on April 4. On reaching Goa, Prasheel developed fever and cough and on April 8 he went to a private medical practitioner, who referred him to the medical college hospital. There, he was kept under observation from April 10 to 12 in an isolation ward and was treated with antibiotics. The treatment was effective, and since his X-ray did not reveal any pneumonia patch, he was discharged. Although the hospital had sent his samples to NIV for testing, by the time the test results became available on April 14, he had been discharged.

And in a strange and inexplicable move, on April 14 it was decided that he

Feature on ICF

The following is a communication received from M.V. Ramani, General Manager, Integral Coach Factory, Chennai:

Frontline (April 25) has carried a feature on ICF, which also includes an interview with me. While the feature has been well brought out, I would like to point out some inaccuracies in my replies to the interviewer, which will not in any way change the correct meaning and significance of my responses.
I am indicating below these details so that a correction can be published in your magazine:

Page no.	As it appears	Corrected version
110 (col.2)	In fact, casualties are higher due to the cumulative weight caused because of the collision *per se*.	In fact, casualties are higher due to the added weight of the coaches which have climbed on top which results in crushing of the coach and these damages are not attributable to collision *per se*.
110 (col.2)	Technically it is all right.	Technically it is cleared.
110 (col.3)	.... consequential effects of an accident will come down by up to 20 per cent of what they are now.	.... consequential effects of an accident will come down by 20 per cent of what they are now.
110 (col.3)	Now we paint a coach every year, but	Now maintenance workshops paint a coach every year, but ....
112 (col.1)	There is a set system, nationally and internationally.	There is a set system as per national standards.
112 (col.1)	We were re-certified last month (February 2003) under ISO 9000.	We were re-certified last month (February 2003) under ISO 9000 – 2000 version.
112 (col.2)	This also makes the self-certification process serious.....	This also makes the self-certification process effective....
112 (col.3)	We made Metro coaches (16 rakes of six cars each)	We have to make Metro coaches (16 rakes of six cars each)
114 (col.2)	We will focus on our core strength – the running car, the steel shell and the structurals.	We will focus on our core strength – under carriage, the steel shell and the structurals.
114 (col.3)	.... As and when high-speed bullets are fired on to the coach.	.... As and when high-pelnets are fired on to the coach.
114 (col.3)	We are trying to modernise the basic fabrication and the assembly of the bottom of a coach.	We are trying to modernise the basic fabrication and under carriage of the coach.

I.G. Khan

I read with shock and deep sorrow the news of the brutal murder of Dr. I.G. Khan (April 11). He was a front-ranking historian of medieval India. He represented in his work and in his personality the best traditions of Aligarh historians. I was privileged to come into contact with him in Britain and experience his charm and graciousness. His social commitment and his ability to combine a scholarly vocation with trade union work among the rickshaw-pullers were admirable.

I am, however, saddened by the fact that the killing of such an intellectual has not been taken up as a campaign issue by the national media. I hope the CBI inquiry will lead to the early apprehension and conviction of the culprits.

Gyanesh Kudaisya

Singapore

Sena's overtures

This has reference to "Opportunistic overtures" (April 11). Keeping in view the 2004 Assembly elections in Maharashtra, the Shiv Sena has proposed an alliance with the Republican Party of India. But the RPI is a divided party with four factions, headed by Ramdas Athavale, Prakash Ambedkar, R.S. Gavai and Jogendre Kawade respectively. Dalit leaders have been unable to come together, let alone work together for the welfare of Dalits. Factionalism has been a major hindrance to Dalit consolidation. The leaders must come together to form a united RPI.

An RPI leader, Namdeo Dhasal, had formed an alliance with the Shiv Sena but the experiment failed to achieve its objective. Now the Sena is trying to influence other RPI leaders for the sake of power.

Moreover, the Shiv Sena has been constantly opposed to the RPI and its leaders. The Sena had opposed the renaming of the Marathwada University after Dr. Ambedkar. It banned Dr. Ambedkar's book *Riddles in Hinduism*, which led to clashes between Sena and RPI activists in Mumbai. Considering all these factors, it would be foolish on the part of the RPI to form an alliance with the Shiv Sena.

D.R. Jaware

Maharashtra

JPC report

This is with respect to the article "A guide to the JPC report" (February 24) by Mani Shankar Aiyar. The author has done well to throw light on the findings of the JPC investigating the stock market scam and the UTI imbroglio. It is indeed shameful that despite monitoring institutions like SEBI, the RBI and the Ministry of Finance, the common man finds himself robbed of his hard-earned money. These institutions failed not once but numerous times during the course of these scams, as is evident from the JPC's observations. What is more shameful (because of the nature of the post he held) is the role Finance Minister Yashwant Sinha played whilst all this was going on.

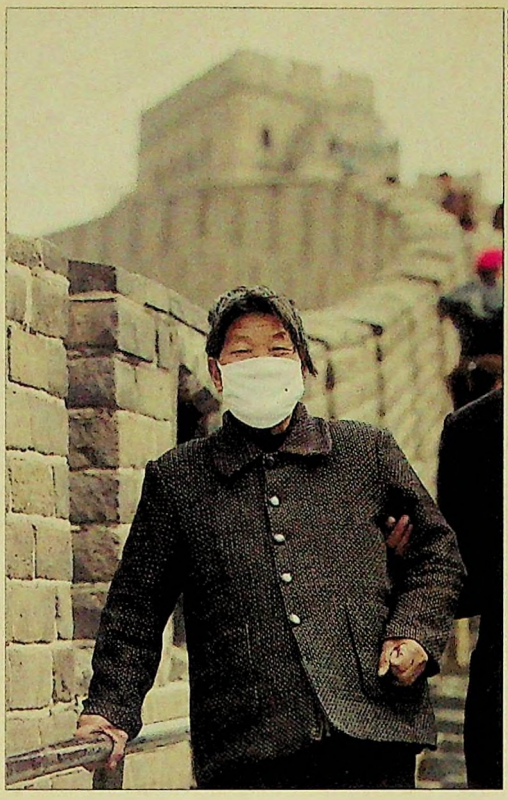
Sinha must realise that he cannot pass the buck. His statement in the Rajya Sabha that P.S. Subramanium, the then Chairman of the UTI, had repeatedly assured him through the Ministry that everything was hunky-dory at the UTI and with US64 reflects his irresponsible attitude of Sinha. Whatever may be the case, the truth remains that all this has cost the country dear, both in terms of money value and in terms of the faith of millions of investors who feel betrayed. Our judicial system should be geared to take care of all the loopholes that exist in the system. Those who misuse public trust and money must be punished.

Himanshu Panwar

Shimla

SARS." He added: "Now we can move away from methods like isolation and quarantines and move aggressively towards modern intervention strategies, including specific treatments and eventually vaccination." He noted that if the vaccine or drug was to be developed by the private sector, it would want to be certain that the disease was a permanent resident in human beings, in order to recover its investment. Therefore, it had to be funded wholly by the public sector or in partnership with the private sector, he said. "The history of treating viral infections showed that anti-viral drugs were very difficult to develop, and even then, they had an effect only very early when the virus level was low," he observed.

Going by the rapidity with which the disease is spreading, SARS appears to be the first severe and easily transmissible disease of the 21st century, Heymann said. Although the causative agent of SARS has been identified in a remarkably short span of time, the potential of the disease was not clear, particularly whether it would become a permanent infectious disease, he said. All evidence points to the disease having spread from the Guangdong province of China. The outbreak seems to date back to November 16, 2002, when an initial case was reported in Foshan city.



ANDREW WONG/REUTERS

A tourist visiting the Great Wall of China on the outskirts of Beijing on April 21. All evidence points to the disease having first appeared in the Guangdong province of China.

WHEN a global alert against SARS was issued on March 12, it was hoped that SARS would not spread throughout Asia and the rest of the world. According to him, until the situation in mainland China, which had 1,482 cases, became clear and a number of key questions were answered, the future of the disease would not be known. Since April 3, four WHO teams have been working in Guangdong, Beijing and other major cities of the country to assess the situation.

An interim report on the Chinese situation was prepared by the WHO on April 9. The report concluded that while the health system in Guangdong responded well to the outbreak, all other provinces were less equipped to cope with the severity of the challenge.

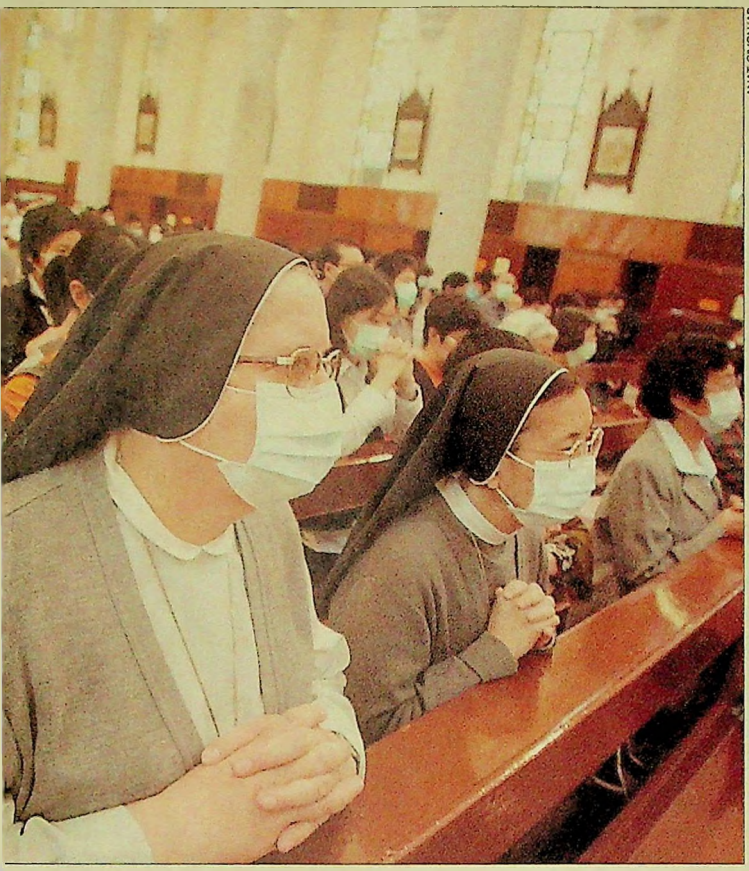
In Guangdong, the team found an instance of what it has termed "super-spreaders", in which one person from the province is thought to have infected as many as 100 other persons. The phenomenon of a "super spreader", which is not a medical condition, dates back to the early days of the outbreak when SARS was not identified as a disease requiring special precautions of isolation and infection control. In the absence of such measures, a large number of health workers, family members, relatives and visitors to the hospital were exposed to the virus by a single unprotected case.

