HOW TO MAKE A KILLING

ALSO BY TOM MUELLER

Extra Virginity

Crisis of Conscience

TOM MUELLER

HOW TO MAKE A KILLING

DEATH, DOLLARS AND THE BUSINESS OF BLOOD

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Of all the forms of inequality, injustice in health is the most shocking and the most inhuman because it often results in physical death. I see no alternative to direct action and creative nonviolence to raise the conscience of the nation.

—MARTIN LUTHER KING, JR.,
Chicago, March 25, 1966

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Beginnings

I ENCOUNTERED DIALYSIS six years ago, while writing a book about whistleblowing. Several people I interviewed had blown the whistle on large dialysis corporations where they had formerly worked. The industry, they explained, is dominated by two publicly traded multinationals, Fresenius and DaVita. These companies and several smaller competitors have faced repeated allegations of healthcare fraud and other serious wrongdoing, and have paid substantial legal settlements to extinguish these allegations. (The settlements won by just three of the dialysis whistleblowers I spoke with—a financial executive, a medical doctor and a registered nurse—totaled around $900 million.) Yet they continue to post massive profits, year after year, and the US government continues to do business with them. Who knew there was so much money to be made in dialysis?

Looking deeper, I learned that dialysis had once been considered a miracle cure, and had made medical, ethical and legal history. In the 1960s, it became the first therapy successfully to replace a vital organ—the kidney—with a machine, a technological breakthrough that helped prompt the birth of the field of bioethics. In the early 1970s, recognizing dialysis as a medical paradigm shift, Congress pledged to pay for the treatment of nearly all Americans with kidney failure, making dialysis

America's first—and to this day its only—major experiment in "Medicare for All."

I was also struck by the industry's odd blend of high-stakes emergency medicine and routinized care. Though risks of infection, cardiac arrest and other medical crises are high, much dialysis is performed by low-wage dialysis technicians with limited training. Patients need multiple treatments a week, each lasting several hours, yet most dialyze not in their homes, but in clinics in strip malls and business parks. Many patients I met spend much of their lives traveling to clinics (typically three times every week), waiting to dialyze, undergoing the hours-long treatment, recovering from its side effects, and bracing psychologically for the next session. Fifty years ago, dialysis was high-tech, cutting-edge medicine. Today, it embodies America's corporate healthcare at its most extractive.

As I learned all this, healthcare was becoming an ever more prominent issue in US national elections. As America's one universal health program, "Dialysis for All" surely held important lessons for the country's larger healthcare debate—but as a way forward, or a warning?

To write this book, I interviewed hundreds of members of the dialysis community. I spoke with patients receiving care at the major dialysis companies, and current and past employees of those companies—nephrologists, nurses, dialysis technicians, social workers, psychologists and dietitians. I interviewed patients at smaller dialysis firms and university medical centers, some of whom dialyzed at home. I consulted attorneys, economists, union leaders, experts in healthcare policy, as well as nephrologists and nurses in several countries outside the US. Gradually a disturbing picture of American dialysis came into focus.

Before publication, I shared passages from my book with a number of organizations, private and public, whose activities I had described. These included the dialysis companies DaVita, Fresenius and Satellite, as well as the Mid-Atlantic Nephrology Associates, a group of dialysis providers in the Baltimore area. I also sent excerpts to the federal healthcare agency known as Centers for Medicare & Medicaid Services (CMS), the dialysis oversight body called the ESRD Networks, the Washington University School of Medicine, and Tenet Healthcare. Most of these organizations either did not respond, or chose not to comment. A few organizations did answer, however; and one, DaVita, replied at great length.

I have referenced some of DaVita's specific responses in the text of my book. However, it seems useful to summarize here the business principles according to which, DaVita spokespeople told me, their company operates—principles which, they said, rendered many of my assertions incorrect, or downright impossible.

1. DaVita states that patient welfare is paramount in its facilities: "The first consideration in every decision we make is patient safety. . . . We are committed to providing a comfortable, therapeutic treatment environment for all patients."
2. DaVita claims that involuntary discharges of patients from their dialysis clinics are a rare event. "In the event such a discharge becomes necessary due to patient behavior, we are committed to supporting the patient's continuity of care and operating within the guidelines that CMS tightly monitors and governs."
3. DaVita maintains that the dialysis industry is strictly regulated by CMS, the ESRD Networks, and state healthcare surveyors, whose various standards of care DaVita meets or exceeds.
4. DaVita says that all aspects of care provided at its facilities are determined not by DaVita itself, but by the independent physicians who visit patients there, write treatment orders, and decide whether to offer treatment in the first place. "As a dialysis provider, we do not make decisions about the duration or other parameters of any given patient's dialysis treatments."
5. DaVita claims that it treats all patients equally, whether their care is funded by private insurance or by a government program like Medicare. "The services we provide, how we bill for them, and the reimbursement rate are specified either by the government or in our contracts with our health insurance partners."
6. DaVita stresses its leadership in the industry: "We remain a clinical leader in the government's two key performance programs,

the Centers for Medicare & Medicaid Services' (CMS) Five-Star Quality Rating System and the Quality Incentive Program (QIP)."

7. DaVita does not comment on the circumstances of individual patients, "due to patient privacy concerns."

This, in brief, is how the company characterized its operations and values. My book draws a picture of dialysis in America that is often very different, and casts the rise of corporate dialysis as a cautionary tale about for-profit medicine as a whole.

