

WIRED

One Doctor's Answer To Drug Deaths: Opioid Vending Machines

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It's a winter afternoon in Vancouver, and Mark Tyndall is taking me on a tour of all the places people can go if they want to use drugs and be pretty sure they won't die.

Blue tarps and shabby tents with people sleeping in them line our route in the Downtown Eastside, where the wail of an ambulance siren is always around the corner. We see handwritten signs taped up in the back alleys, warning "Danger: Green Heroin. Use $\frac{1}{4}$ usual dose."

This is Canada's skid row, a place where almost everyone can tell you about the friends and neighbors they've lost to an overdose. This city has seen a sixfold increase in overdose deaths over the last decade, with more than 1,000 of those people dying since 2016 alone. According to the British Columbia Centre for Disease Control, more than 300 of those deaths happened in the last two years here in the Downtown Eastside, a roughly seven-block strip that contains one of North America's densest populations of injection drug users.

When we reach the dingy door marked Overdose Prevention Society, Tyndall swings it open and ushers me through. Inside the long, narrow space, there's a red partition, behind which more than a dozen people sit at sterile metal tables. They come here because it's a place where they can get a clean needle and inject drugs they buy off the street, with trained staff standing by to save their lives if that heroin turns out to be lethal.

It's one of six so-called overdose prevention sites (alternately known as supervised consumption sites or supervised injection sites) to open up in the city since 2016. That's the year that the line charting illicit drug overdose deaths in British Columbia ticked sharply upward.

Tyndall walks past the partition to a young guy with a septum piercing named Colm, who's keeping watch over the room. "Hi, I'm Mark Tyndall," he says, extending a hand. At 59, Tyndall looks lean and youthful in a pair of light wash jeans and a sporty rust-colored jacket. He has big, round eyes that crinkle at the corners when he smiles.

"Did you say Mark Tyndall? I definitely recognize that name," Colm says, admiringly. "I imagine a lot of people do."

Colm is right about that. Tyndall is an unlikely local hero in a neighborhood that's generally suspicious of bureaucrats. Tyndall has spent much of his career as one, most recently serving as executive director of the British Columbia Centre for Disease Control, or BCCDC. But if Tyndall is a bureaucrat, he's a bureaucrat with a rebel's heart.

"Mark is a doctor who has contempt for the medical profession, which is a really valuable thing," says Darwin Fisher, a manager at Insite, North America's first official supervised consumption site, which is located just down the road. "He actually knows something about the people he's dealing with."

A Harvard-trained doctor of infectious disease and epidemiology, Tyndall moved to Vancouver in the late 1990s after a stint treating HIV patients in Kenya. At the time, AIDS was decimating this neighborhood, and Tyndall took a job working at a local hospital, tending to patients' injection-related diseases and helping research needle exchanges in their early days. He spent a night sleeping in one of the neighborhood's single-room occupancy hotels to better understand his patients' barely habitable living conditions and pushed the government to give drug users access to lifesaving antiretroviral medications—still an experimental idea at the time.

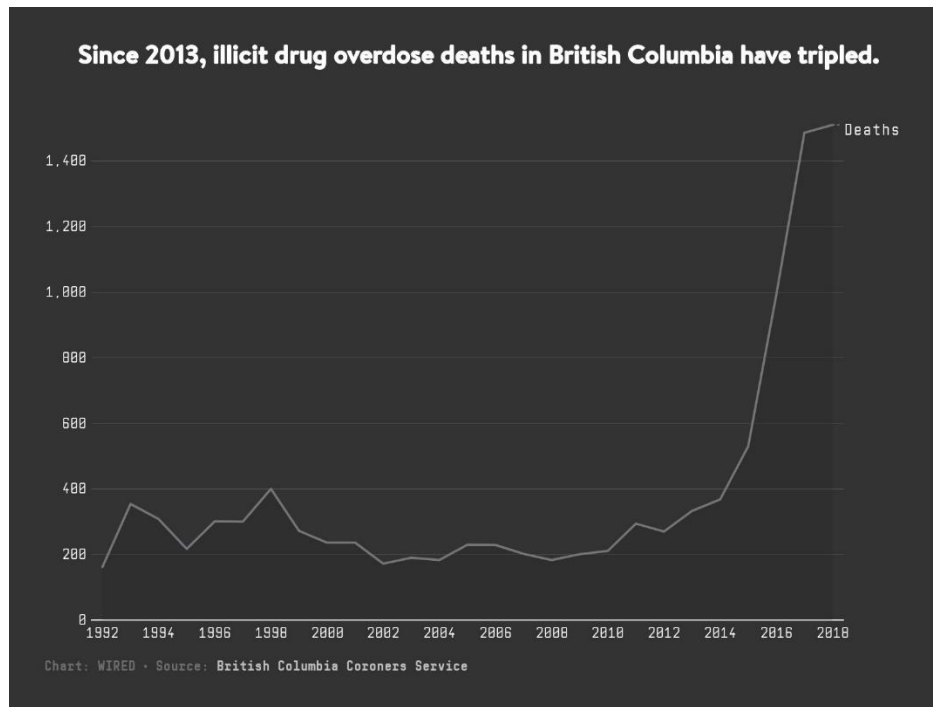
When the overdose spike hit, it was Tyndall, already head of the BCCDC, who called up a local community group and urged them to set up a pop-up overdose prevention site inside a tent and invite the press to watch them work. And he has co-authored dozens of peer-reviewed studies on the various benefits of supervised injection sites, which officials and advocates in cities across the US now use as evidence that they need to take a similar strategy in addressing their own careening crises.