A "super spreader" has been traced in Singapore too. The report expressed particular concern on the situation in Beijing, where there could be underreported cases. According to the WHO, the situation in Beijing's military hospitals has been the source of many reports about the real magnitude of SARS in the Chinese capital. On April 13, President Hu Jintao appeared on state television and expressed concern about the situation. He has appealed for "accurate, timely and honest reporting" of cases.

At present, Hong Kong, with 1,327 cases and 69 deaths as of April 18, is the hardest-hit area. Healthcare workers continue to become get infected and hospitals are overwhelmed by the growing number of patients. A large cluster of 268 SARS cases has been reported from a single high-rise apartment block called Amoy Gardens Estate. It is the first known instance of a possible environmental spread of the SARS virus. The vast majority of the cases have been traced to vertically linked apartments in a single building. This pattern of transmission, according to the WHO, indicates that the disease has moved out of the healthcare setting and is now occurring within the community. Epidemiologists investigating the peculiar outbreak released a report on April 17, identifying the enviromental route as the source of the large cluster of cases.

As of April 15, 321 Amoy residents had been affected. Investigation has identified a sewage contaminated with the SARS virus as the probable source of exposure. According to the report, a 33-year-old man, who developed symptoms of SARS on March 14, visited a relative in the apartment building on the same day. His symptoms included diarrhoea and it is believed that the virus from his faeces was transmitted through the sewage route. The rapid spread to other residents has been attributed to defective U-traps in bathrooms, the amplifying effect of bathroom exhaust fans, a cracked sewer vent pipe, and an aerodynamic effect in a lightwell to which bathroom windows opened. Laboratory investigations confirmed the presence of the SARS virus in a swab from the toilet bowl in the bathroom of a SARS patient, but not in numerous other environmental samples. The study found no epidemiological or laboratory evidence that the SARS virus was transmitted by air, water, or infected dust aerosols. "It is reassuring that speculations about a possible airborne transmission have not been borne out by the evidence available to date," the WHO said.

According to Heymann, although the last decades of the previous century witnessed the emergence of several new



ANAT GIVON/AP

Nuns and worshippers wear masks to protect themselves against SARS, while attending Good Friday mass at Hong Kong's Catholic Cathedral of the Immaculate Conception.

would be quarantined for 10 days, after he was allowed to mingle with the general public for two days. He was readmitted to the GMCH on the night of April 16. However, on April 18, Goa Chief Minister Manohar Parikkar announced that Prasheel would be discharged as he had been "cured" of SARS. So far, Prasheel's wife and father, who had been with him all along, have not developed any symptoms. However, post-diagnosis, they were advised not to be in his proximity.

There are several unanswered questions. Why did he see a doctor four days after he developed fever? Who were the people he came in contact with before being kept in the isolation ward on April 10? Did he develop fever in Mumbai or on the way to Goa? What was his mode of travel from Mumbai? These questions assume importance if the chain of possible transmission from him to others is to be traced. According to the WHO, there is no evidence to suggest that the human-to-human transmission occurs by means other than air-borne droplets of cough, sneeze and so on.

The first indication of the SARS-causing virus being a coronavirus came from research work done in Hong Kong on March 21. This was confirmed by researchers at the CDC. However, definitive proof can be obtained only after verifying Koch's Postulates, which stipulate four conditions for a pathogen to be the causal agent. The micro-organism must be found in all cases of the disease, it must be isolated from the host and grown in pure culture, it must reproduce specific symptoms when introduced into a susceptible host, and it must be re-isolated in the experimental host. The work at the Erasmus Medical Centre, Rotterdam, particularly relating to animal models, led to the definitive proof that the coronavirus causes SARS.

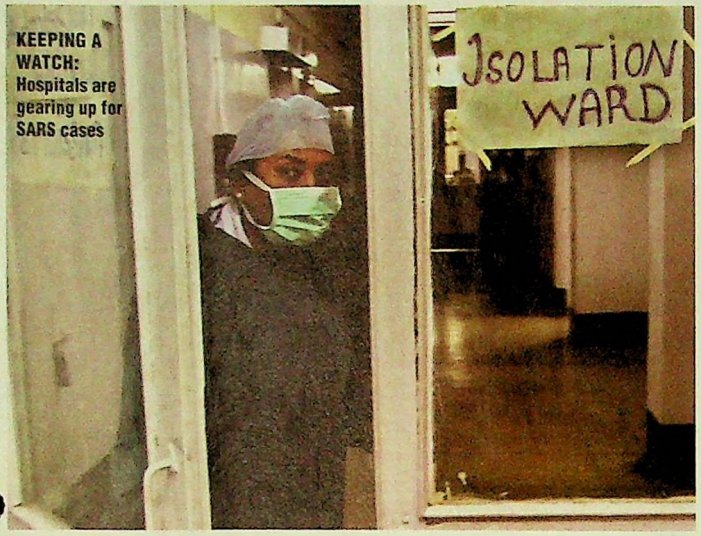
According to WHO, the virus from SARS patients across several countries has been isolated consistently by several network laboratories. The virus has been demonstrated to cause disease in African green monkey kidney cells (Vero cells) and Rhesus monkey kidney cells (FRhK-4 cells), which was found to be inhibited with serum from SARS convalescents. Significantly, signs of reactivity with the new coronavirus, namely the presence of antibodies, could not be detected in the serum samples of several non-affected individuals in the U.S., Canada and Hong Kong.

CORONAVIRUSES belong to a viral family called Coronaviridae, which infect vertebrates, especially warm-blooded vertebrates, including mammalian species such as human beings, cattle, cats, pigs, and rats, and a few avian species such as turkeys and chickens. The SARS virus has never been seen in humans before. In fact, its genetic make-up shows that it is only "distantly related" to known coronaviruses. It is not known whether it existed in other species earlier and jumped species recently, or whether it is an entirely new virus. "The WHO and the network of laboratories dedicate the detection and characterisation of the SARS virus to Carlo Rubani, the WHO scientist who first alerted the world to the existence of SARS in Hanoi and who died from the disease in Bangkok on March 29," a WHO release said.

This definitive determination was particularly important because earlier evidences from different laboratories suggested that the pathogen could be an unknown paramyxovirus. Indeed, Canadian researchers (*Frontline*, April 11, 2003) isolated a relatively new paramyxovirus, known as human metapneumovirus (hMPV). The finding was supported by some other laboratories in the network. In medical science, it is difficult to understand the aetiology of a disease in terms of two pathogens. According to the WHO, hMPV and antibodies against hMPV have been found in the serum samples of some SARS patients. Evidence of dual infection with hMPV and the new coronavirus has also been found. But the significance of hMPV in SARS remains unclear. Perhaps hMPV is in the nature of causing opportune infections, making the affliction worse.

David Heymann, Executive Director of the Communicable Diseases Cluster of the WHO said: "Because of an extraordinary collaboration among laboratories from countries around the world, we now know with certainty what causes

AP PHOTO/GAUTAM SINGH



KEEPING A WATCH: Hospitals are gearing up for SARS cases

THE DREAD ALERT

The SARS virus arrives in India but the case remains shrouded in confusion and contradictions

■ by Supriya BEZBARUAH with Nidhi TAPARIA

THE DREADED SARS VIRUS HAS finally arrived in India. Or has it? In typical Indian style, the case of India's first SARS victim has been shrouded in confusion and contradictions from day one.

Till April 16, Prashil Varde, 32, was merely a marine engineer suffering from a mild fever while in Goa. Varde had sailed to Hong Kong in March and from there went to Singapore with his wife before flying back to Mumbai and proceeding to Goa. It was in Goa that Varde developed a mild fever of 100 degree F. Had he not visited a SARS-affected country recently, it was hardly a reason to be alarmed about. So Varde went to a private practitioner, who saw his itinerary and immediately referred him to the Goa Medical College on April 10. The WHO definition of a probable SARS case includes high fever, coughing or breathing difficulty and pneumonia. Anyone visiting a SARS-affected country or having prolonged close contact with a SARS victim is vulnerable. But Varde's fever had subsided and his chest X-ray appeared normal. It seemed he was in the clear. He wasn't.

On April 17, at two hurriedly convened press conferences—one addressed by Director-General of Health Services S.K. Aggarwal in Delhi and the other by Goa Chief Minister Manohar Parrikar in Panaji—it was announced that the SARS virus had been found in Varde's blood, sputum and urine samples tested at Pune's National Institute of Virology (NIV). SARS had arrived in India.

