It’s a Tuesday afternoon in April, and doctors at the adult HIV/AIDS clinic at Jackson Memorial Hospital in Miami face their usual onslaught of patients. There’s the young, recently diagnosed gay man from Venezuela here for his first appointment. An older gay man who emigrated from Colombia and has been treated at the clinic for 18 years. A 37-year-old Massachusetts native who is battling a heroin addiction, has a drug-related heart condition, and has done time for selling sex. Rounding out the queue are an undocumented grandmother from the Dominican Republic, a mentally challenged and occasionally homeless African-American woman, and an elderly Haitian woman in a wheelchair.

The mosaic of patients represents the major drivers of HIV’s spread and the communities hard hit by AIDS in the United States. And it helps explain why in 2016, Miami had the highest new infection rate per capita of any U.S. city: 47 per 100,000 people, according to the Centers for Disease Control and Prevention (CDC). That’s more than twice as many as San Francisco, New York City, or Los Angeles.

“Miami is the epicenter of the epicenter of HIV/AIDS in the United States,” says Mario Stevenson, a virologist with a thick Scottish brogue who heads the infectious disease department at the University of Miami (UM) Miller School of Medicine, which shares a campus with Jackson Memorial. “There’s no abatement in our upward slope.”

The rest of the state isn’t faring much better. Fort Lauderdale, Orlando, and Jacksonville also made the list of top 10 U.S. cities for rate of new HIV diagnoses. And more HIV infections progress to AIDS here than in any other state, in part because many infected people who start taking antiretroviral (ARV) drugs don’t stick with them.

Stevenson, who specializes in HIV cure research, left Massachusetts for Florida in 2010. Since then, he has reached beyond probing how HIV hides in chromosomes to also addressing why the virus still infects and sickens so many people walking the streets outside his lab. “Stemming the tide is going to need more than just working at the bench doing molecular biology,” says Stevenson, who has pushed UM to bring together affected communities, legislators, and the Florida Department of Health (DOH) to better coordinate the response to their epidemic. “We’re saying, ‘Hey, guys, we’re in a mess.’”

As Florida’s HIV/AIDS caseload keeps growing, more leaders are calling for change. Stevenson helped spearhead a task force that last year issued a report called Getting to Zero for Miami. The report built on the treatment-as-prevention principle of the international Ending AIDS movement: Infected people rarely transmit the virus or develop AIDS if they know their status and take ARVs. The report urged Miami to strengthen its testing and treatment efforts—as has happened in San Francisco, New York state, and Vancouver, Canada (Science, 17 July 2015, p. 226)—and it promoted a proven prevention strategy called pre-exposure prophylaxis (PrEP): giving ARVs to uninfected people who are at high risk. At the state level, the same agenda is at the heart of DOH’s plan to eliminate HIV transmission and AIDS deaths, which it has rolled out, albeit slowly, over the past few years.

Florida has made some progress, but Stevenson knows the path ahead will be rough. He and others complain that state officials have turned away federal funding for prevention and care, limited sex education, and generally downplayed the problem. The reformers say that in addition to politics, they must tiptoe around cultural minefields, slash through excessive bureaucracy, and tackle the stigma that compromises HIV/AIDS efforts everywhere.

The push for reform also faces indifference, especially among state and local legislators. For them, other illnesses—heart
disease, cancer, diabetes, and Alzheimer’s, each of which takes more lives—often eclipse the need for HIV/AIDS resources, Stevenson says. And the epidemic can feel like old news. “Everyone recognizes the problem, but when it comes time on the microphone to say, ‘This is what we’re doing with HIV,’ there’s a disconnect,” he says. “We know how to address the issue. We know how to fix it. We just have to get up to speed.”