But the thing that most likely triggered Colm's memory—the thing that has landed Tyndall in the news recently, and the thing that, if you ask around, may have cost Tyndall his job at the BCCDC earlier this year—is his latest and most audacious idea for combatting the overdose crisis. It's not enough to just give people safe spaces to use drugs anymore, he says. He also wants to give them safer drugs to use. And he wants to distribute them in vending machines.

Throughout north america, according to Tyndall, people who use drugs are being poisoned, not by the drugs themselves, but by all the other substances that have made their way into those drugs. Sure, the greedy pharmaceutical companies that made billions encouraging doctors to shower their patients in Oxycontin bear much blame for creating the addiction crisis. But what's killing most people these days isn't the pills. It's not even the heroin people turn to when they get cut off from the pills. It's the synthetic drugs—mainly fentanyl—that are cheaper, more potent, and easier to traffic. These substances have turned the drug supply toxic. In Vancouver, they've swallowed it whole.

To be clear, heroin was never safe, but before 2015, at least, there were about 200 to 400 overdose deaths in British Columbia per year. Last year, there were 1,510. Today, the BC coroner reports, fentanyl is detected in four out of five of those deaths. That's not unique to Canada. The same devastating trend is playing out in America, where synthetic drugs that scarcely registered a few years ago are now killing nearly as many people as heroin and prescription opioids combined.

“The plight of people using drugs didn’t change four years ago,” Tyndall says. “The drugs they’re using changed.”



Under President Donald Trump, the US has responded to this crisis by doubling down on law enforcement and beefing up border security. Canada, on the other hand, has embraced a philosophy known as harm reduction—which holds that it’s far more important to prevent people from dying of a drug overdose than it is to prevent them from doing drugs in the first place.

In addition to getting people on opioid replacement therapies (like methadone and suboxone) and making overdose reversal drugs (like naloxone) widely available, Canada has allowed overdose prevention sites to proliferate. In just the last few years, dozens of them have opened from Vancouver to Toronto. Health authorities have begun placing fentanyl testing strips and spectrometers at supervised injection sites to help people figure out what’s in the drugs they’re about to take.

These interventions—free of the kind of moralism that sometimes drives drug policy—have saved countless lives. The problem is, only a small slice of drug users ever step foot in these facilities. And so, the death toll continues to rise.

As an infectious disease researcher, Tyndall notes, the trend lines almost defy logic. “Any epidemic by now would be falling, just because the vulnerable population is being culled,” he says.

He believes a drastically new approach is in order. Which is why, about two years ago, in his role at the BCCDC, Tyndall began pushing Canadian health regulators to make a safer supply of opioids available to people. The thinking was, when iceberg lettuce starts poisoning people, the government does whatever it can to clear the produce aisle and replace the bad batches with

fresh, uncontaminated romaine. But with a product as physically addictive as heroin, somehow, the most common response is to tell people to use smaller amounts or, more often, not to use drugs at all. “We’re acknowledging people will go to any extreme to use this drug,” he adds. “To tell them not to use because it’s unsafe is ridiculous.”

Last year, the BCCDC won a \$1.4 million grant from the federal health authority, Health Canada, for a pilot program, led by Tyndall, that will study the effects of giving the Downtown Eastside’s most at-risk drug users a regular allotment of hydromorphone pills (the chemical name for Dilaudid) which they can take home and use instead of buying street drugs.

That, in and of itself, isn’t such a radical idea. Countries throughout Europe have been using opioids to treat people with opioid use disorder for decades. And in Vancouver, a growing community of researchers have turned the city into a sort of living laboratory for the scientific study of safe supply programs.

At Providence Crosstown Clinic in the Downtown Eastside, chronic injection drug users have been receiving injections of medical-grade heroin for years as part of two landmark longitudinal research projects. A few blocks away, at the Molson Overdose Prevention Site, another 104 patients are currently being treated with hydromorphone as part of a separate study.

But so far, all of these studies have required patients to visit a clinic every day to get their drugs. Tyndall worries that’s too high a bar for a chaotic and often homeless population, already wary of institutions. With his new project, Tyndall wants to uncouple drug delivery from the doctor’s office. In fact, he wants to remove human beings from the equation almost entirely by distributing the pills in a high-tech, heavy-duty vending machine.

The machine, designed in partnership with a Canadian tech company, would allow preapproved drug users who receive a prescription from their doctors to access safer opioids using a biometric scan of the veins in their hands. Such a mechanized approach, Tyndall believes, is the only way that an intervention like this can match the scope of the problem. After a year and a half of development and endless delays, Tyndall expects the first of these machines to arrive in Vancouver before summer. Whether he’ll ever get the government approval or funding to actually test the thing is another question altogether.