Later in the evening, Union Health Minister Sushma Swaraj confirmed the alarming development. "We are happy that the reagents we are using to test for the SARS virus are effective and that our surveillance system for SARS is working effectively," she said. She added that a team from Delhi's National Institute of Communicable Diseases (NICD) had been sent to Goa. Varde, who had been discharged from hospital on April 12, was placed in an isolation ward to ensure that the infective stages of the disease, normally 2-10 days, were truly over.

SARS—or Severe Acute Respiratory Disease—first came to light in February this year in China. Vietnam and Hong Kong. Caused by a new, deadly form of the virus family that causes common cold, SARS has spread rapidly in this jet age, triggering possibly the shrillest global health alert in recent times. Till date, some 3,400 people have been infected by the virus worldwide. About 165 have died. Eleven disease control centres in nine countries have worked overtime to study the causes of SARS. It has now been confirmed by WHO that a corona virus, previously unknown to man, is the cause. The presence of another new

"Our surveillance system for SARS is working effectively."

SUSHMA SWARAJ, Union Health Minister

will not apply to tobacco products not sold in packets. Praful Patel, a Nationalist Congress Party member of the Rajya Sabha and one of the biggest bidi manufacturers in the country, admits that the bill's impact, in the first instance, will be greater on the cigarette industry simply because it is more organised and spends a larger amount on advertising. "Bidi industry is anyway being hit because urban markets are shifting to cigarettes while chewing tobacco is becoming more popular in rural areas," he points out.

The Health Ministry, which drafted and steered the bill, finds the law non-discriminatory. In fact, the original bill tabled in the Rajya Sabha in 2001 was applicable only to the cigarette industry. The revised bill includes all tobacco products. "We are banning neither the production nor the sale of tobacco products. The bill only prohibits advertising and aims to create better awareness," says Bhawani Thyagarajan, joint secretary in the Health Ministry. And since the consumption is aimed to be curbed through a ban on ads, the impact on employment and tobacco farming will be gradual.

The support of states will be key in the implementation of the bill, especially on products other than cigarettes. And here the political clout of big bidi manufacturers, especially in the states of Madhya Pradesh and Maharashtra, could be a deterrent.

A segment of the tobacco industry that will be hit the least is chewing tobacco. The organised players in the chewing tobacco industry though promise to follow the new bill. "We will start printing nicotine and tar content on all our tobacco products as soon as the law demands it," claims Ashok Agarwal, president of DS Foods which owns brands like Baba and Tulsi.

The bill also prohibits sale of tobacco products within 100 yards of all educational institutions. It is a lofty provision since the sale of tobacco products to minors is already prohibited. Besides, the definition of an educational institution isn't clear—if it includes coaching centres and cybercafes, then the bill could cover the whole of India.

The main weapon of the bill though is the ban on advertising. And the key question is: do advertising bans reduce tobacco consumption? According to WHO, the answer is yes. A study conducted by WHO shows that the ban on tobacco advertising in Norway, Finland, New Zealand and Canada brought down consumption by 4-9 per cent between 1977 and 1992. On the other hand, the cigarette industry claims that in most countries cigarette consumption has risen following advertising bans.

Whatever the argument and effectiveness, everybody has accepted the reality of the ban. What is unclear though is the fate of surrogate advertising. The bill proposes to "ban all direct and indirect" ads of tobacco. Agarwal is in favour of an all-encompassing ban, but experts aren't sure if surrogate advertising can be legally proven and prohibited. The Government also needs to ensure that foreign tobacco companies don't sneak in ads through the print and electronic media of countries where the ban is not as rigorous as in India.

The tobacco industry's adspend is about Rs 350 crore a year—9 per cent of the Rs 4,000-crore annual advertising in print media. Says Preet K.S. Bedi, president-designate of ad agency Rediffusion: "The size of advertising is a non-issue in deciding on ad bans on tobacco. Not because the advertising size today isn't very big but because such bans are determined by bigger and loftier factors."

In the end, the bill's worth will be tested on how uniformally it curbs all forms of tobacco consumption. ■

THE BILL ...

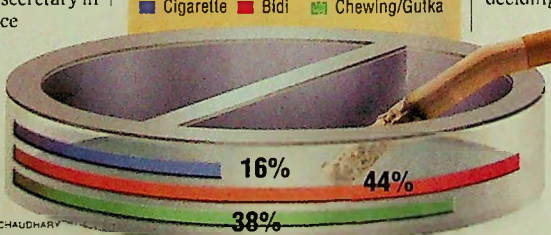
- Bans all advertising and regulates sales of all tobacco products.
- All tobacco products to carry text and pictorial health warnings.
- All tobacco products to indicate nicotine and tar content on packaging.
- Smoking and sale of tobacco banned in all public places.
- Bans sale of tobacco products to persons under 18 and within 100 yards of educational institutions.

... AND ITS IMPACT

CIGARETTES: The Rs 10,000-crore industry fears it will suffer at the expense of bidi and chewing tobacco makers on whom the law will be lax.
BIDIS: Biggest segment of tobacco industry claims it is being hit by the shift to cigarettes and chewing tobacco.
CHEWING TOBACCO: Few big players welcome bill but regulation of the segment will be difficult.
ADVERTISING: Tobacco accounts for 9% of Rs 4,050-cr annual print ad revenue.
MEDIA: Print media—especially magazines—will take immediate hit.

SMOKESCREEN

In India, tobacco is mainly used as bidi and chewing tobacco

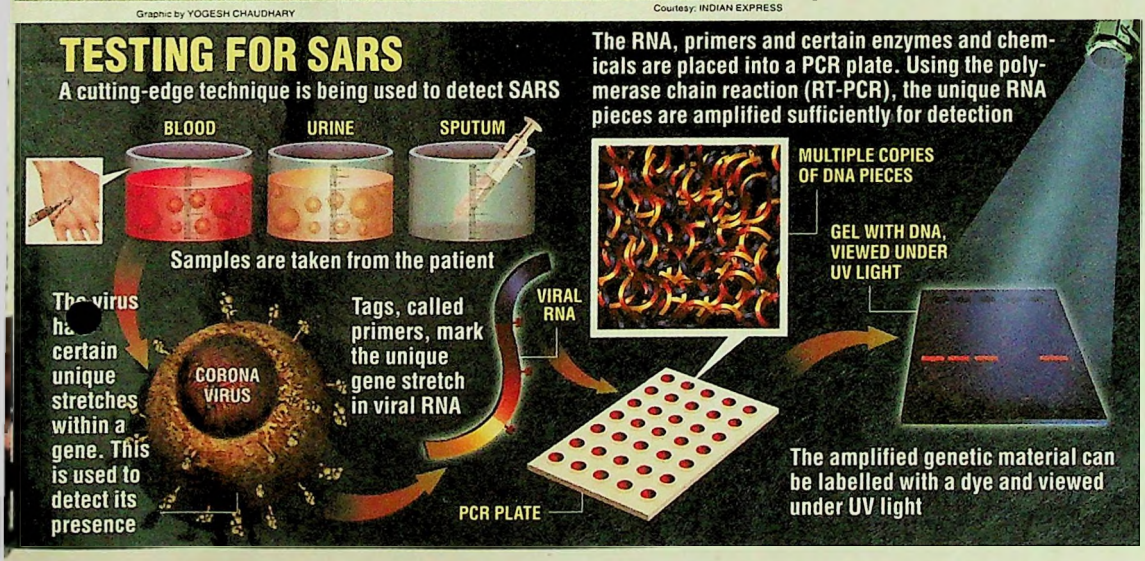


Graphic by YOGESH CHAUDHARY

Figures are volume of consumption

PREVENTIVE STEPS: Officials don masks at Delhi airport

Courtesy: INDIAN EXPRESS



Graphic by YOGESH CHAUDHARY

virus, which belongs to the family which causes chicken pox and mumps, has also been found in some SARS patients.

Barely hours after Swaraj announced the first SARS case in India, Parrikar and his Health Minister Suresh Amonkar met journalists again to say that the case may be a false alarm and that there had been a "mismatch" between clinical and lab findings. The samples would be sent, they said, for a second opinion to NICD.

Why the confusion? Apparently, Varde suffered only mild symptoms. His wife and father, who were in close contact with him, show no signs of illness. Neither do any of the medical staff who had nursed Varde at Goa Medical College, raising doubts about the accuracy of the tests conducted at NIV. NIV Director A.C. Mishra, however, stands by the results of his institute. "SARS covers a wide spectrum," he says. "Varde's is a mild case which showed up only in fever. But he definitely has been infected by SARS."

Indeed, there are reports of SARS patients with mild symptoms. Neither is the polymerase chain reaction technique used by NIV for the tests completely fool-proof. False positives are possible. Reports from across the world reveal that the disease varies widely. Viruses which have RNA as their genetic material mutate frequently, and it is possible that the SARS virus is still changing.

Considering this, Parrikar has good reason to hope that Varde's case is a false alarm. Goa depends heavily on tourism, and as the South-east Asian experience has shown, SARS is the death knell for the industry. Domestically too it would spell bad news for a tottering tourism industry. Subhas Goyal, chairman, STIC Group of Industries, warns against unnecessary panic. "This is an isolated case. Canada has SARS but no one has stopped going to Canada. More than 20 countries across the world have SARS cases. Why should people stop coming to India?" he asks.