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The Inner Sea

When a lobe-finned fish, the gilled and scaly ancestor of all terrestrial vertebrates, first hauled itself up onto the muddy bank of a Devonian stream some 375 million years ago, it carried within itself a pool of primordial sea. The creature's cells, blood and tissues contained a precise chemical solution that had been fine-tuned over previous eons, as its forebears swam the oceans. This concentration of salt water, electrolytes and assorted nutrients had been relatively easy to maintain in a marine environment, but as our new landlubber stumped on finny feet from waterhole to waterhole across dry land, preserving it became an enormous challenge. And failure to do so meant the creature's rapid demise: if the pH or water-salt balance or any of a dozen other equilibria shifted fractionally; if its metabolic wastes were not promptly cleansed away; then cell membranes degraded, nerve and muscle fibers stopped firing, organs failed.

Over subsequent hundreds of millions of years, these pioneers and their descendants ventured into every corner of a planet in constant flux. The Earth's rotation slowed and days grew longer, mountain chains rose and wore away, ice ages alternated with torrid interglacial periods, and the environment's basic chemistry changed. The bodies of the early wayfarers evolved endlessly into amphibians, reptiles, birds and mammals, as they colonized new niches, consumed new foods. Yet amid this outward variation, within themselves, the ancestral ocean remained. As it does to this day, in geckos, platypuses, peregrine falcons, hippos, and in humans.

Which is why we all need kidneys. Starting in early sea creatures as a tube to excrete metabolic wastes and excess salt, kidneys took on complex new biochemical tasks as creatures moved into freshwater and then onto land, where water, salt and other active ingredients of life, which had been plentiful at sea, now had to be jealously conserved. In the womb, all vertebrates pay homage to the basal importance of kidneys: in the early weeks of development, amphibian, reptile, bird and mammalian embryos all grow a pronephros and then a mesonephros, two throwback kidneys that first appeared in our marine ancestors, the jawless and the bony fishes. Only after the embryo reabsorbs these two proto-kidneys does a third, definitive kidney structure, the metanephros, become functional. These relicts of our inner fish not only signpost major phases of our evolutionary journey, but also reveal just how strongly the biochemical requirements of humans still resemble those of our distant forebears.

The great French physiologist Claude Bernard developed the concept of the *milieu intérieur*: the delicately regulated fluid environment that surrounds our cells, courses through our arteries and veins, bathes every muscle and nerve, organ and bone in our bodies. Kidneys do many things to maintain the equilibrium, or "homeostasis," of this fluid environment. They remove substances of varying molecular sizes from our blood, which our body produces as it makes and burns energy—by-products that become toxic if they accumulate. (The liver removes other chemicals directly after digestion, including alcohol and drugs, while the bowels, lungs and skin perform additional excretory functions.) While sieving these toxins from our bloodstream and voiding them as urine, the kidneys also conserve scores of essential blood components, preventing their loss during urination. And kidneys manufacture a number of hormones and vitamins that control bodily processes like red blood cell production, blood pressure regulation and bone building.

Kidneys even have a sense of smell. To sift hundreds of blood and urine chemicals on the fly, expelling some and husbanding others in precise quantities, kidneys employ odor receptors similar to those found in the nose. “The kidney is sniffing the urine and the blood plasma as they go by,” says Jennifer Pluznick, associate professor of physiology at the Johns Hopkins School of Medicine, who discovered the organ’s olfactory gifts. “The kidney’s attention to detail is astounding. I’m convinced it has many other long-held secrets which are waiting to be discovered.”

Even for people who spend their whole lives studying them, kidneys are mysterious.

❑

THE HEART tells with every beat how vital the kidneys are. Twenty percent of the blood of every pulsation goes straight to the kidneys, which receive four times more blood by weight than the liver, seven times more than the brain, and fourteen times more than the lungs. A healthy pair of kidneys cleans one liter of blood per minute, which means that every five minutes they purify the entire blood volume of a 150-pound adult. As blood traverses the kidneys, the components it holds in solution dance back and forth across various membranes and gradients, in an intricate quadrille of filtration and reabsorption that ultimately produces two separate streams: hyperclean blood and fragrant urine. The blood resumes its restless rounds throughout the body, while the urine travels down the ureter into the bladder, and out through the urethra into the open air.

Blood pumps from the heart to the kidneys down the renal arteries, and diffuses throughout a series of microscopic tubular structures called nephrons, the kidney’s functional unit; a healthy young kidney contains about a million nephrons. Each nephron is a filtration system consisting of a tuft of capillaries called the glomerulus, which drains into a long, convoluted tubule. The glomerulus performs “ultrafiltration”: high-pressure arterial blood straight from the heart hits the cell walls of the glomerulus, a multilayered membrane with pores about four nanometers across. Larger blood components like red and white cells and the bigger plasma proteins are held back by the glomerular wall, while smaller molecules of waste, and much of the water they're dissolved in, press through the pores into the nephron tubule beyond.

The liquid that collects on the far side of the glomerular wall, the "ultrafiltrate," is the first phase of urine production, and henceforth travels through the kidneys independently from the blood. But this liquid, which resembles blood plasma without its proteins, still contains many substances that our organism has always craved—salt, glucose, amino acids, electrolytes and water, always and forever water. The glomeruli produce about 180 liters of ultrafiltrate a day; if we simply pissed this liquid away, we would dehydrate and die in minutes. To avoid this, the tubule into which each glomerulus drains, with its hairpin curves, ascending loops and other convolutions, recaptures these life ingredients and returns them to the blood. Of the original 180 liters of ultrafiltrate that our kidneys produce daily, we actually void only 1.5 to 2 liters of carefully concentrated, miraculously sterile urine, redolent of phosphates, urea and other wastes. And occasionally, of asparagus.