The concept of a vending machine for drugs is controversial, to say the least. Since he first floated the idea in December 2017, Tyndall has fielded endless knee-jerk reactions accusing him of enabling drug use, as well as legitimate fears about the pills being diverted to school kids and soccer moms.

In January, the Provincial Health Services Authority, which oversees the BCCDC, unexpectedly removed Tyndall from his position, as part of a leadership change that the agency said would have forced Tyndall to focus less on research and more on administrative work. Now he’s continuing to lead research on the opioid crisis, albeit in a less prominent position with the CDC. The shift fueled speculation that Tyndall had pissed off one too many government officials with his unyielding activism.

“They want someone who’s effective, but politically savvy,” speculates Russ Maynard, a community engagement manager at the local housing nonprofit Portland Hotel Society. “Don’t push too hard.”

The Provincial Health Services Authority denies that had anything to do with it. “Mark’s a colorful, well-known guy,” says Laurie Dawkins, the agency’s vice president of communications. “These qualities make him amazing at his research and at advocating for things that are controversial and difficult, and we’re totally happy he’s carrying on with that.”

In the midst of the changes, Tyndall also has struggled to get buy-in from regulators, like the College of Pharmacists. A vending machine is neither a pharmacy nor a pharmacist, meaning it doesn’t fit neatly into the existing rules regarding who can distribute drugs and where they can distribute them. “We have had many conversations with Dr. Tyndall, but we’ve yet to find a way for what he’s proposing to meet the requirements,” says Bob Nakagawa, the registrar for the College of Pharmacists.

All of this opposition stands to reason. Tyndall’s proposal does sound radical, flying in the face of traditional treatment programs that preach the value of sobriety. If the government just gives people drugs, his critics ask, why would people ever quit using them? Isn’t offering this option tantamount to giving up on them?

Tyndall’s heard it all before and he’s a little tired of the questions. Because his answer almost always boils down to the same darkly pragmatic, but profoundly empathetic point: Recovery, he argues, is a great option for people who recover. But lots of people never do. Right now, those people are at a greater risk of dying than ever before. The very least he, as a doctor, and we as a society, can do is find a way to keep them alive. “To me,” he says, “it’s only ethical.”

Tyndall is leading me to another stop on the tour, just past the litter-strewn, triangular spot of concrete generously named Pigeon Park, when he spots a familiar face. “Hey, Dean!” Tyndall calls out.

Dean Wilson walks toward us, smiling wide underneath his goatee, a leather jacket zipped up tight, hiding the canvass of tattoos that cover his back. Wilson is 63 now and carries more meat on his bones than he used to, but he still bears some resemblance to the wiry revolutionary, who once marched a black coffin into a Vancouver city council meeting to send a message about HIV and overdose deaths. Wilson has been using heroin since he was 13.

If it hadn’t been for people like him, banging on doors to advocate for supervised injection in the early 2000s, Tyndall wouldn’t have much to show me on this tour. But in 2003, Wilson and an army of his fellow drug users succeeded in getting the city to open North America’s first sanctioned supervised consumption site, called Insite.

From the outset, Insite was as much a public health intervention as it was a scientific experiment. The Canadian government granted the nonprofit a temporary exemption from the country’s Controlled Drugs and Substances Act, while researchers studied the program’s effects. Tyndall, who was working at the British Columbia Centre for Excellence in HIV/AIDS at the time, was one of the lead investigators on the project.

In the earliest days, he and his co-investigators were wary of overwhelming Insite's participants with lengthy surveys and probing questions. So they started off small, assigning research assistants to simply sit across the street and count the number of people walking in the door. Gradually, though, their research expanded. And the results were profoundly counterintuitive or at least inconsistent with conventional wisdom.

In 2005, they published a study showing that Insite visitors shared syringes at substantially lower rates than the rest of the community. In 2006, they published another report which found that while a large number of overdoses had taken place inside Insite, there had been no fatalities. (That finding holds true to this day.) Tyndall's team produced evidence that, contrary to people's concerns, Insite did not increase drug use, that it did not lead to more drug-related crime, and that it had ancillary benefits, like increasing condom use among visitors. They also published two separate studies showing that, although recovery isn't the goal of supervised injection, Insite did increase people's likelihood to enter detox and other treatment programs. Upstairs from Insite is a detox facility called Onsite, where people can go whenever they feel ready.

Over the years, the team produced an invaluable trove of evidence. "There was an agreement that no research would be in the public domain until it was externally peer-reviewed and published," says Evan Wood, Tyndall's co-author on these papers and the current director of the British Columbia Centre on Substance Use.

Nevertheless, Insite's critics remained resolute in their opposition. Among the most vocal was Stephen Harper, the man who would become prime minister in 2006, and who was quoted in 2005 saying, "We as a government will not use taxpayers' money to fund drug use."

Once Harper was in office, it seemed certain that Insite's days were numbered, and so in 2007 the Portland Hotel Society filed a lawsuit against the government, arguing that denying drug users access to these health services was a violation of the Canadian Charter of Rights and Freedoms. One of the plaintiffs named in the case was none other than Dean Wilson. "I'm articulate. I've got a big mouth, and I was sick and tired of my friends fucking dying," Wilson tells me all these years later. "I decided I was the lion who was going to protect the lambs."

