

# How Drug Anti-Diversion Techniques Can Be Used to Curb Doping

On January 30th, 2020, the Spanish Guardia Civil announced that it had disrupted a performance-enhancing drug diversion and trafficking ring operating out of Barcelona, with supplies originating in a Cadiz dialysis clinic. The sheer scale of this raid, aptly named “Operacion Hypoxianet,” again raises doubts about the effectiveness of sports anti-doping programs and testing. It may also foreshadow an emerging policy shift towards drug anti-diversion to reduce sports-related doping, to rebuild athlete trust, and, most importantly, protect public health and safety.

The absurd cache found in the seizure – at least 850 pre-filled recombinant erythropoietin (EPO) individual doses, long-known to be abused by athletes to increase endurance – shows that large-scale drug diversion operations connected to sports can thrive for years without exposure. According to [El Mundo](#), the Cadiz connection allegedly served hundreds of current customers and diverted an estimated 15,000 doses over at least the last 10 years. However, the scheme went undetected for perhaps its first seven years until 2016 – something which should worry WADA and anti-doping officials worldwide.

Dr. Grigori Rodchenkov, in Bryan Fogel’s documentary *Icarus*, confirmed that most scientific doping programs are reliant on diversion of authentic, legitimately-sourced doping medications. Rodchenkov explained that for his Russian program, diversion reduced both the medical risks and the possibility of “accidental positives” from using inferior product sources.

Unlike designer steroids which can be produced in amateur garage labs, bio-engineered medications like EPO are unique because of the immense sterile production infrastructure and regulatory tracking needed to deliver safe and reliable doses that patients need – and which dopers covet. The Hypoxianet arrests may eventually confirm diversion routes and, more importantly, the quantities involved, which makes this case significant to anti-diversion professionals and policymakers worldwide.

Most doping practices often start with a major crime – the diversion of a legitimate drug for illegitimate purposes. “Diversion” is defined as any criminal act involving a prescription drug, and it is a huge risk to all healthcare systems. In this context, it implies the rerouting of legal medical drugs into illegal sports-related cheating applications. The crime is the same whether committed by a medical practitioner to feed their addiction, or orchestrated by technicians to sell through the black market.

Diverted opioids like Oxycontin and Fentanyl have driven a worldwide public health crisis, and in the U.S. alone, diversion of narcotics and other high-value meds like chemotherapies and EPO costs billions of dollars in addiction, healthcare, and crime-related impacts. EPO is commonly used in kidney dialysis clinics as a routine treatment for chronic renal insufficiency. [Double-ordering](#) by the suspects created the EPO diversion surplus and was masked via altered clinic records.

Investigators have yet to disclose the full extent of the altered records. The fact that the scheme long evaded suspicion from healthcare authorities indicates patient treatment, inventory controls, and the financial ledger may all have been simultaneously falsified. In the absence of a data modeling system and diligent cross-referencing of all records by Spanish healthcare authorities, this would have blinded auditors from noticing the diversion pattern. And it could have also gravely endangered patient safety by changing treatment regimens to match any tampered order and dispense records.

“Authentic and safe EPO” may have been the implied black-market sales pitch, but this was an illusion. Two details revealed in a police [video](#) and by several news outlets immediately alarmed medical professionals and anti-diversion experts. First, much of the clinic’s diverted EPO was found haphazardly stored at room temperature, with no records of how long the doses were compromised. EPO must be

stored between 2 and 8 degrees Celsius (36 to 46 degrees Fahrenheit) to prevent degradation and spoiling, and if injected later could endanger the user. Shipment conditions were equally primitive and inadequate.

Second, investigators disclosed that most of the diverted EPO was found in pre-drawn hypodermic syringes of various dosages, and even small “trial doses” were offered to entice new customers. This might appear to be a cynical effort at black-market customer service. However, to anti-diversion professionals, poor storage, absent or falsified record-keeping, and inventory inconsistency are all red flags that highlight the real medical dangers of a diversion scheme.

It is possible that partial remainders from old doses could have been combined and then sold. In a well-controlled environment, these partial doses are segregated, and may often be destroyed as a safety protocol to prevent old remainders from co-mingling with fresh medication. Another possibility is that the contents of used doses were replaced with a similar-appearing solution, or the label from a legitimate dose was swapped onto a saline filled counterfeit.

Counterfeit, relabeled and repackaged EPO is a [well-studied](#) crime in the U.S., but stolen and swapped syringes are a tragically common diversion route. Two hospital staff in [Michigan](#) overdosed on the same day after injecting pain medications intended for patients; one died. Switching the doses may have prevented patients from receiving treatment; some Cadiz patients may have similarly been denied their therapeutic EPO (or worse, received compromised care due to altered treatment history).