Kidneys fail for many reasons. Time itself wears them out: between our twenties and our seventies, most of us lose half of our renal function, through a gradual atrophy of the nephrons. Some people are born with hereditary conditions and developmental malformations that accelerate the natural renal decline. Inflammatory and autoimmune diseases can also damage our nephrons, as can a sudden injury, a heart attack, or any other mishap that cuts blood flow to the kidneys. Signs of these ailments have been found in the kidneys of Egyptian mummies, and among notables of later times. Mozart seems to have died of kidney failure after a severe strep infection, Buffalo Bill Cody lost his kidneys after prolonged use of headache powders (a similar analgesic, Bex Powders, caused a rash of kidney disease in post–World War II Australia), and George Bernard Shaw expired from acute kidney injury after falling from a fruit tree he was pruning. More recently, Veronica Lake's kidneys packed up after an extended bout of cirrhosis, Dexter Gordon lost his kidneys to cancer, and chess prodigy Bobby Fischer died when a urinary tract blockage, for which he refused medicine or surgery, led to kidney failure.

In the past few decades, diabetes, obesity and hypertension have become health epidemics in the West, and are now the three main causes and accelerators of renal failure, because each condition damages or increases strain on the kidneys (in the United States, more than 60 percent of all patients newly diagnosed with renal failure also have diabetes). Certain medications also harm our nephrons, the worst offenders being nonsteroidal anti-inflammatory drugs like ibuprofen—the modern-day successor to Bex Powders—as well as some antibiotics, blood pressure medicines and chemotherapy drugs. Today, about 37 million adults in the United States are estimated to have some degree of renal disease, and nearly 800,000 have kidney failure. These numbers were still on the rise in 2020, when COVID-19 decimated the dialysis population. In 2020, for the first time since the US government began recording statistics on renal failure in 1973, the number of patients on dialysis dropped.

To confront the ancient curse of kidney failure, medical science devised dialysis. From the end of World War II through the 1960s, doctors in Europe and North America built a variety of instruments that could rid the patient's blood of some of the wastes and excess fluid that healthy kidneys naturally remove. Teams of doctors and brilliant loners, many of whom were gifted engineers and tinkerers as well as healers, cobbled together blood-purifying gadgets from sewing machine motors, ice-cream makers, aircraft parts and sausage casings, and invented novel ways to connect them to the circulatory system of their patients.

In so doing, they made medical history. For the first time, doctors had managed to substitute a machine for a vital organ, halting the progression of a hitherto fatal illness, and sometimes postponing death for decades. A new branch of medicine was born, "nephrology," from *nephrós*, Greek for "kidney." Progress in dialysis went hand in hand with the evolution of kidney transplantation, and of allied therapies to suppress the immune system so that the recipient's body would more readily accept the donor organ. In 1954, doctors at the Peter Bent Brigham Hospital in Boston, a teaching hospital for Harvard Medical School that is now part of Brigham and Women's Hospital, performed the first successful transplant of a major internal organ, removing a healthy kidney from Ronald Herrick and grafting it into his identical twin brother, Richard, a victim of incurable kidney disease. Lung, liver, pancreas and heart transplants soon followed.

This was a heroic age of medicine, which saw revolutionary surgical procedures and novel devices gain ground on a host of once fatal conditions. It was a period of intense intellectual excitement, as polymath doctors armed with new technologies joined battle with some of humankind's most intractable enemies, and seemed to be winning. It was an international age, where physicians in medical centers in Seattle and Boston, Toronto and Paris, but also in small town hospitals in Sweden and Holland, created hubs of advanced kidney expertise, to which other doctors traveled from around the world like pilgrims to a shrine, to return home after absorbing the new wisdom of nephrology, and become disciples in their own right.

In New York, Leonard Stern, who founded the dialysis program at Columbia University, remembers his medical school training and residency in the early 1970s, in a fledgling specialization that had just received a name. "I took to nephrology immediately, because it fed into my need to know how things worked. It was the only specialization at that point where you could examine the metabolic condition of the patient, identify a disorder, and intervene in the hope of correcting it. If you went into gastroenterology back then, you had no idea how anything worked in the GI tract—it just happened. Or in dermatology, you had a thousand different conditions, yet no idea of the mechanism or the cause behind any of them. Whereas in nephrology, you could actually decide, 'Well now, this is what most likely happened. So the patient feels this, and then we can dissect how they got there.' For me, nephrology became a way of thinking about the world, and about the whole patient—not just the kidney."

In the same years, on the far side of the world in Melbourne, John Agar, who was awarded the Order of Australia in 2009 for services to renal medicine, remembers how he and his peers saw nephrology as "a field of infinite promise." After completing his nephrology training in Melbourne and spending an additional year at the University of Massachusetts Medical Center, Agar founded a dialysis unit at Geelong, southwest of Melbourne, whose methods and guiding philosophy helped to shape the practice of nephrology throughout Australia and New Zealand. He also spent a pivotal period of work at the University of Toronto, where he learned the latest techniques being used in home nocturnal dialysis, a groundbreaking treatment method.

