SPECIAL REPORT

The Changing Face Of Breast Cancer

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Once a disease of the Western world, breast cancer has become a global concern. How women, doctors and communities are fighting back and bringing hope to those in need

BY KATHLEEN KINGSBURY

SIX MONTHS AGO, LIU LICHUN didn't know her breast could contain cancer. No one had taught the 40-year-old Chinese woman from Inner Mongolia what the disease was. She'd never heard of a mammogram or mastectomy. It had thus never occurred to her that she would lose her left breast to the mysterious illness nor that such a loss would probably save her life.

The lump that transformed Liu's world was not much larger than a marble. A company physician found it in June during the routine checkup that her employer, a Swiss firm in Shanghai, encouraged its sales staff to undergo each year. Once a biopsy proved the tumor was malignant, Liu believed that the diagnosis was a death sentence. "I'd never heard of anyone in China with cancer who didn't die," she says.

Five years ago, Liu might well have been among them. Breast cancer is the most lethal form of cancer for women in the world. An estimated 1 million cases will be identified this year, and about 500,000 new and existing patients will die

Photographs for TIME by Tamas Dezso

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To see a moving photo essay of one person's story of survival, visit **time.com/breastcancer**

Dr. Samia al-Amoudi *Saudi Arabia*
Ann Steyn *South Africa*
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Gloria Lin *Taiwan*
Pauline Kezer *U.S.*

Living to fight against the disease *Breast-cancer activists and survivors from all parts of the globe gathered in Budapest on Sept. 29 and 30. The first conference of its kind, it was organized by the U.S.-based Susan G. Komen for the Cure, the world's largest breast-cancer organization*

from the disease. In the U.S., breast cancer will be diagnosed in 1 in 8 women.

But in China, as in most other emerging economies, breast cancer is a relatively new concern, something that both patients and doctors are only haltingly learning how to treat. Previously a malady that mostly afflicted white, affluent women in the industrial hubs of North America and Western Europe, breast cancer is everywhere. Asia, Africa, Eastern Europe and Latin America have all seen their caseloads spike. By 2020, 70% of all breast-cancer cases worldwide will be in developing countries.

Worse, as the reach of the disease is expanding, the reach of detection and treatment isn't. For a woman battling breast cancer in the industrialized West, new diagnosis and treatment options come along all the time *(see article on page 46)*. Not so elsewhere. On Sept. 28 and 29, the U.S.-based breast-cancer-advocacy group Susan G. Komen for the Cure convened an international conference of doctors, advocates and survivors in Budapest. The delegates shared stories from more than 30 countries, and the differences among them were stark. In the U.S., an estimated $8.1 billion is spent to diagnose and treat breast cancer each year, and the ubiquity of mammography machines, clinics and specialists shows what that money can buy. In Pune, India, by contrast, home to 3.5 million women, there is just one facility that provides comprehensive breast-cancer services. Half of all Indian women with the disease go entirely without treatment. In South Africa, only 5% of cancers are caught in the earliest phase of the disease, Stage 0 or 1 (out of 4). In the U.S., that figure is 50%. In Ukraine, where mammography machines are available, if not plentiful, a shortage of film requires that doctors choose between taking the recommended two-view image of a patient's breasts and taking a one-view image of twice as many women. As for a desperately poor land like Kenya? If you can't travel overseas for treatment, says Mary Onyango, a resident of the country whose disease was diagnosed at age 40, "you just sit and wait for your death." Says Nancy Brinker, founder of the Komen group: "Poverty is a known carcinogen."