To be fair, the administration is taking all precautions to keep the virus at bay. Incoming passengers are being screened and some labs at NICD have been upgraded. However, according to Sanjay Malik, secretary-general, Indian Medical Association, more awareness of the disease is essential, especially among private practitioners. "Almost three-fourths of the patients in India go to private practitioners and it is essential for them to be involved with the Government," he says.

This may or may not be the beginning of a SARS epidemic in India. But India is no stranger to epidemics. This won't be the first, and it won't be the last.

How to Diet on Indian Food

Despite hundreds of diets, nutritionists and slimming centres, there is considerable confusion about what constitutes the right diet in Indian food

■ by Shefalee VASUDEV

THIRTY-TWO-YEAR-OLD SUHASINI NINDRAJOG IS CONsumed with dieting. Overweight by about 10 kg, she dreams incessantly of a pencil-thin figure. Nindrajog has tried everything—from the globally famous Dr Robert Atkins' diet to a blood group diet to depressive weeks of just bananas and milk. She seems to be among those whose purses are the only things that lose weight at slimming centres. "I eat salads, boiled, steamed foods, don't snack and even skip meals at times," she says. "But nothing works. Besides, I feel lethargic all the time."

Quite in contrast, Neeraj Bhalla, a fit looking 39-year-old, says he eats all the time. "Because food is for eating," reasons Bhalla with a satiated smile. He starts his day with two cups of tea, followed by a breakfast of stuffed parathas, curd and pickle, a big lunch ("I eat out almost every day") and a heavy dinner with at least one non-vegetarian gravy dish. "In between meals, I eat what I like—pastries, chocolates, aloo bhujia or biscuits—but I don't put on weight at all."

Both Nindrajog and Bhalla are on polarised trips in life, but it seems that the desired results of their eating pursuits have got mixed up. While Nindrajog suffers from excessive water retention, Bhalla is one of those few lucky gluttons who are genetically predisposed to being lean, besides having a high basal metabolic rate (BMR) that helps them burn more calo-

Food Myths

- MYTH: Zero-fat diets are best.
FACT: Fat from some source is necessary.
- MYTH: Crash dieting makes weight loss faster.
FACT: Crash diets can lead to permanent organ damage and loss of lean muscle and tissue.
- MYTH: Vegetarians can't build muscle.
FACT: Vegetarians derive protein required to build muscle from grains, pulses and soya bean.
- MYTH: Giving up smoking increases weight.
FACT: Only if cigarettes are replaced with food.
- MYTH: Bananas are fattening.
FACT: There is only half a gram of fat and 95 calories in one banana.
- MYTH: Diabetics should completely avoid potatoes and rice.
FACT: Prescribed proportions are safe.
- MYTH: Alcohol is good for the heart.
FACT: Alcohol has empty calories which turn into fat. Ethyl alcohol in alcoholic drinks increases blood pressure and weakens heart muscles.
- MYTH: Curd, sour foods, astringent fruits and banana are cold and can induce cough. Nuts, dry fruits and honey, being warm, cure common cold.
FACT: There are no hot or cold foods. Individual allergic reactions strengthen these myths.

Photograph by BANDEEP SINGH. Location courtesy MAURYA SHERATON HOTEL and TOWERS

Community Health Cell

From: <ciddsf@vsni.com>
To: <pha-ncc@yahoogroups.com>
Sent: Wednesday, May 07, 2003 3:51 PM
Subject: [pha-ncc] SARS

This might be of interest to some

Amit

SARS: How Much of a Threat?

Amit Sen Gupta

The SARS (Sudden Acute Respiratory Syndrome) epidemic has struck fear in country governments, practitioners and whole populations across the globe. It has made global headlines and seems to have even overshadowed the human tragedy that is unfolding in Iraq. While we debate on how large a threat SARS is we should not lose sight of the fact that, till the beginning of May, there have been 5,600 reported cases and 372 deaths due to the epidemic. Contrast this with over 2,000 or almost six times the number of deaths taking place in India alone in a single day due to Tuberculosis. Further, in this one day 3,500 people would die of Malaria, most of them children in Africa. How the SARS epidemic will progress is open to speculation, as is the question how large a public health threat SARS will be in the future. What we do know is that it is a new infection, which can be extremely virulent, and can cause deaths in over 5% of those who are infected. While SARS needs to be tackled with caution and speed we should also not lose sight of the fact that influenza epidemics caused by mutant starins (also caused by the same family of viruses called coronavirus that causes SARS) have been known to appear suddenly, cause a large number of deaths, and then lose steam.

How such epidemics appear suddenly is explained by the capacity of viruses to mutate that is to change their genetic characteristics. The human body, when infected by a certain virus, fights the virus by producing what are called antibodies against the infection. These antibodies remain in the system and confer partial or total immunity against subsequent infections by the same virus. Thus, if a virus has been around for a long time, most of the people in the community have some for of immunity against the virus - like immunity against the common cold. So even if infections occur, they are not very serious and such viruses do not cause epidemics. This phenomenon, where most people in a community have immunity to a certain disease-causing germ is called "herd immunity". In the case of a new mutant virus, such herd immunity does not exist. As a result the disease is able to spread and assume epidemic proportions. Over time, as more people get infected, herd immunity develops in the community and the epidemic dies down and the disease expresses itself as isolated cases.

What is SARS?

Lets us now turn to what we know about the epidemic. In November, 2002, an outbreak of atypical pneumonia (i.e. pneumonia that is not caused by known causative organisms and has atypical features) was reported in Guangdong province in southern China. In late February, 2003, such cases were first reported outside China, in Hanoi, Vietnam. In March, 2003, a WHO officer Carlo Urbani first drew global attention to the outbreak after examining cases in Vietnam and coined the name sudden acute respiratory syndrome or SARS. Carlo Urbani himself died of the infection within 3 weeks of his

TH 8/5 - Lists - Resource file on SARS

drawing the world's attention to the epidemic.

We know now that the illness caused by SARS usually begins with a fever, sometimes associated with chills or other symptoms, including headache, general feeling of discomfort and body aches. After 2 to 7 days, SARS patients may develop a dry cough that might be accompanied by or progress to the point where insufficient oxygen is getting to the blood. In 10-20 % of cases, patients will require mechanical ventilation with a machine. The incubation period (i.e. the period between the time of infection and the manifestation of symptoms) is typically 2 to 7 days though isolated reports have suggested an incubation period as long as 10 days. SARS is spread by close person-to-person contact including through touching the skin of other people or objects that are contaminated with infectious droplets and then touching one's eye(s), nose, or mouth. This can happen when someone who is sick with SARS coughs or sneezes droplets onto themselves, other people, or nearby surfaces. People are most likely to be infectious (i.e. capable of infecting others) when they have symptoms, such as fever or cough. However, it is not known how long before or after their symptoms begin that patients with SARS might be able to transmit the disease to others.

We also know now that SARS is caused by a previously unrecognised coronavirus --coronaviruses are a group of viruses that have a halo or crown-like (corona) appearance when viewed under a microscope. These viruses are a common cause of mild to moderate upper-respiratory illness in humans and are associated with respiratory, gastrointestinal, liver and neurological disease in animals. These viruses do not last a long time outside the body - generally not more than three hours.

Several new laboratory tests can be used to detect the SARS-associated coronavirus (SARS-CoV). These include the detection of antibodies to the virus in the patient's blood, detection of DNA of the virus in samples taken from the patient's blood, sputum, etc. and culture of the virus. All these tests are expensive and they are not always conclusive. So the diagnosis of SARS depends on a combination of such tests, identifiable symptoms in the patient, and a history of contact with someone known to have SARS.

Globalisation and SARS

The SARS epidemic and its subsequent handling, curiously, points to both the threats posed by globalisation and its potential advantages. Globalisation leads to transnationalisation of public health risks. A major effect, in recent years, has been the resurgence of communicable diseases across the globe - the most recent expression being SARS. Every phase of human civilisation that has seen a rapid expansion in exchange of populations across national borders has been characterised by a spread of communicable diseases. The early settlers in America, who came from Europe, carried with them small pox and measles that decimated the indigenous population of Native Americans. Plague traveled to Europe from the orient in the middle ages, often killing more than a quarter of the population of cities in Europe (like the plague epidemic in London in the fifteenth century). This is a natural consequence of exposure to local populations to exotic diseases, to which they have little or no natural immunity.

Today, what incubates in a tropical rainforest can emerge in a temperate suburb in affluent Europe, and likewise what festers in a metropolitan ghetto of the global North can emerge in a sleepy village in Asia - within weeks or days. The SARS epidemic, for example, which started from China, may have festered in its place of origin and run out its course if the rapid exchange of people across countries had not taken place. When such rapid spread takes place, those that are most badly affected are the poorest that live in developing countries, because their immunity is compromised by under nutrition and because they have little or no access to health facilities. We must not forget the backdrop -- in the last twenty years IMF/WB mandated

policies have devastated public health facilities in virtually every developing country. It is a moot point whether this epidemic would have reached current proportions if China had not chosen to drastically privatise its health facilities in the last decade. In fact China's privatisation of the Health Sector, today, is almost as widespread as in India.

In the 1960s scientists were exulting over the possible conquest to be achieved over communicable diseases. Forty years later a whole new scenario is unfolding. AIDS is its most acute manifestation. We also have resurgence of cholera, yellow fever and malaria in Sub-Saharan Africa, malaria and dengue in South America, multi-drug resistant TB, plague, dengue and malaria in India. We also see the emergence of exotic viral diseases, like those caused by the Ebola and the Hanta virus and now SARS. We thus have a resurgence of "old diseases" compounded by the emergence of new ones. Globalisation that forces migration of labour across large distances, that has spawned a huge "market" on commercial sex, that has changed the environment and helped produce "freak" microbes, has contributed enormously to the resurgence. We talked of the random mutations that produce new viruses. The pace of such mutations is increasing due to environmental degradation as microbes are exposed to hitherto unknown conditions.