"When I began my nephrology training in 1972, it was a thrilling field in rapid growth," says Agar. "This seemed like the future of medicine. We were streets ahead of gastroenterology and cardiology. We were the only specialty that could replace a vital organ. Not only could we replace it artificially, but we could replace it with a new, transplanted organ. I was racing around Melbourne with an Esky cooler that contained donor kidneys! We were also on the cusp, or so we thought, of xenotransplantation: we were going to be able to transplant pig organs, monkey organs, even to breed special animals that would provide us with an infinite number and array of transplant kidneys, without need for a human donor at all. And dialysis was about empowering the patients: not only saving their lives, but giving them the skills to take charge of their own care. When I started nephrology, all this was happening."

Since 1972, across the world, the original promise of dialysis has faded. The new technology used to treat individuals with kidney failure, which exhilarated young doctors like Leonard Stern and John Agar in the 1970s, has not evolved significantly in half a century. "What was infinite promise, is now infinite disappointment," says John Agar today. But if dialysis is stagnating worldwide, it is in crisis in the United States, where the incidence of infection, heart problems and other dialysis disasters is high, and patients are condemned to a grim round of treatments that are not only painful and debilitating but often medically harmful. "The survival rate in the United States, where around 22 percent of patients die every year, is the lowest in the industrialized world," says Leonard Stern. "The mortality in Japan is only 5 to 6 percent per year, and in Western Europe it's in the range of 9 to 12 percent per year. So what is the difference? Well, for a start, most dialyzing in the United States is done for profit, and the for-profit survival is always less than the not-for-profit."

After watching for decades the rise of for-profit dialysis in America and the steady degradation of care, many experienced nephrologists like John Agar and Leonard Stern have seen enough. "For many years now, I've been telling my American colleagues, 'You have to stop killing your patients,' " Agar says.

· 3 ·

Dialysis in America

In a business park near the intersection of Interstate 175 and State Highway 34, tucked in among McDonald's, Whataburger, Dickey's Barbecue Pit, the Euphoria Nail Spa and the enormous stadium of the local high school football team, the Kaufman Lions, is a clinic run by Fresenius, the North American subsidiary of a Fortune Global 500 multinational that, together with another firm, DaVita, dominates dialysis in the United States. Kaufman is thirty miles east of Dallas. The town's only historic landmark is the Kaufman County Poor Farm, a sprawling ranch founded in 1883 to house and feed the area's needy, after the Texas legislature decreed that each county was responsible to care for its indigent. The Kaufman County Poor Farm closed and turned away its last residents in the 1970s. Now the homeless sleep beneath the overpasses of I-175 and Highway 34.

David Kaufman, the town's nineteenth-century eponym, made his reputation killing Native Americans, and the community seems unapologetic about its past. The towering Civil War memorial at the county courthouse, topped by a musket-toting Rebel who sports the same wide-brimmed Stetson as the Kaufman police, salutes the Confederate soldiers who "Fought for Their Constitution, Homes and Firesides," and wishes them "Honor to Their Memory, Glory to Their

Cause." "The racism here is unquestioning, instinctive," says Carrie Brito, a resident of nearby Eustace, Texas, who inherited the high cheekbones, almond eyes and golden-brown skin of her Latino father. "A lot of people seem to think hating people for their race is very American, the most natural thing in the world."

Walking south from the courthouse toward the clinic, turreted Victorian mansions with ample porches and hybrids parked in circular driveways dwindle to wood-frame dwellings dwarfed by the long-bed pickups standing out front. As you approach I-175, the shade trees disappear; above the concrete arc of the interstate, a big Texas sky unfurls, an ever-evolving play of clouds and fierce sunlight over flat, dead modernity. Beyond the highway, the last traces of community melt away into strip malls and office parks and raw lots overgrown with dallis grass and bittercress. In this place, in a Fresenius unit, Carrie Brito dialyzes. "I have to psych myself up before every treatment, just to be able to walk through that door," she says.

Brito is reclining on a pale-gray chaise longue in the clinic, beside a tall medical device with a touch screen and multiple buttons and dials. Two tubes run from the machine to a port, or "fistula," in her left arm, a balloon-like bulge beneath the skin near her inner elbow, which was created when a vascular surgeon joined her cephalic vein and her radial artery. The fistula is the spot where two 15-gauge needles go in. Brito's blood leaves her body through one needle, passes through the machine, which filters out contaminants and excess fluids, and returns to her, cleansed, via the other needle. In the space of about three hours, her entire blood volume will exit and reenter her body twenty times. Her kidneys once performed this purification and fluid removal continuously and effortlessly. But they began to fail eighteen months earlier, in June 2015, due to glomerulonephritis, an inflammatory condition that impairs the kidneys' tiny filters, the glomeruli. Without regular dialysis treatments, a nephrologist told Brito, she would die within days.

But dialysis itself, at least as administered to Carrie Brito in this Fresenius clinic in Kaufman, Texas, may be threatening her life. The treatments are likely too short and fast—too brief in duration, at too high an ultrafiltration rate (UFR)—to be healthy, particularly for people of small stature like Brito, who weighs 120 pounds. Decades of medical research has demonstrated that, when administered this way, dialysis may shorten patients' lives by stripping off bodily fluids too fast, triggering sudden drops in blood pressure that can damage the heart, brain, gut, and lungs; and lead to stroke, congestive heart failure and cardiac arrest. "The first ten minutes, when the machine's pulling your blood out of your body, you feel like you're fading," says Brito with her north Texas twang. "Like part of you is gone."