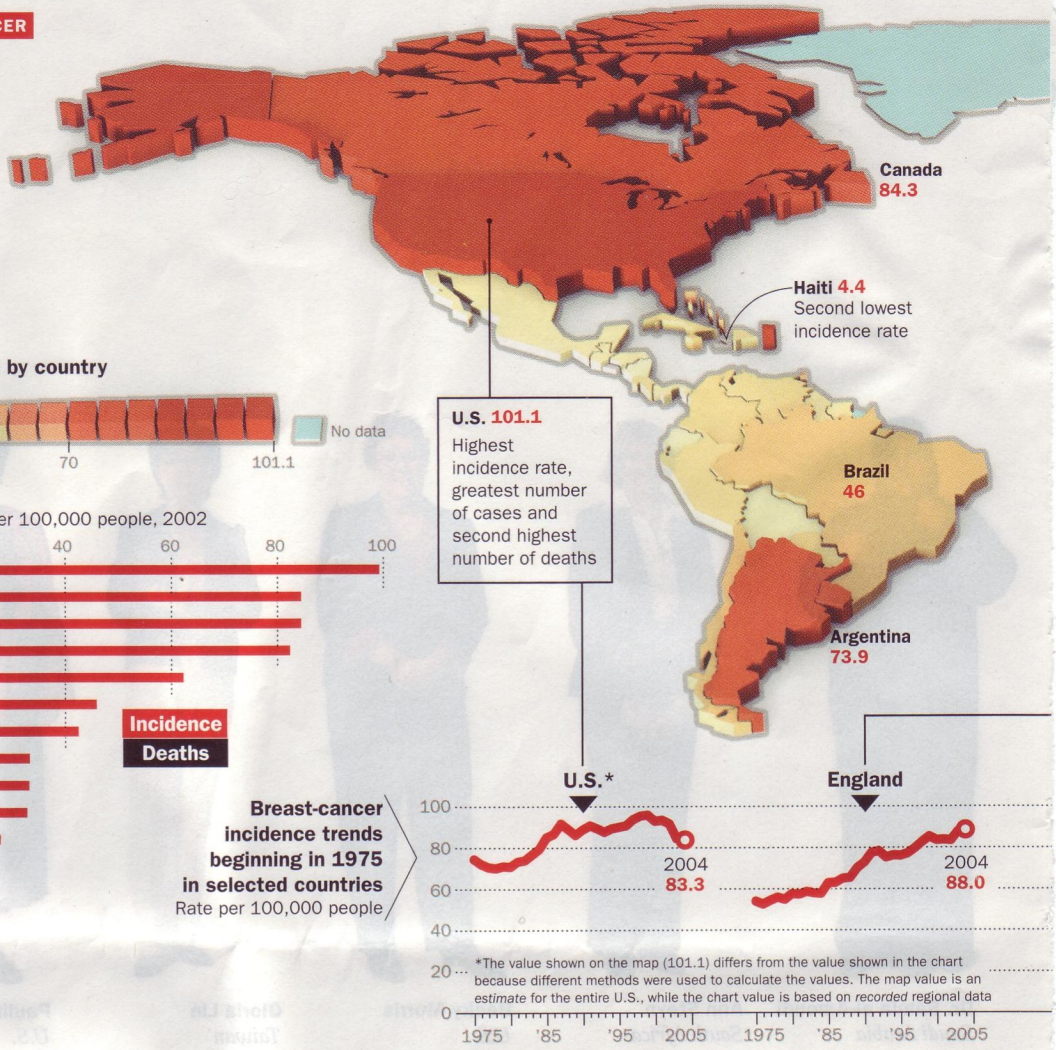
'If you can't travel overseas for treatment, you just sit and wait for your death.'
—MARY ONYANGO, A RESIDENT OF KENYA WHO RECEIVED A DIAGNOSIS OF BREAST CANCER AT 40

Some of this bad news is the result of very good news. Thanks to better sanitation, more food and improved public health, the average life expectancy in low- and middle-income nations has risen from 50 in 1965 to 65 in 2005. Women are simply living long enough to reach the age at which they're most susceptible to breast cancer. With Westernized life spans, however, can come Western habits too—fatty foods, lack of exercise and obesity, all of which may raise the incidence of breast cancer.

While the risk factors for a disease may

A Disease Breaks Free

Breast cancer is on the rise. Big countries have the most cases but not always the highest incidence (cases per 100,000 people). Rates in the developing world may be even worse than the spotty data show



cross borders freely, the cultural understanding it takes to treat it doesn't. Americans may live in a world of pink ribbons and LIVESTRONG bracelets, but in other parts of the globe, breast cancer is still a shameful secret. Every three minutes an Egyptian woman is informed that she has the illness, and one of her first fears is that her husband will leave her. Secrecy leads not only to misery but also to misinformation. In India, women with breast cancer may be forced to use separate plates and spoons because of the widespread belief that the disease is contagious. "There's fear to feed the children with her own hands," says Vijaya Mukerjee, a breast-cancer survivor living in Kolkata, formerly Calcutta. Brazilian nurse Gilze Maria Costa Francisco, a breast-cancer survivor herself, recalls a young mother asking her whether she could contract breast cancer if her daughter burped during breast-feeding.