Response of the Scientific Community

The response of the global scientific community to the SARS epidemic also points to the potential that true globalisation has in tackling human misery. In 2001, the World Health Organization (WHO) established an epidemic alert and response program to enable coordinated responses to emerging epidemics, and in early March of this year, the WHO used this program to start an international collaborative investigation into the nature of SARS. The results of this international collaboration have been the astoundingly rapid identification of a likely etiologic agent (i.e. identification of the virus that causes SARS) and the dissemination of clinical information with unprecedented speed. The information already gleaned about the SARS virus will help in the development of an accurate diagnostic test and antiviral drugs. A speedy test could be available soon, according to the WHO, which coordinated the work of 13 laboratories around the world. "The pace of SARS research has been outstanding," said Dr David Heymann, WHO's executive director of communicable diseases. The work of the laboratories and WHO has been dedicated to Dr Carlo Urbani, the WHO scientist who first identified the virus in Hanoi and subsequently died of SARS.

The speedy response to SARS shows what can be achieved by global scientific collaboration. It also shows that such collaboration is manifest today only when the developed world sees a threat to its own population. The potential exists, but under imperialist globalisation this potential is fettered by the narrow interests of developed countries. Why else have we not seen such a high degree of collaboration when it comes to diseases that continue to plague the developing countries - like Malaria or Tuberculosis.

Comic Spectacle in India

The handling of the threat of a SARS epidemic in the country has been typically inept. We see a comic spectacle unfold before us as the Indian Government blunders along. First there was a flurry of "positive" SARS cases reported from across the country. We were told that these cases had been "confirmed" by the National Institute of Virology. Then, suddenly, Mrs.Sushma Swaraj gleefully announced that we had been mistaken all this while because the WHO now says that none of these "confirmed" cases are actually cases of SARS. Did we require the WHO to tell us this? The WHO has no surveillance, treatment or diagnostic facilities in the country. It relies on data provided by the Indian health authorities. How is it that the same data told two entirely different stories? It is obvious that the handling of the suspected cases ignored standard practices, which any

competent medical practitioner should be aware of. If the National Institute of Virology had "confirmed" cases, how did they suddenly turn out to be SARS free after the WHO declared them to be so? It is clear that what the NIV had declared as confirmed were not confirmed cases. The NIV had not followed standard protocol - now available globally and even accessible to anyone who has access to the internet - while labeling cases to be SARS positive.

If we can misdiagnose patients as "SARS positive" we are equally capable of misdiagnosing patients as "SARS negative". In other words, we are by no means geared to tackle the SARS epidemic if and when it reaches India. Epidemic control is not achieved by holding press conferences and stationing masked doctors at airports. Epidemic control requires a high level of preparedness of the public health infrastructure. This infrastructure has been systematically dismantled in the last 12 years of economic liberalisation. The government has taken the lead in delegitimising this infrastructure and today very few people have faith in the public health system. In such a situation do not expect SARS cases to be detected and treated by the public health system. We can only hope that the doddering edifice of our public health infrastructure is not called upon to deal with a real SARS epidemic. If that happens, it is doomed to fail.

The SARS epidemic

Even as the SARS virus arrives in India, with the first case being reported from Goa, laboratories under the WHO continue to explore ways to counter the rapidly spreading disease.

R. RAMACHANDRAN

WITH the spread of Severe Acute Respiratory Syndrome or SARS, a hitherto unknown atypical form of pneumonia, to more and more countries as a result of international travel, India could not have escaped for long. Since February 26, when the first case was detected in Hanoi, SARS has spread to 27 countries, including India. The first case of SARS in India was identified on April 16, in Prasheel Varde, a 32-year-old marine engineer from Goa. He had travelled to Hong Kong and Singapore – both categorised as SARS 'affected areas' or hot zones – before returning to India on April 1.

A diagnostic test based on the Polymerase Chain Reaction (PCR) done by the Pune-based National Institute of Virology (NIV) confirmed the presence of the SARS virus in samples of the patient's blood, sputum and urine, which were sent by the Goa Medical College Hospital (GMCH) where he was being treated. In a press briefing on April 17, officials from the Health Ministry said that all the samples were found to be positive for the SARS virus. However, it is curious that even though the samples indicated the presence of the virus in the blood stream, the patient showed no clinical symptoms characteristic of the disease – high fever, cough, breathing difficulty and, most importantly, signs of pneumonia or respiratory distress syndrome in a chest X-ray.

Thus, the Indian SARS case, with an apparent mismatch between clinical symptoms and the diagnostic test, is a unique one. Since the cause or the aetiology of the disease was unknown till about four weeks ago, the case definition has been done solely on the basis of clinical symptoms specified by the World Health Organisation (WHO). Of the 3,461 suspected and probable SARS cases reported worldwide so far, the WHO has recorded the Indian case as one that has recovered.

Diagnostic tests are being developed after the causative agent was identified recently as a hitherto unknown form of coronavirus, a family to which the common cold virus belongs. But all the three different tests – Enzyme-Linked Immunosorbent Assay (ELISA), Immunofluorescence Assay (IFA) and PCR – seem to have their limitations. A PCR test that was developed in early April by the Centres for Disease Control and Prevention (CDC) of the United States is stated to be effective only in the early stages of the disease.

However, with the isolation and genetic sequencing of the SARS virus, primers – pieces of genetic material that are specific to a given virus and are the key pieces for a PCR test – have been made available to laboratories around the world by the Hamburg-based Bernhard-Nocht Institute for Tropical Medicine (BNI), one of the laboratories in the WHO consortium for research on SARS aetiology. Arcus Biotech, a Hamburg-based firm, has developed a real-time, ready-to-use PCR diagnostic kit that uses primers. The company has offered to supply these kits, which became available since April 14, free of cost to laboratories participating in the WHO network of 13 laboratories from 10 countries. No Indian institution is part of this network. Therefore, in all likelihood, the NIV test is based on the primer sequences that were made available by the WHO on its website.

According to Kumar Rai, head of the communicable diseases wing at the WHO's Regional Centre in New Delhi, as diagnostic tests are still being developed, there is also a high probability of the test indicating a "false positive" result. Christian Drosten, the BNI scientist who was responsible for identifying the primers and developing the PCR test, said: "The case definition of SARS does not include findings in PCR. Results of PCR can be used to complement clinical diagnostic evaluation. However, tests have not been validated for confirmation of cases or exclusion of the disease." Therefore, it is unclear why the WHO decided to confirm the Indian case, which is based entirely on the PCR test, as an instance of SARS.

PRASHEEL Varde, his wife and his father had sailed from Hong Kong, where they stopped for four hours on March 26, to Singapore, where they spent a couple of days. On April 1, the three arrived in Mumbai, where they spent a couple of days, before reaching Goa on April 4. On reaching Goa, Prasheel developed fever and cough and on April 8 he went to a private medical practitioner, who referred him to the medical college hospital. There, he was kept under observation from April 10 to 12 in an isolation ward and was treated with antibiotics. The treatment was effective, and since his X-ray did not reveal any pneumonia patch, he was discharged. Although the hospital had sent his samples to NIV for testing, by the time the test results became available on April 14, he had been discharged.

And in a strange and inexplicable move, on April 14 it was decided that he

ANAT GIVON/AP

Nuns and worshippers wear masks to protect themselves against SARS, while attending Good Friday mass at Hong Kong's Catholic Cathedral of the Immaculate Conception.

would be quarantined for 10 days, after he was allowed to mingle with the general public for two days. He was readmitted to the GMCH on the night of April 16. However, on April 18, Goa Chief Minister Manohar Parikkar announced that Prasheel would be discharged as he had been "cured" of SARS. So far, Prasheel's wife and father, who had been with him all along, have not developed any symptoms. However, post-diagnosis, they were advised not to be in his proximity.

There are several unanswered questions. Why did he see a doctor four days after he developed fever? Who were the people he came in contact with before being kept in the isolation ward on April 10? Did he develop fever in Mumbai or on the way to Goa? What was his mode of travel from Mumbai? These questions assume importance if the chain of possible transmission from him to others is to be traced. According to the WHO, there is no evidence to suggest that the human-to-human transmission occurs by means other than air-borne droplets of cough, sneeze and so on.

The first indication of the SARS-causing virus being a coronavirus came from research work done in Hong Kong on March 21. This was confirmed by researchers at the CDC. However, definitive proof can be obtained only after verifying Koch's Postulates, which stipulate four conditions for a pathogen to be the causal agent. The micro-organism must be found in all cases of the disease, it must be isolated from the host and grown in pure culture, it must reproduce specific symptoms when introduced into a susceptible host, and it must be re-isolated in the experimental host. The work at the Erasmus Medical Centre, Rotterdam, particularly relating to animal models, led to the definitive proof that the coronavirus causes SARS.

According to WHO, the virus from SARS patients across several countries has been isolated consistently by several network laboratories. The virus has been demonstrated to cause disease in African green monkey kidney cells (Vero cells) and Rhesus monkey kidney cells (FRhK-4 cells), which was found to be inhibited with serum from SARS convalescents. Significantly, signs of reactivity with the new coronavirus, namely the presence of antibodies, could not be detected in the serum samples of several non-affected individuals in the U.S., Canada and Hong Kong.