High-speed dialysis can also exacerbate the side effects of the treatment itself—vomiting, fainting, leg cramps, headaches and a state of fatigue and disorientation often called "dialysis fog." All of which makes each session a physical and psychological ordeal for Carrie Brito, and taints her entire existence. "When I come off dialysis, I sometimes have to sit in the clinic for an hour or so to recover. I go home, and usually go straight to bed. By the middle of the next day I begin to feel better. But that evening I have to start getting ready for the next dialysis session the following morning."

In clinics where dialysis is slower and gentler—in high-quality, nonprofit centers in the United States, for example, and in many parts of Europe—patients live better and survive longer. The symptoms of the treatment are less burdensome, so their frequent trips to the dialysis clinic are less exhausting and frightening. For good medical reasons, in fact, nephrologists in other developed countries typically avoid the kind of treatment that Carrie Brito receives, and that her peers endure in clinics throughout America. Many condemn it as dangerous. Fresenius knows this. In a 2011 memo to clinicians, the company recommended "a minimum dialysis treatment time of 4 hours, while aiming for UFR at ≤ 10 ml/kg/hr." Nevertheless, both Fresenius and DaVita routinely provide shorter and higher-speed dialysis, which enables them to process more patients per day.

But Brito faces more immediate concerns. Shortly after her latest dialysis session begins, her blood pressure spikes to dangerous levels. Terrified that she's about to stroke out, she has a violent panic attack. Sobbing and stammering, she begs the clinic staff for help. Despite the acute medical danger she feels she is in, however, they don't take her off the machine. Nor do they call 9-1-1, or alert Brito's husband and care partner, William Sarsfield, to her condition.

Instead, she says a nurse hovering nearby tries to quiet her. Brito's weeping, the nurse says, is disturbing the other patients in the unit.

"These assholes are trying to kill me," Brito thinks to herself.

Brito is a forensic accountant and corporate controller. She has examined documents in bank fraud investigations, while working as a contractor for federal banking authorities. Despite the double debilitation of her kidney failure and the dialysis she is undergoing, for weeks now she has made secret recordings and videos with her cell phone, documenting what she and other patients consider malpractice and poor care. She has examined her medical charts and other records prepared by the clinic staff, and seen what looks to her experienced eye like forgery. Even now, as her blood pressure grows critical, she's filming her facility—filming what may be the last moments of her life.

Carrie Brito believes her ordeal started months earlier, when she noticed sanitation hazards in her unit: open vials of medicine abandoned on a counter, a crust of blood on her dialysis chair. In a workplace where long needles are threaded into large blood vessels, infections can kill. Then, Brito says, she saw a document with false statements concerning one of her prescription drugs, apparently made in order to turn a higher profit from her care; though she'd never seen the document before, it bore her signature in two places. In her opinion, it had been "robosigned."

When she asked the staff and managers of her clinic about these problems, she says they turned on her, and began to punish her for speaking out. She claims that dialysis technicians began jamming the dialysis needles roughly into her fistula, and shouting at her to be silent when she cried out in pain. A tech cannulated her improperly and then turned on the machine at high blood-pump speed, causing internal bleeding that swelled her arm to twice its normal size and damaged her fistula—her lifeline. After one treatment, she says, the staff removed the needles and left her to bleed for a quarter hour, in full view of the other patients. They also barred her husband, William, who provided essential physical and psychological support, from entering the facility, claiming he'd made racial slurs and threatened to go out to his pickup and fetch a gun. Brito says an armed security guard began to shadow her movements in the clinic, as if to signal to everyone present that she was dangerous. Clinic staff told her friends, both patients and workers, to avoid her.

Brito claims that soon after, a team of managers demanded that she sign a behavioral contract, a formal pledge to avoid disruptive or threatening behavior and to comply with staff instructions . . . all of which she felt she was already doing. Brito sensed by now that something had gone terribly wrong with her care, and that worse was to come. "I am signing under duress," she wrote in emphatic capitals across the bottom of the document. "I, Carrie Lynn Brito, request a forensic autopsy in the event of my death."

Not long after, in a letter signed by the clinic's manager, its medical director and the firm's regional vice president, Fresenius informed Brito that her care was being terminated, because of her "continued disruptive behavior of the clinic [*sic*] & verbal aggression towards multiple staff." Though Brito, like other renal failure patients, required about three dialysis sessions every week to live, the letter stated that, within thirty days, she would be denied treatment at her facility. "You may want to contact your nephrologist to discuss options for continued dialysis," the letter concluded. Trouble was, her nephrologist did not push back against her termination.

As she read the letter, Brito remembers, "I felt like I was on death row, and was reading the date of my execution. Which is probably why I had a panic attack during my next dialysis session."

Fortunately, in a situation where many distraught, exhausted patients merely succumb, Brito's forensic skills remained keen. She wrote memoranda to document the abuse she felt she was suffering and, after examining her medical records, identified instances where she believed false statements had been inserted by staff after the fact, to incriminate her as disruptive and threatening. Also, Brito had allies. Her husband, William Sarsfield, was well aware of the problems at the clinic, and the campaign of retaliation against her. When her blood pressure started to rise during her next dialysis treatment, Brito surreptitiously texted Sarsfield, who was sitting in his pickup outside the clinic. Sarsfield dialed the telephone number of an organization that he and Brito had discovered on the web, a small group of former dialysis workers, lawyers, and other professionals who volunteer their time to help dialysis patients in harm's way.

A woman answered, a small dog yapping in the background. Her melodious contralto filled the cab of Sarsfield's truck. "Dialysis Advocates," she said, "this is Arlene."