All these local problems and beliefs mean that solutions will have to be similarly regionalized. "Physicians country by country will have to figure out how to beat this cancer," says Dr. Eric Winer, chief scientific adviser to Komen for the Cure. As a TIME investigation in North America, Latin America, Africa, Asia, Europe and the Middle East showed, there are places where those solutions are being found—and places where they aren't. There are countries in which lives are being saved—and others in which far too many are still being lost. In all of them, the first step to beating the disease is understanding how it works.

Ethnicity as Destiny

OF ALL THE THINGS THAT CAN DETERMINE A woman's chances of surviving breast cancer, perhaps one of the most powerful is the simple matter of race. Most women in the U.S. are of European ancestry, and the majority of those who develop breast cancer are struck by a type that is partly stimulated by exposure to estrogen. This is one reason the disease usually hits in middle age, after 25 or so years of the monthly hormonal surges associated with ovulation and menstruation. Since the cancer relies on estrogen to grow, drugs like tamoxifen and Herceptin, which block hormone receptors on malignant cells, can help starve the disease.

But Asian women, as well as black women in the U.S. and Africa, are at higher risk of developing a more aggressive form of breast cancer known as estrogen-receptor negative, or ER-negative. That illness strikes an average of 10 years earlier than the other variety and is indifferent to drugs that block estrogen since it isn't fed by estrogen in the first place. Worse, research findings released in June 2006 showed that 40% of premenopausal African-American breast-cancer patients have an even more dangerous form

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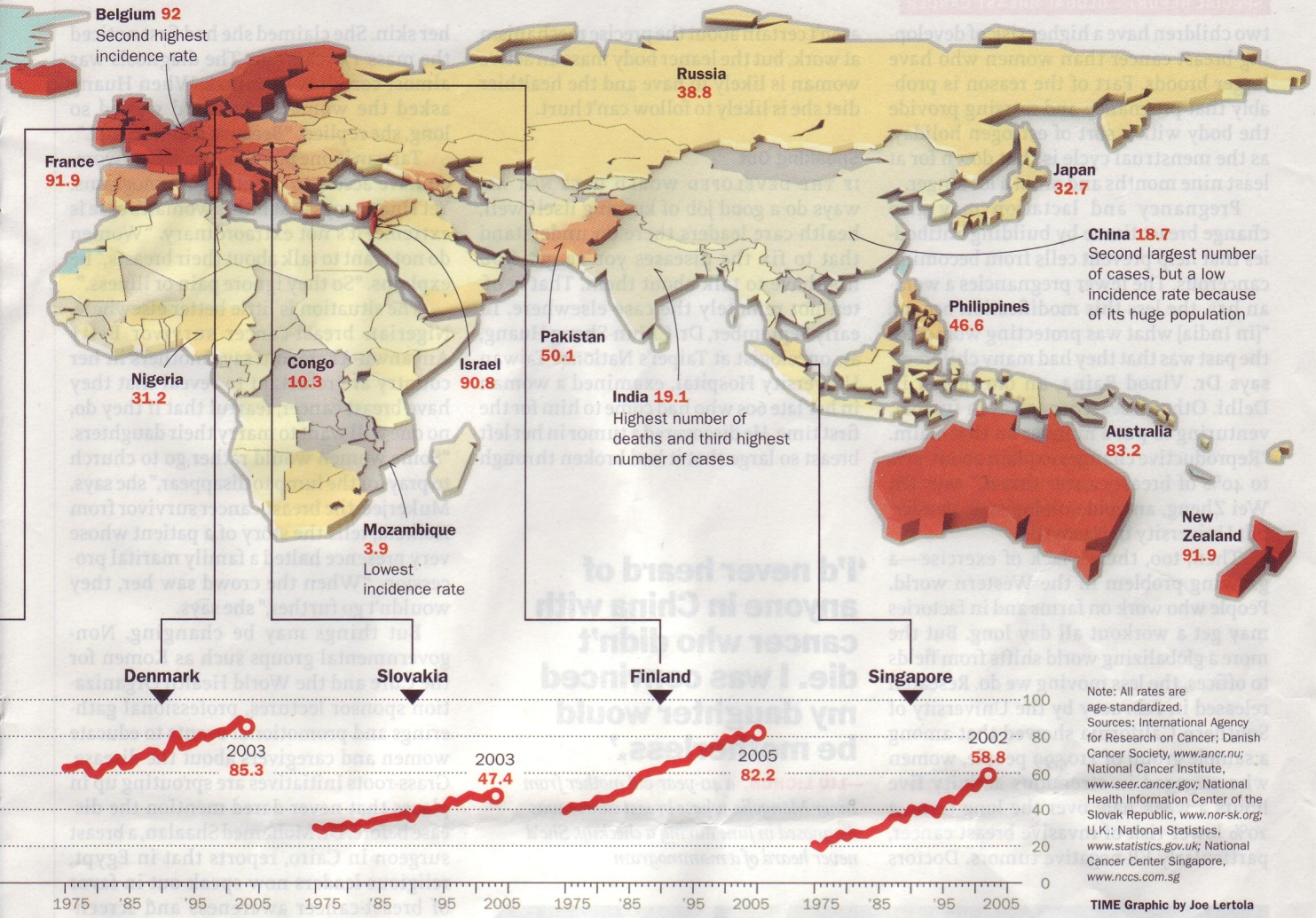

