New Tuberculosis Lab Hailed as Breakthrough in Health Diplomacy

Last fall, Sharon Perry pulled her first shift on a North Korean labor brigade. The Stanford University epidemiologist spent 10 days in November in Pyongyang, working side by side with Ministry of Public Health colleagues—from student nurses on up to senior physicians—to help set up the isolated nation’s first laboratory capable of growing the mycobacterium that causes tuberculosis (TB) and detecting drug-resistant strains. The weather was unseasonably cold, so for 12 hours a day the unlikely comrades toiled in their parkas on tasks that included smashing old floor tiles with sledgehammers, testing microscopes, and installing ultramodern cabinets in which pathogens can be handled.

“We all pitched in,” says Perry, director of the Stanford-led Bay Area TB Consortium. Perry and her colleagues have defied the odds in getting the project off the ground. U.S. scientists have long had fitful relations with counterparts in North Korea: No matter how noble the intentions, science cooperation efforts have, with few exceptions, ended up stillborn or abandoned. In recent months, some U.S. nonprofits engaged with North Korea “have found their counterparts to be no different than any other U.S. nonprofit engaged with North Korea,” explains Heidi Linton, executive director of Christian Friends of Korea (CFK) in Black Mountain, North Carolina, a humanitarian organization and project partner along with the Bay Area TB Consortium and the Nuclear Threat Initiative (NTI). A team plans to return to Pyongyang next month to get the lab up and running.

That can’t happen a moment too soon. Following years of economic decline and the severe famines of the mid-1990s, TB and other infectious diseases have surged in North Korea. Due to increased surveillance and an expanding epidemic, Perry says, between 2006 and 2008 the number of TB cases doubled to 344 per 100,000 people.

“That’s similar to rates seen in sub-Saharan Africa,” says Gary Schoolnik, an infectious disease researcher and physician at Stanford University School of Medicine in California. Until now, North Korean clinicians have relied on the age-old diagnostic technique of staining sputum for acid-fast bacilli, which catches about half of TB cases. But this approach can’t reveal whether patients are infected with drug-resistant strains. “The prevalence of drug resistance could be very high,” says Schoolnik.

A looming drug shortage threatens to make matters far worse. More than 90% of North Korea’s TB drug stocks have been supplied by the Global Drug Facility, a nonprofit housed at the World Health Organization (WHO), under a grant that will run out this year. An agreement with the Global Fund to Fight AIDS, Tuberculosis and Malaria would continue supplying the drugs, but the earliest that could happen, sources say, is next year—leaving a minimum 6-month gap in coverage.

“It’s a nightmare scenario,” says Linton. “You can’t just leave TB patients without medi-
It would include being hearing from North Korean doctors says Schoolnik. “It made us envious.”

The stuff is state-of-the-art, says Perry. For starters, CFK had experience rehabilitating hospitals in North Korea and knew how to navigate the procedures for obtaining export licenses from the U.S. Department of Commerce.

CFK has proved to be the project’s linchpin. The North Koreans trusted it. “We experienced extraordinary cooperation,” says Perry. By December 2008, the Koreans were on board for the TB lab. The following May, CFK, which has also spent about $230,000 on the project, arranged for Perry, Linton, and others to visit the health ministry’s National Tuberculosis Institute in Pyongyang to hash out a plan. As with past projects, says Linton, “we realized we would have to bring every nut, bolt, and light bulb.”

The lab equipment arrived in Pyongyang on a rainy day last October. “When we opened the containers, the Korean researchers’ eyes lit up,” Linton says. “You could feel the energy—they realized this was finally going to happen.” A CFK team will return next month to complete the wiring and plumbing and check on other renovations that the North Koreans were due to complete. The Stanford team hopes to hold training workshops when the lab is operational, and NTI intends to make periodic visits to verify that the equipment is being used as agreed.

Meanwhile, Canada’s pending budget is light on new funds for science. Finance Minister James Flaherty moved to partially offset scheduled cuts in funding for the nation’s three granting science councils, though they’ll still take a blow, and there will be tighter competition for research operating grants. http://bit.ly/am3kO0

A new study of 30 unnamed federal workers found no difference in their experiences regarding research integrity in the Obama and Bush Administrations. The George Washington University study looked at accessing data, reviewing potential research, clearing papers for publication, and communicating with the public. http://bit.ly/bP6iD2

The National Research Council has recommended that U.S. funding agencies support an interdisciplinary research program on how past climate influenced human evolution. It would include drilling ancient lakebeds, studying new fossil sites, modeling paleoclimate, and educating the public. http://bit.ly/d6723P

A panel has recommended that the European Southern Observatory (ESO) build the record-setting European Extremely Large Telescope at Cerro Armazones in northern Chile. But Spain may continue its fight for a site on its La Palma Island. None of ESO’s current scopes in Chile was harmed in the recent earthquake. http://bit.ly/d8RExg

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Team spirit. Sharing the grunt work, TB project members roll a water tank into position. "We had expertise they needed," Linton says. For starters, CFK had experience rehabilitating hospitals in North Korea and knew how to navigate the procedures for obtaining export licenses from the U.S. Department of Commerce.

China will increase its science and technology budget by 8%, to $24 billion, in 2010. "We need to emancipate our minds and boldly make breakthroughs and innovations,” Premier Wen Jiabao told the legislators meeting at the National People’s Congress. http://bit.ly/bc1VtZ

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