WHEN THE IRON CURTAIN FELL IN 1991, Eastern Europe and Central Asia were barely touched by HIV. According to the most authoritative estimates of HIV's prevalence, it was the least affected region in the world. Russia, the largest country, had fewer than 1000 reported cases, and hundreds of those were children who had been accidentally infected in hospitals. Many public health officials in the region believed the AIDS epidemic raging elsewhere would make few inroads in their societies. This was a disease spread by gay sex, drug injections, promiscuous heterosexual partnering, and prostitution—behaviors, they thought, their cultures rejected so thoroughly that HIV didn't stand a chance. Today, the Russian Federation and Ukraine alone have twice as many HIV-infected people as all of Western and Central Europe combined. And in an increasing number of countries in the former Soviet Union, ВИЧ, Russian for HIV, is no longer a foreigner's problem.

At the end of 2008, according to a December 2009 report from the Joint United Nations Programme on HIV/AIDS (UNAIDS), the number of infected people in the region totaled 1.5 million—a jump of 66% from 2001. “Eastern Europe and Central Asia is the only region where HIV prevalence clearly remains on the rise,” the agency concluded.

The first signs that the epidemic was poised to explode came in 1995. But despite subsequent warnings from UNAIDS and others, few governments in Eastern Europe and Central Asia have made concerted efforts to slow the spread of the virus, and some have defiantly rejected methods that have worked elsewhere. “In all of the regions of the world, it was possible with awareness and prevention to stop the growth, and yet the epidemic is still growing here,” says Dennis Broun, the UNAIDS regional director based in Moscow. Although the driving force is injecting drug users (IDUs) sharing needles, the Russian government in particular has refused to embrace “harm reduction” strategies, such as distributing methadone, a substitution treatment for heroin and other opiates, and exchanging needles and syringes, that have stymied the virus elsewhere. “It's a pity,” Broun says.

Today, Russia and Ukraine account for more than 90% of the infections in the region. This spring, Science traveled to both countries and met with public health officials, researchers, clinicians, nongovernmental organizations (NGOs), vulnerable groups, and infected people. The countries have responded to the epidemic differently in some key ways—Ukraine, for example, in December 2007 legalized methadone importation (see p. 165)—reflecting their different resources, political climates, and cultures. But ultimately, they face many of the same challenges in both treatment and prevention, as they wrestle with antiquated health care systems from the Soviet era, patchy epidemiology, the increasing spread from IDUs to their sex partners, rampant tuberculosis, staggering infection rates in drug-using street youth (see p. 170), corruption, police brutality (see p. 169), isolation from the West, and weak and fractious research communities (see p. 173).

Many on the frontlines of combating the epidemic in both countries stress that great strides have been made in preventing mother-to-child transmission and providing anti-HIV drugs for treatment. But they have become
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more than 1500 infections, and three times the next year alone, Russia detected reported cases, and a mere seven were IDUs. The majority were IDUs. The diagnoses were reported the next year, and one IDU tested positive in two Ukrainian countries had shown some interest but not, notably, the largest and most influential one, Russia. “Sadly, at the moment we haven’t had any of our invitations accepted,” said Robin Gorna, the society’s executive director. And she hopes that removing the language barrier, and the meeting’s proximity to Russia and Ukraine—as well as to smaller countries in the region with burgeoning epidemics such as Uzbekistan, Kazakhstan, Estonia, Belarus, Moldova, and Latvia—will create a momentum for change that she and others believe is desperately needed.

Improved responses, however, will require government leadership and accountability coupled with science. To that end, the society has made a great effort to attract government officials from Eastern European and Central Asian countries to the meeting. As of June, a few countries had shown some interest but not, notationally, the largest and most influential one, Russia. “Sadly, at the moment we haven’t had any of our invitations accepted,” said Gorna. Science’s requests for interviews with several Russian government health officials similarly went unanswered.

Registered complaints

Theories outnumber facts in attempts to explain why the epidemic in the region took off in the mid-1990s among Ukrainian IDUs (see p. 161). Although mass screening began in the late 1980s, Ukraine had not detected more than 80 cases in a year. But in March and April of 1995, more than 1000 IDUs tested positive in two Ukrainian cities, Odessa and Nikolayev. Some 12,000 diagnoses were reported the next year, and the cases more than doubled by 1997. The majority were IDUs.

Russia in 1995 had only 1062 total reported cases, and a mere seven were IDUs. But the next year alone, Russia detected more than 1500 infections, and three times that number in 1997—60% IDUs.

As the number of HIV cases in both countries steadily grew, the limitations of their epidemiology became increasingly apparent, and today, vast differences separate government figures from those put out by UNAIDS. Russia and Ukraine count only “registered” HIV infections, which means people who come into the health care system and high-risk groups such as prisoners and identified drug users. No effort is made to assess the prevalence in men who have sex with men, a large high-risk group that is heavily ostracized and virtually ignored throughout the region by official HIV/AIDS efforts. UNAIDS and most countries outside the former Soviet Union combine officially reported cases with extrapolations from studies of high-risk groups and household surveys. “We don’t have epidemiology here,” complains molecular biologist Andrei Kozlov, who heads the Biomedical Center in St. Petersburg, the region’s largest HIV/AIDS research lab.