**WHY IS HIV SPREADING RAPIDLY** across the Sunshine State, famous for its tropical weather, wide beaches, the Everglades, and amusement parks? The stream of visitors and transplants drawn to those attractions is one piece of the puzzle. More than 100 million tourists visit Florida each year, some lured by the party-hearty, bacchana- lian reputation of Miami, Key West, and other beach towns. Since the AIDS epidemic surfaced in 1981, the state’s population has doubled to nearly 21 million people, many of them immigrants from Latin America or the Caribbean—and in several of the island nations in the region, HIV is substantially more prevalent than in the United States. Florida is also in the deep South, which, because of a surge of HIV infections among black and Latino men who have sex with men (MSM), is home today to nearly half the estimated 1.1 million people living with HIV in the country (Science, 13 July 2012, p. 168).

According to DOH modeling estimates, Florida in 2016 had 135,986 HIV-infected people, just behind California and New York. But 21,214 of those people—15%—did not know their status, and that fuels the state’s high transmission rate. “A significant fraction of the new infections come from people who don’t even know they have HIV,” says Michael Kolber, clinical director of UM’s HIV/AIDS program.

Florida’s complex demographics mag-
nify the challenge of reaching that 15%. A campaign that might prompt a Haitian immigrant to seek testing differs from what’s needed to reach Latinos, blacks, MSM, heterosexuals, drug users, the homeless, or the mentally ill. Urban and rural communities also have vastly different lifestyles and testing options. “It’s such a diverse state from the Panhandle to Key West that it’s almost like different countries,” says Jeffrey Beal, medical director of DOH’s HIV/AIDS section, based in Fort Myers.

Many doctors, especially in rural areas, still don’t routinely test for HIV, and some are slow to offer infected people treatment. “There’s been a lack of attention on the part of my fellow physicians—I have to be very honest about that,” says Beal, who began his career in Oklahoma at the start of the AIDS epidemic and burned out from watching so many patients die. He even quit practicing medicine for a year and moved to Florida to become a housing developer with his partner before the shortcomings of the state’s HIV/AIDS care in rural areas led him back to the clinic.

At the same time, not enough people seek out testing, further undermining the promise of treatment as prevention. Some fear being ostracized if they’re infected: Florida falls in the country’s Bible Belt, which CDC notes suffers from “homophobia and transphobia, racism, and general discomfort with public discussion of sexuality.” In conservative Clewiston, a few hours’ drive north of Miami, Timothy Dean, who is openly gay and has his HIV-positive status tattooed on his arm, sees doctors at the nearby county health department. But he knows several local, infected people who avoid it. “This town is very tight-knit, and rumors can start,” says Dean, who works for DOH to connect HIV-infected people to care. “Your children may not want nothing to do with you because they find out that you’re positive.” And Clewiston, a sparsely populated community built around growing and processing sugar cane, has no public transportation, so Dean says seeking care outside of town simply isn’t a realistic option for some.

Complacency, rather than fear, is the issue for other groups, such as immigrants from the many countries where HIV is relatively uncommon. MSM from Latin America, for example, may not realize that moving to Florida could boost their risk of infection, says UM HIV/AIDS clinician Susanne Doblecki-Lewis. “The idea that the same behavior can have different consequences in different locations is a little bit difficult to process,” Doblecki-Lewis says.

Other public health measures also have lagged here. Needle and syringe exchanges that now are in 32 other states—they were endorsed by the U.S. National Commission on AIDS in 1991—only became legal here in 2016. “We were decades late,” says UM

When people test positive, Florida’s system routinely links them to care. But the system falls short at keeping them there. Nearly one in three people are, in medical jargon, “lost to follow-up” for reasons such as transportation difficulties, stigma concerns, relocation, lack of social support, substance abuse, and poverty. In New York City, by contrast, which had nearly 90,000 people who knew their positive status in 2016, 88% were retained in care. As a consequence, only about half of the HIV-infected people here are fully suppressing the virus with ARVs, compared with 76% in New York City. Florida’s short-fall has two steep costs: People are more likely to spread the virus to others, and they have a greater risk of developing AIDS themselves.

“THIS IS DR. SUZIE, the doctor of the Haitian community!” announces the host of “Radio Coin,” a talk show on WLQY-AM in Miami that caters to the city’s large Haitian population. Suzie Armas, who runs Miami’s New Health Community Center in a neighborhood known as Little Haiti, takes to the microphone like a preacher at the pulpit. In a mix of Creole and English, she urges listeners to come to her clinic, regardless of whether they have insurance or legal immigration status, and receive a free HIV test. “If you become positive, next step is to seek treatment,” says Armas, a physician’s assistant who was a licensed doctor in Haiti and Mexico. “We will take care of you.”