of ER-negative cancer called the basal-like subtype, resistant not only to estrogen but also to progesterone, another hormone that can be blocked by treatment.

Genes can cause problems of their own—particularly for Asians. Fewer than 10% of American women with breast cancer have a form caused by an inherited mutation in their genes called BRCA1 and BRCA2, which makes them three to seven times as likely to fall ill. BRCA-related breast cancer is more apt to hit before age 50 and to recur in the second breast. In a 2002 study, University of Toronto doctors concluded that because of the relatively early age of Asian breast-cancer patients and because hereditary cancers disproportionately occur in young women, "a high proportion of breast cancer cases in the East may be attributable to BRCA1 and BRCA2." More worrisome, some studies show that more than 96% of BRCA mutation carriers have ER-negative cancers.

Merely detecting breast malignancies in the Asian population may present special difficulties. Asian women tend to have denser breast tissue than other women, and many studies show dense tissue is up to five times as likely to develop malignancies. What's more, such tissue can conceal the disease since both tumors and healthy tissue may show up white on a mammogram. Asian women even draw the short straw when it comes to treatment. Doses of conventional chemotherapy are determined partly by a patient's height and weight, but mounting evidence suggests that certain ethnic groups absorb the chemicals differently. Researchers in Singapore have shown that Caucasian patients may require higher doses per pound of body weight than non-Caucasians. Since most dosing regimens are calibrated to the Western body, some doctors in Singapore report having to adjust quantities in up to 30% of their patients to avoid adverse side effects. "Local scientists must do their own research and find their own regimens," says Dr. Richard Love, scientific director for the Wisconsin-based International Breast Cancer Research Foundation.

Western Ways, Western Woes

IF THE SPREAD OF U.S. AND EUROPEAN LIFESTYLES is indeed contributing to the breast-cancer boom, the first and worst of all those new habits is almost surely diet. In a study released in July, scientists traced the eating habits of 3,000 Chinese women, ranging in age from 25 to 64. Half of the group ate a "meat sweet" diet of Western cuisine, rich in red meat, shrimp, fish, candy, desserts, bread and milk. The others stuck to more traditional Asian fare of tofu, vegetables, sprouts, beans, fish and soy milk. Postmenopausal women in the meat-sweet group showed a 60% greater risk of developing the most common kind of breast cancer.

While these results aren't definitive, researchers in Saudi Arabia and along Europe's Mediterranean coast have found similar patterns, as customary low-fat foods are abandoned. "We blindly accepted that the Western way of life was better," says Dr. Xu Guangwei, head of the Beijing-based China Anti-Cancer Association.