UNAIDS’ s Broun says the Russian case count, or prevalence, clearly understates the true figure because many IDUs fear being registered in databases as drug users and avoid health care facilities because of stigma and discrimination. People also often do not seek care until they have been infected for years and suffered substantial immune destruction.

At the end of 2007, the latest available UNAIDS estimate, 940,000 people in the Russian Federation—1.1% of the adult population—were infected with HIV. Russia’s Federal Research and Methodological Center for AIDS Prevention and Control reported at the end of October 2009, nearly 2 years later, just 516,167 registered cases.

Alexey Mazus, head of the well-appointed Moscow AIDS Center that provides care and treatment for city residents, staunchly defends his government’s official figures, insisting that they capture almost every infected person. “I have no belief in UNAIDS,” Mazus says.

The official Ukrainian numbers, 161,119 at the end of 2009, similarly differ dramatically from the UNAIDS estimate of 440,000 in 2007. According to UNAIDS, Ukraine has an adult prevalence of 1.6%, the highest in all of Europe.

The registration system in Ukraine has...
In flux. As transmission shifts from injecting drugs to sex, Russia’s and Ukraine’s epidemics have slowed, but Siberian cases recently spiked. Note official numbers of “registered” cases differ from UNAIDS’s estimates.

the same shortcoming as the one in Russia, but it has an additional problem, says Yuri Kobyscha, an epidemiologist in Kyiv who works with the World Health Organization (WHO). In Ukraine, individual states must pay for HIV tests, and many are cash strapped. “States often only test blood donors and pregnant women,” he says. “So people in the most at-risk populations then don’t have access.”

Outside Russia and Ukraine, no country in the region topped 16,000 infections by 2007, but tiny Estonia and Latvia had higher prevalence rates—1.3% and 0.8%, respectively—than any country in Western Europe.

Coming up next
Confusion over the number of infected people pales next to the unknowns about the rate at which new infections are occurring—the incidence—which ultimately determines the epidemic’s direction and how prevalence will change. Although a few rigorous studies have followed cohorts of uninfected IDUs to track new infection rates, researchers mostly look at fluctuations in the number of newly registered cases as a crude indicator. Some evidence suggests that the Russian and Ukrainian epidemics have stabilized and will not grow as large as once feared, yet a dearth of hard data mixed with increased spread in new locales make most prognosticators extremely cautious.

Past predictions about Russia’s epidemic in particular have proved wide of the mark. The U.S. National Intelligence Council in 2002 projected that Russia today would have up to 8 million infections—and an adult prevalence rate of 11%. Alexey Bobrik, a director of the Open Health Institute in Moscow, says, “We should be quite realistic that we will not be decimated by HIV. We’ll have more people die from car accidents and alcohol each year than from HIV for the foreseeable future. It’s a public health problem, but not a public health priority.”

Bobrik doubts that Russia will transition from a “concentrated” epidemic that is largely IDU driven to “generalized” spread, which is defined by prevalence above 2%. He notes that new registered cases peaked in 2001 at just under 88,000, and although there has been an uptick in official cases since 2006, the growth has been relatively stable, at about 10% per year. Epidemiologist Charles Vitek, who runs the U.S. Centers for Disease Control and Prevention office in Moscow, agrees. “I still don’t see much in the way of evidence of a sustained, expanding epidemic in the general population,” he says. “The number of new infections here is modest.”

Yet Vitek and Bobrik stress that most of the new infections could have been averted with better harm-reduction programs. Vitek further cautions that Siberia recently has seen steep jumps in prevalence rates (see map).

Epidemiologist Robert Heimer of the Yale School of Public Health is far from convinced that the worst is over. “Since so little prevention is being done and few of the efforts are directed at stopping the source of the epidemic, there’s the potential to see the transition from a concentrated epidemic in drug users to one in the generalized population,” says Heimer, who has conducted several incidence studies in Russian IDUs. “That’s never been seen on the planet.” Working with the Biomedical Center, Heimer has used different methods to assess incidence in IDUs and found that between 2005 and 2008, annual new infection rates ranged from 14.1% to 20.4%. “That’s not a stable epidemic,” he says.

Ukraine has no incidence data, says WHO’s Kobyscha, although the increase in registered cases has slowed. Kobyscha notes that prevalence in IDUs between 20 and 24 years old has plummeted from a high of nearly 30% to just over 8% in 2008, and sexual transmission eclipsed drug injection for the first time, suggesting that the country had reached the “saturation point” at which HIV has already infected the drug users who take the most risks. “We expect that in 2 or 3 years we’ll reach a plateau stage,” Kobyscha says.