The case dragged on for four years, weaving its way through the provincial court system. As Wilson and the other plaintiff, Shelley Tomic, racked up wins, the government kept appealing. Finally, the case landed before the Supreme Court of Canada, which issued a unanimous 9-0 ruling in Insite's favor in September 2011. The day of the decision, Wilson says, the residents of the Downtown Eastside threw a party.

The celebration wouldn't last long. Because while Wilson and others were fighting for Insite's survival, efforts to expand these initiatives around town largely stalled. At the same time, fentanyl was just starting to creep into the North American market. "There wasn't a lot of progress made around harm reduction in the years following that, because of our Conservative government," says Mark Lysyshyn, a medical health officer with the local regulator, Vancouver Coastal Health. "I think it left us really, in some ways, unprepared for the crisis."

Most people who live or work in the Downtown Eastside can instantly call to mind the first time they realized something new and lethal had hit the drug supply. For Wilson, it was seeing the unusually large number of collapsed bodies in the alleyways the day after welfare checks came out. For Tyndall, it was the coroner's reports. Between 2014 and 2016, his first two years at the helm of the BCCDC, the overdose death rate in British Columbia nearly tripled, and an increasingly large share of those deaths were from fentanyl.

In April 2016, the province declared a public health emergency. By December of that year, the situation was so dire that the local health authorities dispatched a military-style mobile medical unit to the Downtown Eastside. It was intended as temporary triage. By March, the unit had intervened in 269 overdose cases.

At the time, Insite was still one of just two supervised consumption sites approved by the federal government. But in the face of this surge, British Columbia's minister of health took the extraordinary step of allowing more sites to open, even without federal approval.

Almost overnight, new spaces began popping up in the Downtown Eastside and across the province. At first, the federal government gave its tacit consent by simply looking the other way, but eventually, Health Canada approved the creation of these overdose prevention sites in emergency situations. Different from Insite, which is officially categorized as a "supervised consumption site," the overdose prevention sites are more informal, less medicalized, and require fewer regulatory approvals to start up. And yet, even with these sites in place, the body count kept rising.

For that, Tyndall saw two obvious explanations. The first: Plenty of people who use drugs would rather not be supervised while doing so, and are never going to supervised injection sites to begin with. (That, or they go to the sites, just not for every injection.) The second: People were still using tainted drugs they bought on the street.

More than that, they still needed to shoplift, break into cars, and sell their bodies to make the money to buy those drugs. That locked people into a cycle of poverty and trauma, which often has everything to do with why they're using drugs in the first place. "Once you get to Insite with a pocket full of dope, most of the problems are over," Tyndall says. "The biggest stress is how to get that dope."

Giving people a safe supply of prescription opioids, Tyndall believed, would eliminate some of those societal stresses, and he began telling that to anyone who would listen.

The timing, as it turned out, was apt. In April 2016, researchers who had been working with the Downtown Eastside's Crosstown Clinic published a set of breakthrough findings from the so-called Study to Assess Long-term Opioid Medication Effectiveness trial, or SALOME.

It was a follow-up to an earlier study, also run out of Crosstown, which found that participants who received daily shots of heroin in a supervised setting were more likely to stick with addiction treatment and less likely to commit crimes and take illicit street drugs than participants who were being treated with methadone.

The problem was that heroin is both expensive and hard to come by in Canada, making it a tough sell as a broad medical intervention. So, for the SALOME trial, the researchers wanted to see if hydromorphone, a more readily available alternative, would have the same effect.

They divided 202 participants into two groups. One received shots of heroin; the other got shots of hydromorphone. After six months of treatment, not only did the effects hold, but crucially, the participants couldn't tell the difference between the two drugs.

That was all the proof Tyndall needed to assert that a safe supply of hydromorphone pills could be a workable alternative to street drugs. But when he pitched the pilot to a federal grant program at Health Canada, he still hadn't thought through how, exactly, he would go about distributing them. It wasn't until much later that he even considered the option of a vending machine, blurting it out in an unscripted moment in December 2017.

Tyndall was speaking at an overdose symposium in Victoria, British Columbia, and calling on the crowd to help him figure out a way to securely distribute the pills to a broad population. By way of getting the brainstorm started, he offered up the extreme option of using an opioid dispensing vending machine. "It was kind of off the top, and I didn't really think about it," he says. The remarks instantly got picked up—and picked apart—in the press.

But the more Tyndall thought about it, and the more he fielded reporters' questions, "I came to the conclusion this was the greatest idea ever."

All the coverage caught the attention of Corey Yantha, a young tech entrepreneur in Nova Scotia, whose company, Dispension Industries, had been tinkering away on vending machines to distribute cannabis, which is now legal in Canada. A few days after the symposium, Tyndall got a call from Yantha. "I hear you need vending machines for drugs," Tyndall remembers him saying. "We have vending machines for drugs."