The most dangerous scenario is when only part of a pre-drawn dose is injected directly into a patient, and the remainder in that hypodermic syringe is diverted. EPO is always injected subcutaneously in a clinic. If a diversion customer received a customized dose or altered syringe, and the needle had already been used on a patient, the risk factors for spreading infections are significant and unconscionable.

Many high-profile cases have shown that an addict will inject part of a Fentanyl dose intended for a patient, then top off that syringe with saline to mask the theft. One technician in [Colorado](#) infected up to 75 patients with Hepatitis C from trace blood she left on hypodermic needles, and exposed almost 6,000 more to the virus. Blood borne communicable diseases are common, and commonly spread via contaminated needles. Without proper supply chain and dispense documentation, every syringe from the Cadiz connection could possibly have had this infection potential.

After the Colorado and Michigan opioid crisis events were uncovered (among [countless others](#)), prescribing rules, documentation processes, and technology have rapidly evolved. More mature anti-diversion IT systems and other emerging innovations will provide clearer, multi-year data analytics for nationalized and private-payer health care networks over the coming 12 to 18 months. These will undoubtedly uncover more diversion operations around the world.

This eventuality frames a critical difference between anti-doping and anti-diversion. Doping and drugs go hand-in-hand, but it has been shown that anti-doping urinalysis and blood tests only [catch perhaps](#) 1 percent to 3 percent of those who are doping in any population of elite athletes. Anti-doping programs carry huge financial costs and severely intrude athlete personal privacy, yet the detection rate is surprisingly low.

In contrast, anti-diversion programs can rapidly analyze vast prescribing, inventory, and dispensing data sources to pinpoint diversion for healthcare regulator and law enforcement intervention. A diversion ring like Hypoxianet can serve hundreds of athlete customers and in an anti-diversion system applied to sports, each “customer” would meet WADA’s substance [possession criteria](#) to trigger a “non-analytical” finding. WADA’s [governance code](#) is limited to reinforcing integrity in sport, but the anti-diversion bar in healthcare is sworn far higher to avoid malpractice harm and tragedies.

Setting aside ethical arguments as to whether criminal codes should be applied to athletes who dope or otherwise cheat, anti-diversion places real criminal penalties on practitioners who violate their oaths of care, kingpins and middle distributors of doping rings, as well as any end-customers who order and receive diverted medical products. Athletes or not, there are genuine repercussions.

Next-generation anti-diversion systems can be a powerful deterrent by breaking the doping market's supply and demand forces. This could increase the chances of detection by exposing who diverts and who receives the medicine. Positive tests may increase as desperate cheats switch to inferior sources. Surveillance and drug testing could soon be more precisely targeted based on geo-location of diversion patterns – a monitoring practice being widely implemented in large healthcare networks today.

The integrity of our healthcare systems takes precedence because diversion – whether for addiction or doping – puts everyone at risk. Doping may compromise sport, but diversion can kill people. Indeed, Spanish healthcare authorities may have to carefully screen each Cadiz patient record to determine if treatment outcomes were negatively impacted by the suspect's actions.

From this perspective, every athlete who may have received a pre-filled hypodermic syringe of anything that was diverted from the clinic should be encouraged to visit a healthcare provider for testing immediately, for their safety and that of others close to them – not to detect performance-enhancing substances, but to determine if they have been exposed to blood borne diseases which can lay dormant for years before symptoms appear.

Rodchenkov also famously claimed in *Icarus* that anti-doping cannot exist without doping. Highly organized doping schemes like the state-wide Russian operation, and any which may be revealed by the Cadiz connection, are nearly impossible to conduct without diverted medical supplies. Anti-diversion strategy and new technologies are evolving faster than WADA, and the same tools used to protect public health could soon be part of a more powerful approach to combat sports doping.

However, WADA is not a public health or police agency, and despite cumulative outrage from fans and clean athletes with each successive doping scandal, constructive change may not be possible without reevaluating the anti-doping playbook. Consequently, Hypoxianet may spark global reexamination of anti-doping strategies, open a dialog to address doping as a public health issue similar to drug abuse, and place a higher priority on anti-diversion policies and systems to secure our medical supply chains. Regardless of where, and to whom the Hypoxianet investigation's anti-doping clues may lead to next, the battle lines have been redrawn.

*By Joe Harris, February 12th, 2020.*