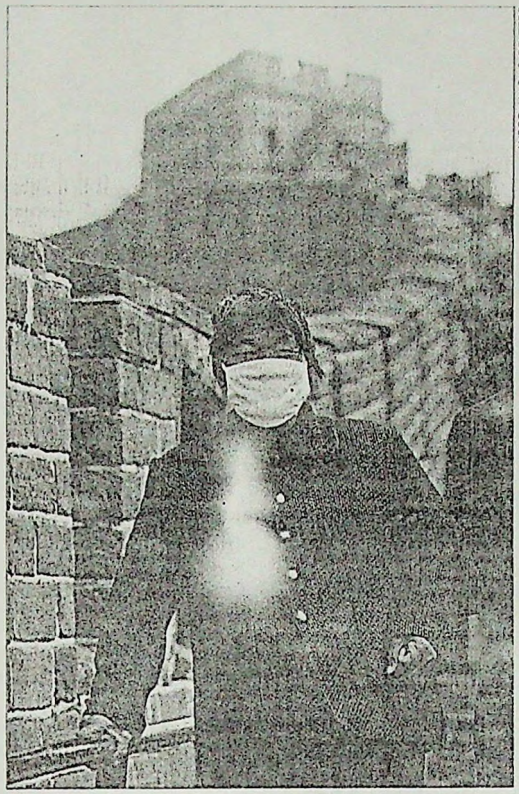
CORONAVIRUSES belong to a viral family called Coronaviridae, which infect vertebrates, especially warm-blooded vertebrates, including mammalian species such as human beings, cattle, cats, pigs, and rats, and a few avian species such as turkeys and chickens. The SARS virus has never been seen in humans before. In fact, its genetic make-up shows that it is only "distantly related" to known coronaviruses. It is not known whether it existed in other species earlier and jumped species recently, or whether it is an entirely new virus. "The WHO and the network of laboratories dedicate the detection and characterisation of the SARS virus to Carlo Rubani, the WHO scientist who first alerted the world to the existence of SARS in Hanoi and who died from the disease in Bangkok on March 29," a WHO release said.

This definitive determination was particularly important because earlier evidences from different laboratories suggested that the pathogen could be an unknown paramyxovirus. Indeed, Canadian researchers (*Frontline*, April 11, 2003) isolated a relatively new paramyxovirus, known as human metapneumovirus (hMPV). The finding was supported by some other laboratories in the network. In medical science, it is difficult to understand the aetiology of a disease in terms of two pathogens. According to the WHO, hMPV and antibodies against hMPV have been found in the serum samples of some SARS patients. Evidence of dual infection with hMPV and the new coronavirus has also been found. But the significance of hMPV in SARS remains unclear. Perhaps hMPV is in the nature of causing opportune infections, making the affliction worse.

David Heymann, Executive Director of the Communicable Diseases Cluster of the WHO said: "Because of an extraordinary collaboration among laboratories from countries around the world, we now know with certainty what causes

SARS." He added: "Now we can move away from methods like isolation and quarantines and move aggressively towards modern intervention strategies, including specific treatments and eventually vaccination." He noted that if the vaccine or drug was to be developed by the private sector, it would want to be certain that the disease was a permanent resident in human beings, in order to recover its investment. Therefore, it had to be funded wholly by the public sector or in partnership with the private sector, he said. "The history of treating viral infections showed that anti-viral drugs were very difficult to develop, and even then, they had an effect only very early when the virus level was low," he observed.

Going by the rapidity with which the disease is spreading, SARS appears to be the first severe and easily transmissible disease of the 21st century, Heymann said. Although the causative agent of SARS has been identified in a remarkably short span of time, the potential of the disease was not clear, particularly whether it would become a permanent infectious disease, he said. All evidence points to the disease having spread from the Guangdong province of China. The outbreak seems to date back to November 16, 2002, when an initial case was reported in Foshan city.



ANDREW WONG/REUTERS

A tourist visiting the Great Wall of China on the outskirts of Beijing on April 21. All evidence points to the disease having first appeared in the Guangdong province of China.

WHEN a global alert against SARS was issued on March 12, it was hoped that SARS would not spread throughout Asia and the rest of the world. According to him, until the situation in mainland China, which had 1,482 cases, became clear and a number of key questions were answered, the future of the disease would not be known. Since April 3, four WHO teams have been working in Guangdong, Beijing and other major cities of the country to assess the situation.

An interim report on the Chinese situation was prepared by the WHO on April 9. The report concluded that while the health system in Guangdong responded well to the outbreak, all other provinces were less equipped to cope with the severity of the challenge.

In Guangdong, the team found an instance of what it has termed "super-spreaders", in which one person from the province is thought to have infected as many as 100 other persons. The phenomenon of a "super spreader", which is not a medical condition, dates back to the early days of the outbreak when SARS was not identified as a disease requiring special precautions of isolation and infection control. In the absence of such measures, a large number of health workers, family members, relatives and visitors to the hospital were exposed to the virus by a single unprotected case.

A "super spreader" has been traced in Singapore too. The report expressed particular concern on the situation in Beijing, where there could be underreported cases. According to the WHO, the situation in Beijing's military hospitals has been the source of many reports about the real magnitude of SARS in the Chinese capital. On April 13, President Hu Jintao appeared on state television and expressed concern about the situation. He has appealed for "accurate, timely and honest reporting" of cases.

At present, Hong Kong, with 1,327 cases and 69 deaths as of April 18, is the hardest-hit area. Healthcare workers continue to become get infected and hospitals are overwhelmed by the growing number of patients. A large cluster of 268 SARS cases has been reported from a single high-rise apartment block called Amoy Gardens Estate. It is the first known instance of a possible environmental spread of the SARS virus. The vast majority of the cases have been traced to vertically linked apartments in a single building. This pattern of transmission, according to the WHO, indicates that the disease has moved out of the healthcare setting and is now occurring within the community. Epidemiologists investigating the peculiar outbreak released a report on April 17, identifying the enviromental route as the source of the large cluster of cases.

As of April 15, 321 Amoy residents had been affected. Investigation has identified a sewage contaminated with the SARS virus as the probable source of exposure. According to the report, a 33-year-old man, who developed symptoms of SARS on March 14, visited a relative in the apartment building on the same day. His symptoms included diarrhoea and it is believed that the virus from his faeces was transmitted through the sewage route. The rapid spread to other residents has been attributed to defective U-traps in bathrooms, the amplifying effect of bathroom exhaust fans, a cracked sewer vent pipe, and an aerodynamic effect in a lightwell to which bathroom windows opened. Laboratory investigations confirmed the presence of the SARS virus in a swab from the toilet bowl in the bathroom of a SARS patient, but not in numerous other environmental samples. The study found no epidemiological or laboratory evidence that the SARS virus was transmitted by air, water, or infected dust aerosols. "It is reassuring that speculations about a possible airborne transmission have not been borne out by the evidence available to date," the WHO said.

According to Heymann, although the last decades of the previous century witnessed the emergence of several new

diseases, SARS seems to present a particularly serious threat to international health. Although SARS has a low mortality rate – 4 per cent – its clinical and epidemiological features remain poorly understood. Except for the Human Immunodeficiency Virus-Acquired Immune Deficiency Syndrome (HIV-AIDS), most diseases that emerged during the past two and a half decades, or became endemic in new geographical areas, have features that limit their capacity to pose a major threat to international public health. Diseases such as avian influenza, and those caused by the Nipah virus, the Hendra virus and the Hanta virus failed to establish efficient human-to-human transmission. Others such as Escherichia coli O157:H7 and variant Creutzfeldt-Jakob disease depend on the food chain for transmission.

Although outbreaks of the Ebola haemorrhagic fever have been associated with high fatality rates – 53 per cent in Uganda to 88 per cent in Congo – person-to-person transmission requires close physical exposure to infected blood and other bodily fluids. Moreover, patients suffering from this disease cannot undertake travel. In contrast, SARS, whose mode of transmission has been likened to that of Ebola, is emerging in ways that suggest great potential for rapid international spread. Epidemiological data indicate that the gestation period for SARS is two to 10 days (an average of two to seven days), which gives ample time for the infectious agent to be transported from one city to another through an asymptomatic air traveller.

The Indian case and that of a patient travelling from Hong Kong to Vladivostok, have highlighted the emergence of another international path for the virus, namely the sea-route. Since the foci of the disease seem to lie in the West Pacific rim, it is surprising that even the WHO had not considered this as an important epidemiological factor. Should SARS continue to spread, the global economic consequences – already estimated at around $30 billion – could be enormous.

However, the outbreak of SARS has demonstrated how well the WHO can tackle a newly identified disease. The international collaborative research effort in understanding the cause of SARS was put together by the WHO in record time. The WHO believes that the system, which is now in operation can be applied to other pandemic outbreaks, including the release of a biological agent in an act of warfare or terrorism.

PUBLIC HEALTH

A reluctant battle against polio

Uttar Pradesh accounts for 64 per cent of the polio cases reported worldwide, but its Chief Minister, Mayawati, is honoured with the Rotary International award for her "outstanding personal contribution" towards eradicating the disease from the State.

PURNIMA S. TRIPATHI

THE World Health Organisation (WHO) has described Uttar Pradesh as the "epicentre of polio epidemic" in the world. As per WHO estimates, the State accounts for 64 per cent of all polio cases reported worldwide. In comparison with 2001, the State registered a sixfold increase in the incidence of polio in 2002. According to the WHO, the sharp increase was because of a decrease in the number of polio eradication campaigns that year. Besides, the campaigns that were conducted failed to reach nearly 15 per cent of the targeted population.