Yantha didn't know much about harm reduction at the time, but after watching [Tyndall's TED talk](#) and meeting with him in Halifax, he was sold on the idea. "He's taken a lot of flak for his vision, but I think Mark is maybe one of the most forward-thinking people that I've ever heard speak or met," Yantha says.

The machine they've spent the last year and a half tweaking looks nothing like the metal-coiled contraption that holds potato chips and Snickers bars. Instead, it's a more than 750-pound kiosk with a 24-inch shatter-proof video screen on the front that can be programmed to, say, broadcast public health alerts or display information about treatment programs. To the right of the screen is a small, square scanner that uses Fujitsu's PalmSecure technology to take a biometric reading of the vein patterns in a person's hand.

Before accessing the machine, every user will have to get a prescription from a doctor and create a profile that determines their allotment of pills and how often they can access them. The bar to get into Tyndall's trial would be set intentionally high so as to include only the most at-risk people in the Downtown Eastside.

People will have to prove they are already injection drug users and face frequent urine tests to ensure they're actually taking the prescription drugs. When people scan their hands, the machine

will find their profiles, distribute the pills, then lock their accounts until it's time to receive another dose. All of that biometric data, according to Yantha, is fully encrypted, and the machines themselves will be equipped with alarms and cameras to keep watch over the supply.

Officials at Health Canada will be vetting the technical specifications to determine if Tyndall will receive more funding for this part of the project. So far, the \$1.4 million grant that Health Canada gave the BCCDC is set aside for the first phase of the trial, in which human beings will distribute the drugs. "The professionals signing their names to this would want to see specifications that the machine can do what it says it can do, and that there's a maintenance cycle and a backup plan in case there are errors," says Kirsten Mattison, director of Health Canada's Office of Drug Policy, Science and Surveillance. "We wouldn't want people to get used to having access to a service, and that service gets taken away and they're at risk again."

Getting the technology right is certainly a challenge, but not an insurmountable one. A far trickier thing for Tyndall is figuring out the best way to allay fears about people selling the pills off in the suburbs, or even worse, facing violence and threats from drug dealers who coerce them into handing them over. An even bigger question is how to accurately study whether any of this is happening at all.

"Once a drug gets diverted, it's outside your control," says Vancouver Coastal Health's Lysyshyn, who is supportive of the vending machine project. "What's to prevent someone from taking the hydromorphone, adulterating it with a bunch of other drugs, then selling them? Then we're part of the problem we're trying to prevent."

That's not a reason to avoid studying it, Lysyshyn hastens to add, but it's critical to consider. "We need to do due diligence in making sure we're doing no harm in the process of trying to do good," says David Patrick, Tyndall's successor at the BCCDC, who has known Tyndall for decades. "I think Mark's got a brilliant hypothesis on this, but I don't confuse a hypothesis with a conclusion."

Tyndall hasn't quite come up with the most satisfying answers to these questions. He isn't certain there is a way to do no harm. "There's nothing in public health that we do that there are no unintended consequences," he says. What he underscores the most is that buying drugs from dealers is already plenty dangerous. He doubts this will make it any worse.

Knowing this vulnerable population the way he does, Tyndall thinks it's unlikely that people who use drugs will do anything other than use the drugs they're getting for free. Still, ever the realist, he admits there may not be a foolproof way to ensure that not one of the hydromorphone pills ends up in the wrong hands. He just believes it's better than the alternative.

"There's a distinct possibility that one of these pills could slip into a high school," Tyndall says. "But in the whole scheme of things, with 1,500 people dying, it's a very small price to pay."

About two blocks away from Pigeon Park, inside the old Molson bank building that's been converted into a single-room occupancy hotel and an overdose prevention site, Christy Sutherland is leaving less to chance. Sutherland is a family and addiction doctor and medical director for the Portland Hotel Society, and like Tyndall, she also started thinking of ways to give

people who use drugs safer access to those drugs around the rise of the fentanyl crisis in 2016, shortly after the SALOME paper published. “It started with a patient,” she says.

That patient was Melody Cooper, better known in the Downtown Eastside by her nickname, Rambo. Now 44, Cooper had been using hard drugs since she was 27, often mixing heroin and crystal meth and at times working as a prostitute to make money. As a kid, she says was raped by family members, and later, by a rotating cast of foster parents. Her husband abused her, her children were taken away from her, and though she’d tried to quit using drugs with methadone, suboxone, and various rounds of detox, nothing ever stuck.

As the overdose death rate rose, Sutherland feared her patient would be next. So in September 2016, Sutherland decided to begin prescribing Cooper injectable hydromorphone. Unlike Tyndall’s approach, Sutherland designed it so that Cooper could only receive the injections under a nurse’s supervision. This is known as injectable opioid agonist treatment, which is different from safe supply programs in that it’s more tightly regimented. If the treatments succeeded in keeping Cooper off of street drugs, Sutherland explained, she would seek funding to study the idea with a much larger group.

“I felt privileged. I felt special,” Cooper told me the day I visited the Molson.

With just one patient, Sutherland didn’t need the blessing of any regulators. Hydromorphone is already legal, and in Canada, physicians have considerably more autonomy than they do in the US. In fact, Sutherland started dozens more patients on hydromorphone without seeking any government approvals.