❑

SARSFIELD HAD reached Arlene Mullin in her trailer park home in Albany, Georgia, where she lives with a three-legged rescue Jack Russell terrier, Jumper, for company, and a cell phone pressed perpetually to one ear. When she turns on the phone in the morning the calls start rolling in, from patients in danger and from their anguished kin, and from dialysis workers who are outraged by the practices they see on the job but feel powerless to halt. Calls arrive in waves throughout the day, and are still coming in after dinner when she finally clicks off to get some sleep.

Mullin instructed Sarsfield to alert paramedics and the police, in order to extract Carrie Brito from the clinic before her surging blood pressure could cause long-term harm. Mullin then called the clinic's managers, and demanded that they safeguard Brito's health. Next, she contacted a healthcare attorney in New York who occasionally helps her pro bono. The lawyer spoke with clinic managers and state healthcare officials, as well as with Brito herself.

This routine repeats itself hundreds of times every year. Mullin receives an urgent call, speaks long enough to grasp the situation and attempt to stabilize the patient, then fires a volley of calls to clinics, nephrologists, attorneys and would-be regulators, while the patient's life clock ticks down, the need for dialysis intensifying by the hour. Mullin is, to my knowledge, the only full-time private dialysis advocate in America. She is doing the job that many government officials and contractors responsible for the safety of dialysis patients appear unable, or unwilling, to perform. She takes no money from patients, and lives on her meager Social Security checks. "Just look at this circus!" she says, waving at the file folders stacked throughout her office in the trailer home, each file a patient in apparent danger, an ongoing and potentially preventable tragedy. "Luckily Jumper, my little three-legged wonder child, is an ace at clerical work."

Mullin's emergency measures may have saved Carrie Brito's life. Paramedics entered Brito's clinic, detached her from the dialyzer, and rushed her to the local hospital, where her blood pressure was brought under control. She still had to dialyze, however, and the clinic terminated her care a short time later. The only other dialysis facility in town, run by DaVita, declined to treat her—not for medical reasons, the facility's staff explained, but on advice of their legal counsel. Evidently her recent involuntary discharge, together with accusations of disruptiveness and aggression contained in her medical records, raised red flags when other dialysis units considered admitting her. This created a serious problem for Brito, because like other dialysis patients, she required several treatments each week, and needed a clinic near her home. The two Kaufman units were the only facilities within reasonable driving distance from where she lived in Eustace.

From then on, Brito was forced to dialyze in the emergency room of a local hospital. Here the staff, per ER protocols, only put her on dialysis when her condition became an emergency—in other words, when her blood became so toxic and fluid-filled that her life was in danger. Sporadic dialysis of this sort is dangerous, even deadly. According to Robert Bear, a veteran Canadian nephrologist and former board member of Mullin's organization, Dialysis Advocates, who has reviewed numerous records of involuntary discharges, "For many patients, dialysis in an emergency room is a death sentence of six to twelve months."

Carrie Brito was stranded in a medical limbo. But then a surprising thing happened. She waited for the familiar symptoms: the shortness of breath, chest pains and swelling of her ankles that warned her she needed to dialyze. Days passed, and the symptoms didn't come. She was still making urine, because she'd maintained some residual kidney function throughout her dialysis. After a couple weeks, she saw a specialist at Baylor Medical School in Dallas, who informed her that, while her kidneys were far from perfect, for the moment at least they were working well enough that she didn't need dialysis at all.

At first this seemed a miracle. But the longer Brito thought about it, the more she wondered: *Did I actually need to dialyze in the first place?*

Arlene Mullin is a slender, striking woman of seventy-three, whose calm gray-green eyes and aura of knowing serenity contrast strangely with her rapid-fire rush of words, and the deep, fruity chuckle she can summon even while describing the worst abuses. She writes long, stinging emails and faxes at high speed with spell-check off, spewing typos and malapropisms that hoodwink her adversaries, the dialysis executives and regulators she deals with daily, as she tries to place involuntarily discharged patients in a new clinic. "A lot of them must think I have a fourth-grade education," she says with a low hoot. "One guy called me 'an orangutan in a bamboo forest.' When they underestimate my intellect, they let down their guard. That's when the fun begins! I start learning their secrets."

Mullin's office is one of the four rooms in her trailer home, which belongs to a friend. Out the window, an abandoned car rusts into the crabgrass beside the neighboring trailer home. Over the years, Mullin has met a handful of professionals who have become aware of the darkness in the dialysis industry, and now help her to dispel it. The spouses of several patients rescued by Mullin have driven to southern Georgia and bunked in her trailer for weeks at a time to assist with paperwork. By phone, dialysis technicians, nurses, and nephrologists whom she has never met, most of whom work at large dialysis firms and prefer to remain anonymous, alert her from behind the scenes about abuses, and advise her on how to combat them. Pat Reilly, a private detective in Nashville, Tennessee, has gone undercover in several dialysis clinics to chronicle the questionable treatment of Mullin's clients. Social activists have answered Mullin's call to action against endemic patient harm in dialysis: Chili Most, a recording artist, music producer, radio personality and civil rights leader in Los Angeles; Reverend Ronald Wright, the minister of a nondenominational, largely African American church in Dallas, Texas; former NBA center Clem Johnson, whose daughter was on dialysis before receiving a transplant; and dialysis whistleblowers and whistleblower advocates David Barbetta and Marcel Reid.