Launching the third phase of the national pulse polio campaign on April 7, WHO Director-General Dr. Gro Harlem Brundtland said: "Eighty-three per cent of all new polio cases are now found in India. Uttar Pradesh, in particular, should be the number one priority in order to stop the transmission of the polio virus around the world."

According to WHO estimates, India's record in polio eradication is worse than that of countries such as Bangladesh. (Bangladesh has been declared 'polio free'.) India tops the list of seven countries, where polio is still widespread. India and Nigeria are the only countries that have registered increases in the number of polio cases. The other countries where polio is prevalent are Egypt, Pakistan, Afghanistan, Niger and Somalia.

According to the WHO, in 2002, the epidemic spread across northern India and to hitherto polio-free States such as Maharashtra, Gujarat and West Bengal. In January 2003, a child was paralysed by polio in Lebonan for the first time in nearly 10 years. Genetic sequencing of the virus confirmed that it originated from Uttar Pradesh, WHO sources said. According to Rotary International, even in Bulgaria, which was declared polio free, cases were reported in 2002, and genetic analysis of the virus revealed it was from Moradabad in Uttar Padesh.

Given the State's poor record in dealing with the polio epidemic, it was rather surprising that Rotary International conferred the Paul Harris Fellow award on Chief Minister Mayawati for her "outstanding contribution" towards eradicating polio. The award, which includes a certificate, a gold medal and a Rotary pin, was presented to her by representatives of Rotary International and the United Nations Children's Fund (UNICEF), at her official residence on January 20. Mayawati, who became Chief Minister only in May 2002, said that eradicating polio would continue to be her government's priority. However, government officials seem to be at a loss for words when asked to elaborate on Mayawati's 'personal contribution' to eradicating polio. Even Rotary functionaries are unable to explain why the State had registered a sixfold increase in polio cases in 2002, despite the Chief Minister's "outstanding contribution".

A senior Rotary functionary, who has been associated with the pulse polio campaign, said the award had been conferred on the Chief Minister to "motivate" her to take more interest in the polio eradication campaign. A Rotary member said: "The increase has not been due to mismanagement at the government level. There are other factors responsible for it. One is the people's apathy to such campaigns, which lack credibility. Besides, misinformation about the polio vaccine being administered is also greatly responsible for the increase." According to him, an alarming factor was the resistance of people belonging to the minority

A mystery killer

An unidentified form of killer pneumonia, originally suspected to be a variant of influenza, is reported from various parts of the world. The World Health Organisation is gearing up to face the challenge.

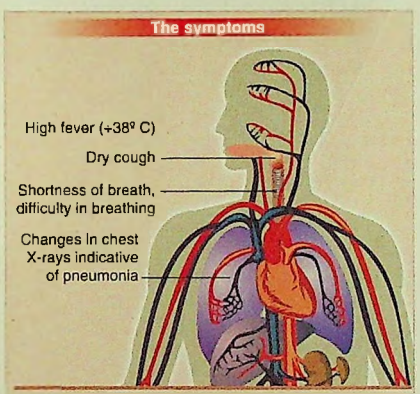
R. RAMACHANDRAN

OVER the past decade, a number of viral diseases, both vector-borne and zoonotic, have emerged in South-East Asia and the Western Pacific region (map on facing page). While vector-borne diseases primarily infect human beings although they are transmitted by other organisms, zoonotic diseases occur primarily in the lower animals but sometimes infect human beings too. The locus of the current outbreak of killer pneumonia, an atypical or unusual form of the disease that progresses rapidly to cause severe respiratory distress and consequent death, also seems to lie in this region.

The disease has spread across continents in a matter of days, and evidence seems to suggest that the infection was transmitted worldwide chiefly from the Hong Kong Special Administrative Region of China. It reached there possibly from southern mainland China, and was transmitted to various parts of the world through international air travel *via* Hong Kong, a major traffic hub. However, unlike the earlier epidemic outbreaks in the region, this particular disease is virulent and the spread of infection is rapid. The aetiology or the cause has not been identified definitively yet — a step necessary for developing the appropriate diagnostic test and determining a treatment regimen. Preliminary investigations seem to indicate that the pathogen maybe a new virus.

The first case of the disease, which has been called Severe Acute Respiratory Syndrome (SARS) by the World Health Organisation (WHO), was reported in Hanoi, Vietnam, on February 26 and within a month hundreds of people have been infected. As of March 22, 386 people across 13 countries were suspected to have been infected, and 11 of them had died (table on page 113).

While the 'affected areas' include the Canadian city of Toronto, China's Guangdong province, the Hong Kong Special Administrative Region, Taiwan, Singapore and Hanoi, Hong Kong accounts for the largest number of cases (222). Cases have been reported in Ireland, Italy, Slovenia, Spain, Switzerland, the United Kingdom and the United States, but they have not been classified as 'affected areas' as there has been no evidence of local transmissions in these regions. Cases have been reported in Australia – in New South Wales and Western Australia – too but the WHO figures do not reflect these. "This syndrome, SARS," said Gro Harlem Brundtland, Director-General of the WHO, "is now a worldwide health threat." The rapidity with which infection is spreading — with the cumulative figure of cases numbering 167 on March 17, 219 on March 18, 264 on March 19, 306 on March 20, 350 on March 21 and 386 on March 22 — is alarming at first sight. However, according to the WHO, SARS seems to be transmitted only through very close contact with an infected person. Cases have occurred almost exclusively among health workers treating or caring for SARS patients, family members and the like. There is no evidence so far of its spread through casual contact. Close contact with aerosolised droplets from the bodily secretions of an infected person appears to be an important source through which the disease spreads.



Other symptoms that might be associated: headache, muscular stiffness, loss of appetite, malaise, confusion, rashes, diarrhoea.

Severe Acute Respiratory Syndrome (SARS)
- **Pneumonia-like illness:** possible source *Paramyxovirus*
- **Incubation period:** seems to be 3 to 6 days
- **Contagion:** seems based on close contact with infected person, especially aerosolised droplets and bodily secretions.

Source: World Health Organisation/ Local medical authorities.

SARS was originally suspected to be a variant of influenza, given the outbreaks of A(H5N1) or 'bird flu' and A(H9N2) in the region in recent times, the latest being cases of 'bird flu' that were reported in Hong Kong in February. While influenza has been ruled out, the dose of the new pathogen needed to cause SARS, which is stated to be less infectious than the former, has not been determined.

The speed of international travel could contribute to the rapid spread of the disease. Countries with significant international traffic passing through them need to be vigilant. The Directorate-General of Health Services (DGHS) of the Government of India has mobilised a contingent of doctors at airports to monitor incoming passenger traffic and to handle cases according to WHO guidelines.

THE chief symptoms of SARS include the rapid onset of flu-like high fever above 38°C (100.4 °F) coupled with one or more symptoms of respiratory illness, including cough, shortness of breath, difficulty in breathing or hypoxia or chest X-ray (CXR) findings of pneumonia or acute respiratory distress requiring assisted breathing on a respirator. Early laboratory findings may include low platelet count (thrombocytopenia) and low white cell count (leucopenia).

SARS may be associated with other symptoms, including headache, muscular stiffness, loss of appetite, malaise, confusion, rashes and diarrhoea. CXR is, at present, the key tool to distinguish between suspected and probable cases. The incubation period is short, estimated to range from two to seven days, with a period of three to five days being more common. The person should have either had close contact with a person suspected of suffering from SARS or should have travelled to an area reporting cases of SARS within 10 days of the onset of symptoms. Some patients respond to treatment but others remain critically ill. Broad-spectrum antibiotics have not proved to be ef-

fective in halting the progression of the disease but the intravenous administration of antiviral drugs such as Ribavirin seems to have some effect.

The first reported case was of a person who fell ill shortly after arriving in Hanoi from Shanghai and Hong Kong. After he was admitted, several members of the hospital staff developed similar symptoms. The person died on March 13 after being transferred to Hong Kong. Almost all the cases reported to date in Vietnam have had to do with direct contact with the hospital where the first case, or the index case, was treated.

The first cases in Hong Kong were detected on March 12, when 20 health care workers developed symptoms of SARS. On March 19, an epidemiological breakthrough was achieved when officials of the Hong Kong Department of Health succeeded in tracing the origin of the infection in the region and identified the index case in the city's Prince of Wales Hospital. "In an outstanding example of detective work," as the WHO put it, the epidemiologists determined that seven people who contracted SARS had stayed in or visited Hotel Metropole in Hong Kong's Kowloon district between February 12 and March 2. The seven persons investigated included three visitors from Singapore, two from Canada, one person from South China and a resident of Hong Kong.

The investigation revealed that all the seven persons had either stayed in or visited the same floor of the hotel. The Hong Kong resident was believed to be the index case, who subsequently infected other early cases in the outbreak. He had visited an acquaintance, a doctor from southern mainland China, and had stayed at the hotel from February 15 to 23. The Chinese visitor, who became sick a week before staying at the hotel, is considered to be the original source of the infection.

Infections in nearly all other parts of the world, including the case in Vietnam, appear to have some link to Hong Kong. For instance, on March 13, Singapore reported SARS in people who had recently returned from Hong Kong. Investigations in Hong Kong revealed that they had stayed at the Metropole.

On March 15, a physician from Singapore boarded a flight from New York to Singapore *via* Frankfurt, accompanied by his wife and mother-in-law. He was unwell, as were his wife and mother-in-law; he was said to have come into close contact with a reported case of SARS in Singapore.

