

## Prisons in Post-Soviet Russia Incubate a Plague

The collapse of the Soviet health care system in the 1990s coupled with prisons releasing improperly treated inmates and endemic poverty escalated incidences of multidrug-resistant tuberculosis to epidemic proportions

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**SICK AND BEHIND BARS:** Tuberculosis runs rampant in Siberia's prison populations.

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TOMSK, RUSSIA—Prisoners in western Siberia who contract tuberculosis (TB) get sent to a forbidding complex in the heart of this provincial city. Armed guards with dogs patrol the nearby streets. Barbed wire covers the top of the outer walls. Iron bars clang shut when anyone enters. TB can keep you out of a remote Siberian prison camp, but it doesn't keep you out of jail.

And a decade ago, passing through this prison hospital's portals also posed a significant risk of premature death. Between 1991 and 2001 the incidence of TB in Russia's prisons reached a staggering 7,000 cases per 100,000 inmates, according to one estimate. Prisoners made up 25

percent of all new cases in the nation. In this oil-rich province the size of New Mexico with just over a million inhabitants, the prison TB rate reached the equivalent of 4,000 cases per 100,000 inmates, with nearly one of every 11 cases proving fatal.

The massive economic dislocation that accompanied the collapse of the Soviet Union turned Russia into an ideal breeding ground for a TB epidemic. Unemployment and alcoholism skyrocketed. Health and social services collapsed. As petty theft and violent

crime soared, the prison population swelled to more than a million, with millions more moving in and out of incarceration. Many developed TB either because their immune systems, weakened by drugs, alcohol and poor nutrition, could no longer keep latent TB in check (an estimated one third of the world's population has latent TB) or they caught it from other prisoners.

The prisons in turn became an "epidemiological pump" for spreading the disease throughout the general population. Ex-prisoners, often with improperly treated TB that had mutated into the multidrug resistant form of the disease, moved back into cramped apartment blocs where, during the long, cold Siberian winters, hallways and unventilated apartments provided ideal conditions for airborne transmission to unwary neighbors, friends and family members. The annual rate of new TB cases among the general population in Russia more than doubled in the 1990s to 88 cases per 100,000 inhabitants. In Siberia the rate soared to over 130 new cases per 100,000 souls. For a comparison, the U.S. had around 10 cases per 100,000 residents per year during the same period, and currently has about four cases per 100,000 annually.

Russia's post-communism prisons incubated the TB epidemic at the very time that the nation's health care system, including its network of specialized hospitals and clinics for treating TB, underwent its own collapse. Antibiotics, traditionally produced in the satellite republics, were in short supply as barter trade with those newly independent states ended and nothing took its place. Money for diagnostic tests and microscopes to analyze sputum samples dried up. The result was stop-and-go drug treatments for many TB patients, which generated in Russia's Siberian provinces some of the highest rates of multidrug resistant TB (MDR-TB) in the world.

The World Health Organization (WHO) at first tried to combat the epidemic by pushing Russia to adopt its proved guidelines for treating the disease—DOTS, for directly observed therapy, short course. The regimen entails six to nine months of daily treatment with four oral antibiotics, directly observed by health professionals to ensure compliance. Health ministry officials in Moscow resisted, preferring to stick with the system inherited from Soviet days where doctors individualized treatment for each patient and relied on partial lung removal for hard-to-treat cases.

But bureaucratic intransigence wasn't the problem here. Local doctors were more than willing to buck the national establishment and adopt DOTS. But their pharmacies had run dry. "We even lacked first-line drugs," recalls Alexander Pushkarev, the physician in charge of the prison TB hospital.

That only began to change in the late 1990s when financier and philanthropist George Soros as well as international relief organizations—first Great Britain's Medical Emergency Relief International, or Merlin, and later the Boston-based Partners in Health (PIH)—began using this province as a testing ground for developing a comprehensive program to combat TB. Funders over the years have included Soros's Open Society Institute, the Bill and Melinda Gates Foundation, the Eli Lilly and Company Foundation

and, since 2004, the Global Fund to Fight AIDS, TB and Malaria, which gave the local health authorities a five-year, \$10.7-million grant.

The strategy at first focused on bringing DOTS to Russia. But, starting in September 2000, the groups began taking a riskier and more expensive approach that had been developed by PIH in Peru. They encouraged local doctors, first in the prison system and then throughout the region, to aggressively treat all cases of MDR-TB, which can take as long as two years with anywhere from six to eight drugs. Its architects dubbed it DOTS-Plus.

The strategy was facilitated by the creation in the late 1990s of a drug procurement consortium dubbed the Green Light Committee, organized by the WHO, the U.S. Centers for Disease Control, several NGOs and pharmaceutical firms like Eli Lilly that still manufactured the rarely-used antibiotics such as capreomycin and cycloserine needed to treat MDR-TB. Guaranteed purchase contracts and subsidies enabled countries like Russia to buy these second-line drugs at sharply reduced prices. "The cost went from \$10,000 to \$15,000 per patient to \$3,000 to \$4,000 per patient," says Peter Cegielski, the CDC's MDR-TB specialist, who joined the committee in 2000 and chaired it from 2004 to 2006.

Before taking a small group of foreign reporters and physicians on a tour of the 1000-bed prison hospital (currently only 60 percent filled with TB patients), director Pushkarev claimed the eight-year-old program had dramatically improved results. "In 1996 we had 60 patients die a year. But with the DOTS-Plus program, the death rate has gone way down. Since 2000, we've had zero deaths among new cases," he said.

The hospital infrastructure had to be almost entirely rebuilt. Global Fund money helped to build an airtight closet for collecting sputum. The lab for analyzing and culturing the samples got new equipment. Whereas prisoners with susceptible TB were sent to live in barracks, those found to have MDR-TB were sent to an isolation ward in the hospital, where they lived six to eight in the room.

Although those conditions are a marked improvement from a decade ago (at least the MDR-TB patients are isolated from other prisoners), the opportunity for reinfection is ever present under such crowded conditions. "Russia just doesn't get it with infectious disease," says Michael Rich, a physician with PIH who splits his time between Siberia and Rwanda. "They have great doctors and a motivated staff. But putting four to five people in a room in winter with the windows closed? Infection control is still an issue here."