Mullin's patient files fill her desk and filing cabinets, and lie in tidy rows across the floor. We sit down among them, and Mullin passes me file after file, each detailing claims of abuse, endangerment or termination of a patient. Some of the accusations used to eject people from their facilities would be amusing if the outcomes weren't so lethal. James Kasiewicz was involuntarily discharged by his Fresenius clinic in Willowbrook, Illinois. The discharge letter claimed that Kasiewicz had threatened to bring a rifle to the facility, to harm staff members, and to run down the clinic manager with a car. In written statements and in communications with Arlene Mullin, Kasiewicz denied these accusations, and said he believed they had been made in response to complaints he had lodged with the Illinois Department of Public Health and with the ESRD Network, a dialysis industry regulator, in which Kasiewicz challenged the air quality in another Fresenius facility, where he previously dialyzed. In an anguished written statement, Kasiewicz denied menacing clinic employees, much less threatening to run them over: he hadn't driven in over a decade, he explained, since losing both legs below the knee to diabetes. Mullin remembered how nearby Fresenius clinics, and one DaVita unit, declined to treat Kasiewicz; one facility justified its refusal by citing reports in Kasiewicz's medical file that he had "behavioral problems" and was "disruptive and uncooperative." Kasiewicz died nine months after his termination.

Justin Charles Evans, a patient in Atlanta, was repeatedly informed by the staff of his clinic, often at the last minute, that the clinic was unable to treat him (the staff referred him instead to a local emergency room for dialysis). Evans and eleven other patients wrote a letter to Johnny Isakson, then US senator from Georgia, reporting this dangerous interruption in their care and asking Isakson to intervene. When clinic employees learned of this letter, Evans says they discharged him and harassed several of his co-signatories in reprisal. Evans also claims he was accused of carrying a gun in the duffel bag he brought when he dialyzed; whereupon the clinic manager called the local police, who escorted him off the premises. (A registered nurse at the facility later told me that she'd been ordered by the clinic manager to add the gun accusation to his medical file.)

Many such complaints reach Mullin from dialysis workers, who feel complicit in the harm done to their own patients. Mullin hands me a letter to Esperanza, a patient in a dialysis facility in Queens, New York, who was terminated after being accused of striking other patients and jerking the dialysis needles out of her arm, while her husband, Juan, was said to have threatened staff members with a knife and a gun. (I use assumed names for everyone involved in this incident, to shield Esperanza and Juan, as well as the clinic employee, whom I'll call Alice, from retaliation.) The letter, written by Alice, admits that the charges made against her patient Esperanza were false, and that she included them in Esperanza's medical records at the direction of a "Dr. O," a clinic nephrologist, who turned against Esperanza after she reported staff misconduct to New York State health officials. (I reproduce the note as Alice wrote it, with errors of spelling and grammar.)

> *I am writing you this letter to let you know about the truth what exactly Doctor O tell me what to do with you. He tell me to put in the false report on the wrap [i.e. "rap"] sheet. . . . He said to me that I have to stick up for the staff other wise that will cause me my job. . . . Please don't be mad at me. I have to do that just to cover myself up because I have a family to feed. I hope that you cold forgive me for what I did to you. I bring you some Christmas gift plus this letter and please don't tell nobody that I am at your door.*

Some nephrologists recognize this pattern, though few are willing to speak openly about it. Joanne Bargman, a research nephrologist at the University of Toronto, Canada, describes her conversation with a "very highly respected nephrologist" in the United States, whom she prefers not to name, who explained to her matter-of-factly his techniques for goading undesirable patients into acting out, in order to eject them from his facility. Another veteran nephrologist at a university medical center in the northeastern United States, Dr. Jesse Goldman, reports witnessing the termination of multiple patients at his facility, run by Fresenius, after they had argued with staff. "Once they want to terminate a patient they are skilled at having multiple employees document a one-sided story," Goldman wrote in an email. "The story is always exaggerated. Not only is the documentation used as 'evidence' for the ejection but it also makes more difficult to place patients in the future since the extreme narrative scares away future units from taking a chance."

In most cases I have examined, patients who were involuntarily discharged were on Medicare or Medicaid. Because private insurance companies pay higher reimbursements than does government insurance—sometimes ten times higher or more—privately insured patients are far more lucrative for dialysis providers than are patients with government insurance. Dialysis firms make no secret about the importance of private payors to their business model, and clinic staff members are routinely instructed to treat them as VIPs. Publicly insured patients, because they are lower-margin, are by contrast often considered second-class citizens. Those who question the quality of their care, require more time because of handicaps or additional illnesses, or otherwise slow the routine of the clinic, may become expendable. (DaVita disagrees: "We welcome feedback to continually deliver the best care experience possible and strive to be a place of belonging for everyone in our center.")

Involuntary discharge is not driven exclusively by financial considerations, however. Though a rarity, privately insured patients who challenge the expertise or integrity of their clinic managers may also be terminated. "The biggest mistake we ever made was asking questions," says Sherry Thompson, a 9-1-1 dispatcher and Air Force veteran in Memphis, Tennessee, whose husband, Gerald, began dialyzing in 2017. "My husband had been a utility worker for twenty-six years, and had great insurance. Cigna was paying $20,000 to $30,000 a month for his dialysis. But when I started questioning their billing practices, the care started to decline. I couldn't even get people on the phone." Soon, during his regular visits to the dialysis unit, Gerald Thompson was shadowed by a security guard. Clinic officials referred him for a psychiatric evaluation, and sent a medical assistant to his home on a surprise visit, during which, the assistant claimed, Thompson brandished a handgun. (Gerald Thompson confirms that he owns a handgun, but denies brandishing it. "Why would I do that? I needed their help!")