German health authorities were notified and the three passengers were transferred to an isolation unit in Frankfurt as soon as the flight landed. The specimens investigated in Marburg and Frankfurt am Main yielded evidence that the new virus was the causative agent. Viral structures were found in the blood plasma of the mother-in-law, indicating that a state of viremia had set in. However, there has been no evidence of any further transmission of the disease in Germany.

Cases in Canada have occurred essentially in two extended family clusters. At least one member of both the families had travelled to Hong Kong a week before developing the symptoms. Investigations in Hong Kong revealed that they were the same people who had stayed at the Metropole. Cases in the U.K. and elsewhere in Europe have been linked to travel to affected areas or contact with SARS cases. The 22 cases in the U.S. essentially constitute three clusters, according to the Centres for Disease Control and Prevention (CDC). The source of infection in all the three clusters can be traced to persons who had travelled to SARS-affected areas in Asia. Two of the 22 cases are reported to have stayed at the Metropole, although on different floors.

The only case in Thailand, which was reported on March 15, was that of a health worker who had travelled from Hanoi to Thailand on March 11. Apparently, he had come into contact with the index case in Hanoi. The Taiwan-based unit of the CDC has determined that cases in Taiwan can be traced to those who had travelled to the Guangdong region.

THE linkages indicate that Hong Kong is the main source of infection worldwide. It has now been learnt that the doctor was from Guangdong and had come into contact with a possible SARS case. However, it is not yet clear how the doctor contracted the infection.

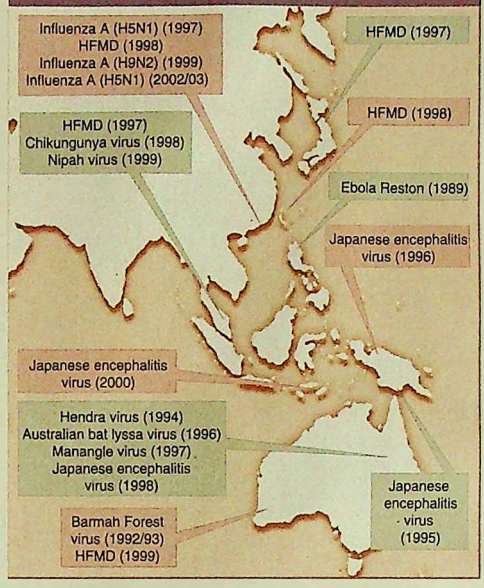
In the Table provided, there are blank spaces against China although it is believed to have reported cases with SARS-like symptoms. This is because it is not yet clear whether the cases of atypical pneumonia diagnosed in Guangdong in November 2002, were in fact SARS cases. The outbreak had peaked in mid-February but remained confined to that region. Also, Chinese authorities are yet to report to the WHO the exact number of such cases. But, it seems that the outbreak in Guangdong may well be of SARS.

According to the WHO, the Chinese authorities have issued a summary report with data on the diagnosis and management of 305 cases, including five that resulted in death, which is being analysed. It was found out that in two of the cases of death, there was chlamydia infection. The WHO expects this analysis to contribute to the understanding of SARS and possible links among the various outbreaks. Should a link be established, the WHO hopes that the data on a single outbreak involving the largest number of cases to date, might boost international efforts to establish effective treatment guidelines.

Apparently, the Chinese Ministry of Health has requested support from an international team. A five-member team constituted by the WHO, comprising specialists drawn from institutes participating in the WHO's Global Outbreak Alert and Response Network (GOARN) left for China on March 21. GOARN has a six-member team in Hong Kong and a nine-member team in Vietnam to assist in epidemiological investigations.

Investigations by scientists in Germany

Outbreaks of viral diseases in South-East Asia and the Western Pacific region over the past decade



Adapted from: JS Mackenzie et.al. Vol 7, No.3, June 2001, Emerging Infectious Diseases. Centres for Disease Control and Prevention, U.S.A.

and Hong Kong based on throat swab and sputum samples of patients have indicated that the causative agent is probably a new virus belonging to the paramyxoviridae family of viruses. This has been confirmed by investigations in Singapore and two more laboratories under GOARN. Previous tests conducted in a number of top laboratories failed to detect any known bacteria or viruses, including the influenza virus, recognised as the cause for pneumonia or respiratory symptoms, and known to be widespread in the most affected geographical areas. The failure of all previous efforts seems to suggest strongly that the causative agent may be a novel pathogen.

Viruses in the Paramyxoviridae family include common, well-known agents associated with respiratory infections such as respiratory syncytial virus (RSV), and childhood illnesses, including the viruses that cause mumps and measles. Some of these are widespread, in particular RSV, particularly during winter. Particles of these common viruses could be detected while screening specimens. Therefore, the possibility that tests for the SARS agent are detecting such "background" viruses rather than the true causative agent cannot be ruled out.

Indeed, Wolfgang Preiser, of the JW Goethe-University in Frankfurt am Main, one of the centres that found clues to the SARS pathogen, has cautioned against arriving at any firm conclusions as yet. He said: "These preliminary results only indicate a suspicion. Furthermore, even if the presence of a paramyxovirus was confirmed, it is not clear at this stage whether this might represent the causal agent of SARS or rather a coincidental finding." The isolation of similar microbes from additional cases of SARS will be necessary. It is to achieve this that WHO's GOARN set up 11 laboratories in 10 countries on March 17.

Cumulative number of reported suspected and probable cases of SARS from February 1 to March 22, 2003.

Country	Cumulative number of case(s)^	Number of deaths	Local transmission
Canada	9	2	Yes
China +			
Germany	2	0	None•
Hong Kong Special Administrative Region of China	222	7••	Yes
Italy	2	0	None•
Republic of Ireland	1	0	None•
Singapore	44	0	Yes
Slovenia	1	0	None•
Spain	1	0	None•
Switzerland	7	0	To be determined
Taiwan	6	0	Yes
Thailand	4	0	To be determined
United Kingdom	2	0	None•
United States	22	0	To be determined
Vietnam	63	2	Yes
Total	386	11	

Notes:
It is possible for the status of a reported case to change over time.
SARS is a diagnosis of exclusion. This means that whenever a known cause is found that could fully account for a patient's clinical condition, this patient should no longer be considered to be a case of SARS.
+The Chinese authorities have reported suspect and probable cases in Guangdong province. Figures are being updated.
^ Cumulative number of cases includes number of deaths.
• No documented secondary transmission in-country. No affected areas.
••One death attributed to Hong Kong Special Administrative Region of China occurred in a case medically transferred from Vietnam.

Source: World Health Organisation

IN recent years several new paramyxoviruses have been discovered. Paramyxoviruses are known to infect only vertebrates. Predominant among the paramyxoviruses are the Hendra virus and the Nipah virus, two related viruses isolated from bats in Australia and South-East Asia, which were responsible for the outbreak of severe diseases among human beings during the 1990s. These two are unusual in the family in that they can infect and cause potentially fatal diseases in a number of animal hosts, including humans. Most other viruses in the family tend to infect only a single animal species. No treatment was available for cases caused by both these viruses.

So far, evidence has been gathered essentially on the basis of observation of the virus particles through an electron microscope. The possibility of molecular differences between the new virus and the paramyxoviruses such as the Hendra and Nipah viruses, is strong. Therefore, the advanced polymerase chain reaction (PCR) technique may not immediately reveal the virus. But similar findings by several independent laboratories indicate that SARS might involve a new strain of paramyxovirus.

"More and more laboratories are finding paramyxoviridae virus," said Klaus Stöhr, a virologist of the WHO who is coordinating GOARN's multi-centric laboratory efforts to identify the causative agent. "What is promising is that many other paramyxoviruses can be excluded. So we have a paramyxovirus-like particle which is not any of the known paramyxoviruses." According to him, one of the laboratories has been able to isolate and culture the virus outside the patient. This is a major step towards the development of a rapid diagnostic test. However, researchers at Health Canada's National Microbiology Laboratory in Winnipeg reported on March 22 that they have found evidence of human metapneumovirus (hMPV), a newly discovered pramyxovirus , which was isolated by Dutch scientists from children with respiratory tract disease in June 2001, in specimens from six of the eight cases they are studying.

Although it is known to cause respiratory disease in humans, including some cases of pneumonia, at the time of discovery hMPV showed a different transmission pattern and was much less severe than the SARS agent. WHO has said that "at this point, it cannot be ruled out that an entirely different virus from another family may be responsible for the SARS outbreak". This is because earlier, this particular paramyxovirus had been ruled out by some laboratories.

Scientists in the Department of Microbiology of the University of Hong Kong, have been able to isolate and culture the virus outside the patient. Using a special cell line, the virus was isolated from the lung tissue of the index case in Hong Kong. This is a major step towards the development of a rapid diagnostic test.

Indeed, scientists in Hong Kong have devised a basic test, relying on the technique of neutralising antibodies, and were able to detect tell-tale antibodies in sera taken from eight SARS patients. The consistency of these findings indicates that the test is reliably identifying SARS cases. This "hand-made" test will be developed further into a more sophisticated diagnostic test.

The achievement will facilitate the amplification and nucleotide sequencing of portions of the viral genome, which will help determine its relationship with other known paramyxoviruses. "This is not just some light at the end of the tunnel. This is a real ray of sunshine," remarked Stöhr. Further steps would include more cell culture, and more trials in animals. "In essence, we are turning around information usually generated in months or years within hours and days," Stöhr said.

The other important concern of the WHO is to assist vulnerable countries in the event that the disease continues to spread. Up to now, cases have occurred in countries that are well-equipped to institute WHO-recommended precautions, including isolation and 'barrier nursing' practices, to prevent the spread of the disease.