But as Cooper began to wean herself off of street drugs, Sutherland decided to turn her small-scale experiment into a broader study. She worked with the regulators in British Columbia that govern physicians and pharmacists to develop a set of guidelines, and now she’s treating about 100 patients at a time as part of a five-year research project, which will track their long-term results.

On a typical morning outside the Molson, a handful of Sutherland’s patients will gather by a side door in the alley, buzzing the doorbell until it’s time to be let in. When the doors open, they take their seats at the metal tables inside and wait for one of the nurses to bring them a clean syringe, preloaded with liquid hydromorphone. Patients who opt, instead, for hydromorphone tablets, which are far less expensive than the liquid stuff, get a syringe and a premade slurry of ground-up pills, served in a sterile cooker.

Some patients inject themselves intravenously, while others let the nurse deliver it like a flu shot to the shoulder. This gives patients a longer-lasting, less euphoric effect. Afterward, the patients sit around, sipping coffee and munching on muffins, catching up on each others’ lives as a brown and white dog named Sage sniffs at their feet. After 15 minutes, they’re cleared to leave. A few hours after that, they return for a second shot, and the cycle repeats.

The scene inside feels like a hybrid between a chemo floor and a community center. It’s staffed at all times by two nurses and a mental health worker as well as a group of peers who are all either former or current drug users. It’s far narrower and more medicalized than anything Tyndall has suggested, but for roughly 300 people who have cycled through the program, it’s at

least safer than the street—making it a sort of middle ground between opioid-dispensing vending machines and the broader black market.

“It’s not like going to a drug dealer,” BeeLee, one of the patients who asked to be called by her nickname, tells me, as a nurse plunges a syringe into her arm muscle. “I’m going to a health care facility that’s run by nurses and doctors, and they’re giving me my medication for the day.”

Before she started the program, BeeLee says she was afraid she was about to become a statistic. She had started using Oxycontin when she was 28, after a doctor prescribed it for her fibromyalgia pain. At the time, she was married with two kids and had a thriving career as a lab technician. While she had always used drugs, she describes herself as a “functional” drug user. It wasn’t until she started using Oxycontin that, she says, “something switched in my brain.”

When she got cut off from the pills, BeeLee moved on to heroin. She left her family for a man who also used drugs, and together they fell into street life, shoplifting in vast quantities to pay for their addiction. By the time she was 36, BeeLee had a criminal record and had been homeless for a stint. At times, she turned to selling drugs.

She too had been in and out of detox and treatment programs more than a dozen times since 2012. She too had tried opioid replacements like methadone and suboxone and had worked the 12 steps through Narcotics Anonymous. But by December 2018, at the age of 44, she was still using fentanyl, and friends and family had repeatedly found her unconscious. “I was like ‘I’m going to die, and you’re not helping me,’” she remembers telling a nurse at her doctor’s office. That nurse soon found BeeLee a spot in Sutherland’s program. The day we met in February, BeeLee told me as a point of pride that she was going on her 18th day without using street drugs. By April, she’d been off them so long, she’d stopped counting.

The results of Sutherland’s research won’t be published for some time, but anecdotally, at least, she says she’s seen a change in the people she treats. Cooper has felt the difference too. “I’m not scrounging or worried about where I’m going to get my next shot, or how I’m going to get it, or where I’m going to get the next \$10 to get my fix,” she says.

For Tyndall, these sorts of stories are encouraging but ultimately overshadowed by the number of people dying. What the country (if not the continent) needs, he says, are options that more than a few dozen people at a time can access without a doctor present.

To some extent, Sutherland agrees. Despite her belief that doctors like herself are an important part of the equation, she has also co-authored a paper for the British Columbia Centre on Substance Use, calling for the creation of heroin buyer’s clubs, where people who use drugs can pay for access to a stable supply of clean heroin—sort of like joining a tightly regulated food co-op. Because people would have to buy the heroin at market rates, she says, they’d be less likely to sell it all over again than if they got the drugs for free.

Tyndall admits there are some academic turf wars playing out through these proposals, as researchers compete for public and regulatory approval. Sutherland, for her part, politely declined to comment on Tyndall’s vending machine idea, as did Evan Wood, her co-author on the buyer’s club paper, who studied Insite at Tyndall’s side all those years ago.

Yet at a time when so many people need help, it's hard to view these minor skirmishes and efforts to out-innovate each other as anything other than evidence of progress. If Tyndall or Sutherland lived south of the Canadian border, they'd be competing to accomplish a lot less.

On a rainy day nearly 5,000 miles southeast of the Downtown Eastside, Pennsylvania's former governor Ed Rendell ambled up to a podium inside the Washington, DC, headquarters of the Cato Institute, with a red, white, and blue pin affixed to his lapel. In front of him sat dozens of health care workers, academics, and local officials who had gathered for a daylong discussion on harm reduction, or as the pamphlets being distributed in the hallway put it, "shifting from a war on drugs to a war on drug-related deaths."