"All of this was part of building a case against us," Sherry Thompson says. The unit discharged Gerald shortly after.

"According to a culture that exists too commonly in the dialysis industry in America, patients are supposed to be dependent souls, passive recipients of treatment," says Robert Bear, the Canadian nephrologist, who obtained medical training in the United States and has done nephrology consulting there. "In some instances, when patients question the quality of their care, they are 'involuntarily discharged' from their dialysis unit, often without alternative dialysis arrangements being made." Leonard Stern, the New York nephrologist, formerly worked at a DaVita-run facility, where, he notes, certain managers "were exceptionally rigid and authoritarian—like prison camp guards. If a patient broke any even minor rules of behavior, they were demeaned, ostracized, and potentially thrown out."

Even patients who aren't discharged suffer from the business model of Big Dialysis, where the relentless pursuit of profits often compromises care. To increase earnings, some clinic managers feel pressure to cut corners on supplies, hygiene and water purification, which potentially leads to a higher incidence of infections and accidents. They may reduce payroll expenses, too, by replacing skilled staff with inexperienced dialysis technicians, an occupation that doesn't exist per se in most other countries, where highly trained dialysis nurses treat patients and perform the all-important "stick." Patients are often organized into strict shifts with minimal transition time between, and little scope for tailoring treatments to suit individual patient requirements.

This approach to dialysis contradicts decades of settled medical science. Most leading nephrologists worldwide agree that dialysis should ideally be delivered in long, frequent sessions at low ultrafiltration rates, and be carefully tailored to each patient's physiology. Large dialysis companies, by contrast, frequently employ what John Agar, the Australian nephrologist, calls "bazooka dialysis": treatment in brief, high-speed bursts following a one-size-fits-all protocol. Nephrologists who order longer treatments or make other customizations of their patients' dialysis prescriptions may encounter obstruction by clinic management.

Many dialysis workers are themselves victims of this regimented approach to medicine. Nurses, dialysis technicians and other staff are required to care for numerous patients simultaneously, and are pressured by managers to get shifts of patients on and off the machines as quickly as possible. "If you're working for patients, you have to protect them," says Megallan Handford, a former Los Angeles policeman who retrained as a dialysis nurse, and has worked for both Fresenius and DaVita. "Like we used to say in the police, I feel I'm here 'To protect and serve.' But right now, given how the industry operates, I'm not able to do either." Handford, who has since moved to Texas, says that his life on the "blood floor" in Los Angeles clinics was psychologically more draining than when he was a police officer, facing down drug gangs in the worst Los Angeles housing projects. "After I'd been involved in a shooting, I'd at least get the rest of the day off to recover, and maybe receive some counseling. In dialysis, even if two of your patients drop dead on the floor, you're supposed to keep grinding, keep working, keep putting them on and taking them off those machines. All the companies are concerned to do is dialyze."

The term "moral injury" was coined to describe the enduring psychological wounds of combat soldiers who, following the orders of their superiors, had taken part in extreme acts (such as the killing of civilians) that violated their basic moral principles. It has more recently been applied to doctors, nurses and other healthcare workers, who sense that their daily responsibilities on the job violate their commitment to healing. Many dialysis workers I've spoken with seem to suffer from this condition at some level.

Megallan Handford, who in California units says he was assigned as many as seventeen patients to watch over simultaneously while they dialyzed, describes the regular crises he faced—patients cramping, fainting, coding and bleeding out—which make his workplace sound more like a wartime field hospital than a chronic-care facility.

Handford evokes the atmosphere in such clinics: "I have to move fast from one patient to another. No time to ask them how they feel, how their family is, just 'Okay, you're still breathing,' and move on. My job is nursing people, but I can't do my job on this assembly line." More than once, he says, he and his coworkers had to leave the lifeless body of a patient in the dialysis chair, concealed behind a screen, while continuing to treat other patients.

Grim, exhausting work conditions and low pay lead to poor morale, shortened tempers and case-hardening among workers, which increases the likelihood of conflict with patients. "Dialysis workers are stretched so thin, they have to deal with so much pressure and suffering, with the death of patients with whom they often become very close," says Cass Gualvez, organizing director at SEIU-UHW, the largest healthcare workers' union in California. "Some people just have to go into survival mode." Others call the SEIU-UHW or Arlene Mullin, and reveal what they've seen.

Mullin says that trumped up accusations frequently precede involuntary discharges, providing the requisite paper trail to justify terminating patients, who are then routinely blackballed by other facilities. She hands me file after file documenting cases of patient denigration, mistreatment, involuntary discharge and blackballing, each following a similar script: Carrie Brito, Justin Charles Evans, Vanessa Winters, Gerald Thompson, Cornelius Robbins, Gregg Hansen, Pacita Coats-Simpson, Antonia Watson, James Stravino, Abelinda Ruiz, William Brown, Eric Pickens, Terry Thermutis Lee, Trina O'Cain, Tirsit Gidey, Louis Thomas, Kenneth Harris, Jose Carlos and many others. Nearly all of whom are Black and brown. Some are still struggling to secure good dialysis care, often in a hospital ER. A few have received transplants. The rest are dead.

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"For me it's not about the patients, it's about the teammates [i.e., employees]," says Kent Thiry, the charismatic longtime leader of DaVita, one of the two firms that dominate the US dialysis market,