Western reproductive habits are also coming under scrutiny. As more women in newly industrializing nations join the workforce, they are limiting the number of children they are having. Research shows that women who give birth to fewer than

two children have a higher risk of developing breast cancer than women who have larger broods. Part of the reason is probably that pregnancy and nursing provide the body with a sort of estrogen holiday, as the menstrual cycle is shut down for at least nine months and often a lot longer.

Pregnancy and lactation may also change breast tissue by building antibodies that help prevent cells from becoming cancerous. The fewer pregnancies a woman has, the less this modification occurs. "[In India] what was protecting women in the past was that they had many children," says Dr. Vinod Raina, an oncologist in Delhi. Other researchers go even further, venturing to put a number on that claim. "Reproductive changes explain about 30% to 40% of breast-cancer threat," says Dr. Wei Zheng, an epidemiologist at Vanderbilt University in Nashville.

Then, too, there's lack of exercise—a growing problem in the Western world. People who work on farms and in factories may get a workout all day long. But the more a globalizing world shifts from fields to offices, the less moving we do. Research released in February by the University of Southern California showed that among a sample group of 110,599 people, women who engaged in strenuous activity five hours a week had, over the long term, a 20% lower risk of invasive breast cancer, particularly ER-negative tumors. Doctors aren't certain about the precise mechanism at work, but the leaner body mass an active woman is likely to have and the healthier diet she is likely to follow can't hurt.

Speaking Out

IF THE DEVELOPED WORLD DOES NOT ALWAYS do a good job of keeping itself well, health-care leaders there do understand that to fix the diseases you've got, you first have to talk about them. That is often not remotely the case elsewhere. In early September, Dr. Chiun-Sheng Huang, an oncologist at Taipei's National Taiwan University Hospital, examined a woman in her late 60s who had come to him for the first time. He discovered a tumor in her left breast so large that it had broken through her skin. She claimed she had first noticed the mass 17 years ago. The diagnosis was almost certainly terminal. When Huang asked the woman why she'd waited so long, she replied, "Because it didn't hurt."

'I'd never heard of anyone in China with cancer who didn't die. I was convinced my daughter would be motherless.'

—**LIU LICHUN,** *a 40-year-old mother from Inner Mongolia whose breast cancer was diagnosed in June during a checkup. She'd never heard of a mammogram*

Taiwan is one place in Asia where women have access to regular mammograms. Yet Huang says that if this woman's case is extreme, it's not extraordinary. "Women do not want to talk about their breasts," he explains. "So they ignore pain or illness."

The situation is little better elsewhere. Nigerian breast-cancer survivor Betty Anyanwu-Akeredolu says mothers in her country are reluctant to reveal that they have breast cancer, fearful that if they do, no one will want to marry their daughters. "Some women would rather go to church to pray for the lump to disappear," she says. Mukerjee, the breast-cancer survivor from Kolkata, tells the story of a patient whose very presence halted a family marital procession. "When the crowd saw her, they wouldn't go further," she says.

But things may be changing. Nongovernmental groups such as Komen for the Cure and the World Health Organization sponsor lectures, professional gatherings and promotional events to educate women and caregivers about the disease. Grass-roots initiatives are sprouting up in places that never dared mention the disease before. Dr. Mohamed Shaalan, a breast surgeon in Cairo, reports that in Egypt, religious leaders now speak out in favor of breast-cancer awareness and screening, making it clear to husbands that their wives must be examined regularly—by male doctors if need be. In Hungary, where every woman from 45 to 65 now gets a free annual mammogram—with even travel costs covered—breast cancer has dropped from first place to third as a cause of death among women. In neighboring Romania, however, things aren't as hopeful, and a new organization called Common Destiny is working to increase awareness and testing. In China the country's anticancer association launched a nationwide drive in 2005 to provide a million women, ages 30 to 70, with a free mammogram within the next three years.

The results of even the most aggressive efforts may be mixed. Mobile mammography units have taken to the field in South Africa to improve that country's woeful rate of detection and treatment. But when a suspicious mass is found, timely follow-up visits are difficult for the mammography teams, so it is left to the woman to visit a hospital. Often she won't. "If you live 60 km from a clinic and you feel a lump and it's painless," asks Dr. Aaron Ndhluni, a private breast surgeon in Cape Town, "are you going to walk the 60 km?"

PHOTOGRAPH BY ANAIS MARTANE FOR TIME