Earlier that morning, the crowd had sat rapt as Darwin Fisher, a program manager at Insite, told the story of the supervised consumption site's struggle for survival, the thousands of lives that had been saved there, and the dozens of scientific studies that helped prove its value to the government and the courts. When it came time for Rendell to speak, the consummate politician started with perhaps the only joke appropriate for a day of talks about overdose deaths. "After hearing the first two speakers, I am compelled to act upon an urge I had after the 2016 election," Rendell said. "That's to move to Canada."

As a board member for the Philadelphia nonprofit Safehouse, which is trying to open the country's first supervised injection site, Rendell now finds himself in much the same position as Insite's supporters did more than a decade ago. Only now, the stakes in Philadelphia are even higher than they were in Vancouver, back when Dean Wilson and his comrades marched that coffin into City Hall.

More than 1,000 people in Philadelphia have died of overdoses every year for the last two years. The vast majority of those deaths involved fentanyl.

The crisis has prompted city officials, including the mayor and district attorney, to openly back the idea of supervised injection; some have even made the trip to Vancouver to tour Insite for themselves. They're not alone: Cities including Boston, Denver, New York, San Francisco, and Seattle are all considering the possibility of opening similar sites, as the US loses more than 70,000 people a year to overdoses.

In 2017, synthetic narcotics killed nearly as many people in the US as heroin and prescription opioids combined.

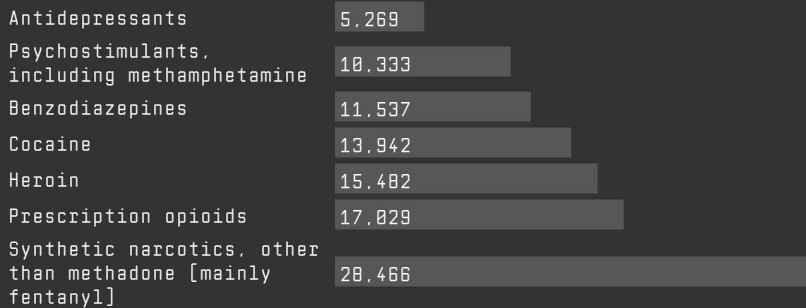


Chart: WIRED • Source: National Institute on Drug Abuse

The plans these cities are proposing are far less expansive than what Tyndall is requesting. Safehouse wouldn't give people drugs or even any paraphernalia—just a clean space and some supervision. Even so, the US Justice Department is working overtime to stop these efforts before they start.

In America, the so-called Crack House Statute makes it a felony to “knowingly open, lease, rent, use, or maintain any place, whether permanently or temporarily, for the purpose of manufacturing, distributing, or using any controlled substance.” Passed in 1986, it was intended to prevent crack-den proprietors from making a profit on people who use drugs. Now the Trump administration is wielding it as a weapon against activists trying to keep those same people alive.

In February, the Justice Department filed a lawsuit in the Eastern District of Pennsylvania, stating that “it does not matter that Safehouse claims good intentions,” and asking the court to declare that supervised injection sites are in fact illegal. Safehouse, meanwhile, contends it wouldn't violate the Crack House Statute, because supervised injection sites are created “for the exclusive purpose of” providing medical care, not unlawful drug use, as the law states.

Both sides are awaiting a decision, which could have a ripple effect on harm-reduction efforts across the country. No matter how the judge rules, Rendell said that Safehouse's board is determined to open. “I think we're going to win,” he added. “But if we lose, we're going forward,” even if that means risking jail time. Of course, that wouldn't be a great look great for the feds, Rendell explains; one of Safehouse's advisors is a Roman Catholic Sister of Mercy.

But Vancouver's example suggests that sometimes it takes a little civil disobedience to prove the effectiveness of these interventions. “You have all these people saying ‘This is bad. This is going to happen,’ and you're like, ‘Actually ... we saved 100 lives this week,’” Lysyshyn says. “The more you have that data, the less they can tell you why you can't do it.”

That was the case in Canada, at least. But the US government's battle against Safehouse squares with the overarching, tough-on-crime approach the Trump administration has taken regarding the overdose crisis. In promoting draconian immigration policies, the president repeatedly has cited the opioid crisis as one reason for the crackdown. In speeches, Trump has openly expressed admiration for countries that sentence drug dealers to death.

Meanwhile, members of his administration have pointed to Vancouver as a symbol of harm reduction's alleged failures. In an [op-ed for The New York Times](#) last year, deputy attorney general Rod Rosenstein denounced the concept of supervised injection sites, writing that they "destroy the surrounding community" by bringing drug dealers and violence to the area. As proof, he quoted a Redmond, Washington, city council member, who visited the Downtown Eastside and called it "a war zone" with "drug-addled, glassy-eyed people strewn about" and "active drug dealing going on in plain sight."

It's a revisionist history that ignores much of the evidence Tyndall and others have worked hard to produce over the years. That's not to say this is an inaccurate description of the Downtown Eastside. It's just that it was accurate long before supervised injection sites existed there. Insite opened in the neighborhood explicitly because it was in rough shape.

The people who pushed for it never promised they would do anything other than save people's lives, and they've held up that end of the bargain. Insite alone has intervened in 6,440 overdoses without a single death. That doesn't even include the thousands more people who've been saved at the other overdose prevention sites that have opened since then.