Haitian immigrants have one of Florida’s highest new infection rates for people born in other countries, and Armas wants to make sure that people with the virus stay on treatment. But that takes a special effort with clients such as Chimens Point du Jour, 57, who worked as a high school administrator in Haiti but speaks limited English and tested positive for HIV in 2016 during a routine checkup at Armas’s clinic. Because of language issues, most newspaper articles or public health campaigns have little impact on people like him, Armas notes, and many other Haitians are uneducated, even illiterate. “But every Haitian living in the U.S. listens to some

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type of radio station,” she says. That makes “Radio Coin” a potent tool.

For Point du Jour, another draw is that the clinic offers him free transportation to appointments. “Bél bagay!” he says, which roughly translates to “This place is awesome!”

The center’s program for Haitians is but one small-scale attempt to help HIV-infected Floridians stay in care. Another is the Infectious Disease Elimination Act, known as IDEA Exchange, which Tookes and his team began in December 2016. IDEA Exchange offers Miami drug users clean needles, HIV tests, and referrals to rehab and treatment. The exchange also has a mobile unit that travels to the city’s drug hot spots.

Shortly after the IDEA Exchange van rolls into Miami’s Overtown neighborhood early one April morning, a steady stream of clients shows up. Natasha Dixon, 33, was diagnosed with HIV last year at the van. “I can barely take care of myself,” says Dixon, who brings along a kitten that the IDEA Exchange staff later agrees to adopt. A sometimes homeless mother of three, Dixon ran out of ARV pills when she left town to visit her mom. Tookes sees that Dixon urgently needs care and tells her they’ll arrange a clinic visit and restart her on the drugs, along with helping her find a place to live. “I want to get my life back together,” Dixon says. “This is crazy.”

But the Florida health system’s bureaucracy works against that sense of urgency. A few weeks later, when Dixon visits Tookes at his clinic, he says he cannot prescribe ARVs to her. Regulations stipulate that she first visit the county health department, meet with a case manager, and then enroll in the federally funded AIDS Drug Assistance Program before receiving treatment. Tookes attributes the breakdown to the Florida health system’s bureau-cracy works against that sense of urgency.

Beal says his team recognizes that Florida must revamp its response. He’s particularly buoyed by DOH’s recent moves. The department has begun to use some new federal money and repurpose state funds to find patients lost to follow-up, make HIV testing a routine part of care, promote PrEP, and immediately offer newly infected people a free, 30-day supply of ARVs while they clear insurance hurdles.

Change is underway. Aside from the new PrEP mandate from the state surgeon general, HIV testing is becoming more routine after a law change that simplifies the consent process. “Disease intervention specialists” at DOH have begun to comb through databases to find and then contact people lost to follow-up. And even Tookes, who is sharply critical of the system in Florida, was heartened in late May when DOH started a new project with IDEA Exchange to rapidly offer treatment to people his team diagnoses.

It’s early days. But once those barriers are knocked down, Beal says, “No one can really look me in the face in the state of Florida and say, ‘I can’t get the medicines I need.’” He does not expect to see an immediate decline in new infections. But, he says, “Hopefully, by 2019, we will.”

“Miami is the epicenter of the epicenter of HIV/AIDS in the United States.”

Mario Stevenson. University of Miami Miller School of Medicine

DOH policies, as well as Florida’s decision to not accept the federal government’s offer of “expanded” Medicaid, which makes it easier for low-income, younger people to receive care.

“There literally should be a conveyor belt, with a red carpet, to move her from the mobile unit into clinic with me sitting there smiling to welcome her into care,” Tookes says. “She made a major first step by coming to see us at clinic, but the barriers within our system are almost insurmountable.” Instead, after more than 6 weeks had passed, Dixon still was not back on medication.

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The Sunshine State's dark cloud

Jon Cohen

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