Drug-drug interactions
On a chilly March night in St. Petersburg, social worker and psychiatrist Natasha Shuter asks the driver of her van to pull off a wide highway on the outskirts of the city and stop in front of a pay parking lot. Save for a man inside the guard tower at its entrance, the dimly lit lot looks eerie and lifeless, but Shuter, who works with the locally based NGO Stellit, knows better. She makes a call on her mobile phone, and minutes later, a 28-year-old woman emerges from one of the parked cars, resplendently dressed in a fur coat and knee-high black leather boots.

The woman, Tatiana, warmly greets Shuter, who for several years has helped the few dozen women who sell sex in this lot, educating them about HIV, providing condoms, and arranging doctor visits. Tatiana takes a seat in the van and catches Shuter up on her life. Tatiana started using heroin at 17 and learned...
HIV/AIDS in Eastern Europe

that she was infected with HIV 5 years ago. Although she has been arrested repeatedly and worries for her safety, she can’t imagine leaving the business unless she quits the drug. “It’s heroin that decides,” Tatyana says. But Shuter can do little to help Tatyana kick her habit, short of referring her to a nacoologist, a practitioner of a Soviet-era brand of psychiatry that has little success. So she tries to encourage Tatyana to receive proper care for her HIV infection, but that, too, is a challenge.

As Tatyana explains, she does not know whether she has suffered enough immune damage to be eligible for treatment because she has not had her blood tested to see how much the virus has depleted her CD4 white blood cells. “It’s very difficult to find time to get tested because of my working schedule,” she says. “And until there’s a great problem, there’s no great reason to do this. Until the cork pops out, you don’t do anything.”

Shuter sends Tatyana off with a big bag of condoms to distribute to friends. “It’s very difficult to break the cycle of the lifestyle,” Shuter says. “They work, sleep, wake up, go to the dealer, go to work.”

Russian AIDS centers have modern monitoring equipment, and access to anti-HIV drugs has steadily improved, with an estimated 66,000 people on treatment in December 2008—half the coverage achieved in sub-Saharan Africa. “It’s not difficult to get ARVs,” says molecular epidemiologist Elena Dukhovlinova of the Biomedical Center. “It’s difficult to get patients to them.”

Psychologist Alla Shaboltas, who works with Dukhovlinova, surveyed people outside the AIDS center in St. Petersburg and found that only 30% were IDUs. “They should be the biggest portion of the population at the stage of AIDS,” says Shaboltas. She says barriers to treatment exist within both the IDU and medical communities. Many IDUs, like Tatyana, don’t perceive that they urgently need monitoring and care, or they believe that ARVs are dangerous. Physicians, she says, often worry that IDUs won’t adhere to their treatment schedule and tell the patients they can’t start ARVs until they stop using drugs. “They lie to them,” Shaboltas says. Many IDUs also wind up in prison, where all health care is patchy.

On top of these obstacles, Russia and Ukraine have user-unfriendly health care systems: HIV, TB, and drug dependency are each treated in their own centers. There have been improvements since the Iron Curtain fell, says Shaboltas, “but you are in the Soviet system.”

Both countries have attempted to integrate care, and Ukraine even distributes methadone at a few clinics that also treat HIV and TB. But Ukraine estimates that only 5000 IDUs were receiving opiate substitutes as of January 2010, a fraction of those in need. “It’s not a problem,” says Konstantin Lezhentsev, a clinician and harm-reduction advocate in Kyiv. “It’s a tragedy.”

The use clock

Despite the many frustrations faced by people combating the spread of HIV in Russia and Ukraine, ARVs have extended many lives. As Lezhentsev visits the Kyiv City HIV/AIDS Prevention and Control Center, he stops outside the morgue. “Nine of my best friends and 15 of my patients ended up here,” he says. For the first time since it started tracking HIV, Ukraine recorded a drop in AIDS deaths last year. Russia similarly has seen a drop in AIDS deaths since 2007.

Olena Kravchenko, who heads outpatient treatment at the Kyiv AIDS center, points to what she calls her old “computer” that she had when they opened their doors 10 years ago: a three-ring binder. Kravchenko had little she could offer patients then other than an HIV test, and she had scant information about the disease in a language she understood. Today, thanks to money from the Global Fund to Fight AIDS, Tuberculosis and Malaria, her clinic treats 1300 adults and 120 children and monitors their CD4 counts and HIV levels in their blood. There are computers everywhere. The clinic also does TB diagnosis and has an IDU community center where they can exchange needles.

Yes, Kravchenko has a long wish list, and she disparages her government for relying on outside funding to address the country’s HIV/AIDS problem. But she is resigned to the fact that progress has to be measured by its own clock here, and they often lag far behind their Western European neighbors. “The more we’re developing, the more we want to work on international standards,” she shrugs. “There’s nothing perfect in this world.”

—JON COHEN