At the same time, it's hard to blame Rosenstein and the Redmond city council member for connecting the dots between the Downtown Eastside's squalid condition and the city's progressive drug policies. Tyndall says he's taken other American visitors interested in harm reduction on much the same tour that he took me on and struggled to explain how, while all these lives were being saved, things were getting so much worse. "They're like 'This is it? You're telling me this is progress?'" Tyndall recounts.

You can blame the fact that there haven't been enough sites or that the drugs themselves are still illegal. But the inconvenient truth that sometimes gets lost in the conversation about harm reduction is that drugs can do a lot of harm all on their own. Yes, fentanyl may be what kills people, and yes, the criminalization of drugs may be what's landing many of them in jail.

But even if no one winds up dead or behind bars, using drugs can still torpedo a career, break up a family, and drain a bank account. Harm reduction isn't synonymous with harm elimination, and activists pushing for supervised injection sites in the US would be wise not to hang too many hopes on what a single clinic can do.

These interventions, at the most basic level, are a last resort designed explicitly to keep people who use drugs alive. That means they may continue to live in a cycle of addiction, and it means they may continue to look like "drug-addled, glassy-eyed" masses on the streets of Vancouver or Philadelphia or San Francisco.

That's not pretty to watch, and it's natural to seek different results. It's also natural to want to know how many people are getting and staying sober. And if that number isn't charting up and to the right, it's natural to wonder, well, what was the point?

If any one of those people were someone you loved, the point would be abundantly clear. As an oft-cited motto in harm-reduction circles goes: You can't get sober if you're already dead.

Twenty years after he first started treating people in the Downtown Eastside, and a year and a half after he concocted a crazy plan that could help save their lives, Tyndall is realizing he might need to start playing by the rules.

Even as he continues to advocate for his vending machines, he's pushing the first phase of his less-ambitious pilot project through an ethics review board at the University of British Columbia, where Tyndall is also a professor of medicine. That one-year study, which will likely operate out of one of the Downtown Eastside's overdose prevention sites, will include 50 subjects and will require a health care worker to dole out the medication.

Initially, subjects will have to inject under supervision, but Tyndall hopes most of them will be able to begin taking the pills with them within a week. To get honest feedback from his subjects, Tyndall hopes to work with peer staffers to survey participants on whether they're diverting the drugs.

"I've been trying to do this for long enough that some progress is better than no progress," he says. Whether his vending machines will ultimately collect dust or someday be effectively deployed and persuade their doubters remains unclear.

What is clear, though, is that over the last year and a half, Tyndall's radical proposal did help shift the Overton window around a safe supply, broadening the conversation even at the highest reaches of government about what might be possible. In Vancouver, the city's newly elected mayor, Kennedy Stewart, has thrown his full support behind the vending machine idea and says he has discussed the need for a regulated supply of safer opioids with Prime Minister Justin Trudeau.

At the provincial level, British Columbia's health officer Bonnie Henry put out a press release last year calling for "safer alternatives to the unregulated and highly toxic drug supply." The push has spread well beyond Vancouver and British Columbia too. Last year, Toronto's chief medical officer also called for the regulated distribution of drugs as a way to flush toxic fentanyl from the market. And this year, Health Canada has set aside part of its budget to fund even more safe supply experiments. "Watch this space as that gets rolled out," Health Canada's Mattison says.

Lysyshyn believes Tyndall's vending machine idea deserves much of the credit for forcing these discussions into daylight. "The first time it came out in the papers, the government was like 'Oh my God, I can't believe he's saying this.' People told him to stop talking about it," he remembers. "The discussion that's happened since then and the concepts that have come out are totally out of the box. It really brought those issues forward."

If Tyndall were better at being a bureaucrat, he might be patting himself on the back. But he's not. Instead, he remains devoted to the people who continue to be at risk of drowning while the governments of the world decide whether and how to give out life preservers.

That includes people like Cooper. For about nine months after Sutherland started giving her shots of hydromorphone, Cooper says she was able to quit heroin altogether. In a 2017 Globe and Mail [article](#) that made Cooper briefly famous in the Downtown Eastside, Sutherland boasted that her patient didn't "meet the criteria for substance use disorder anymore."

"I had people asking for my autograph," Cooper remembers, laughing. For most of her life, Cooper says, she felt like the rest of the world viewed her as a "plague," parting like the Red Sea whenever she walked into a room. It felt good to have her picture in the paper and to hear Sutherland talk about her as a success story.

Cooper, who also goes by the nickname Rambo, was the first patient in Sutherland's program. "I felt privileged," Cooper says. "I felt special."

But not long after, Cooper started missing her shots, and when she did, she'd go back to using heroin. Eventually, Cooper dropped out of Sutherland's program altogether and stayed out for 11 months. It was only within the last few months that Cooper finally found her way back to the Molson and started back on the hydromorphone injections.

She even took a job there as a peer staffer, but as of mid-April, she was still using street drugs from time to time. Cooper told me she hopes to get back to where she was in 2017, when she got her picture in the paper and when her doctor told the world that she had gotten better. "I just don't think I'm ready yet. One day," she says. "Hopefully I'm not dead by then."