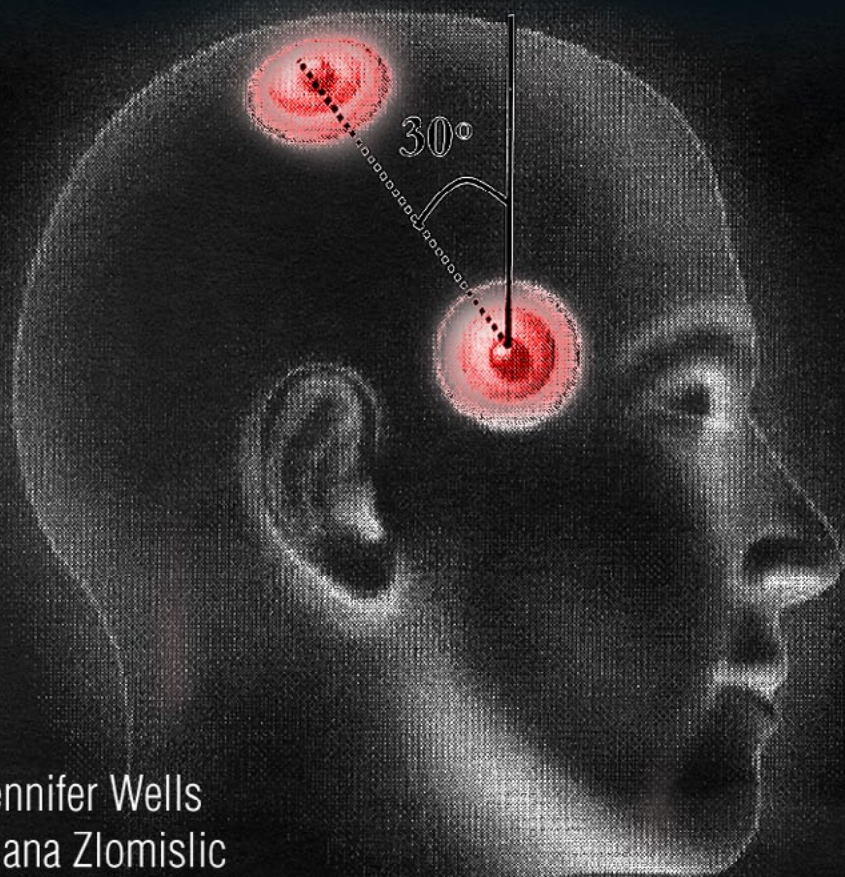


Star <dispatches

# Shock

An investigation into the  
startling comeback of  
electroconvulsive therapy



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# 1 Anhedonia

On the November morning of Matt Damphouse's 15th electroshock treatment, he followed the same ritual as the week before, and the week before that, and the week before that.

He exited the sweet two-bedroom bungalow he shared with his Shih Tzu, a 12-year-old rescue named Mindy, travelled to Windsor Regional Hospital and presented himself to clinical staff.



*Matt Damphouse* (Brent Foster for the Toronto Star)

Among the tasks Matt then attended to was the folding of a piece of paper. He was also asked to spell “world” backwards. This Matt could do.

What Matt could not do in his own world, in his sweet two-bedroom bungalow with the half-painted green/yellow porch, was

rouse the energy to clean the peanut butter off a knife, to put the plate in the kitchen sink.

What Matt needed to do was shake down, or at least stir, the deeply rooted dysphoria that had come to shape his increasingly dysfunctional life. Anhedonia, the docs call it. The inability to experience pleasure. It is a word that floats through the environment at Windsor Regional, in the ether.

On that November morning, Matt, a handsome, smooth-skinned slab of a man, changed into a surgical gown, settled his six-foot, 250-pound frame onto a gurney, and was rolled into a pristine treatment room where two electrodes were affixed to his forehead. An electrical current, delivered in the form of a series of pulses each lasting approximately three-tenths of a thousandth of a second, passed between those two electrodes, the electrons skating across the connective tissue between skin and skull, seeking pathways through both hemispheres of Matt's brain. The penetrating electrons then fired, or excited, intracerebral neurons, which in turn triggered Matt's 15th convulsion — Matt was, quite simply, shocked into seizure.

Post-treatment, Matt was again asked to fold a piece of paper. And to spell "world" backwards. This he could do. A mini-mental status examination. Concentration. Attention. Recall.

Ninety minutes later, Matt — dressed, composed, still as pond water — sat alongside his mother in the antiseptically chill meeting room adjacent to what administrators call the electroshock "suite." They don't use the word "electroshock" any more — "electroconvulsive" is the preferred nomenclature. "Mental illness" is a discouraged term. "Brain illness" is the language of the day.

There is a weight to Matt's speech, a heaviness. Matt calls it his post-treatment fog. He recounts what brought him to this place, to this point of last resort. "I had a hundred reasons to end my life, but no reasons, really, to continue," he says flatly, tonelessly.

In the days ahead, Matt will continue to tell his story. In this moment, he says, the black dogs have been beaten back. The bad thoughts, the bad thing — deflated, poof. “There’s no life in them anymore.”

And so Matt becomes an advocate, a poster boy for shock treatment, a therapy stigmatized as an unreservedly damaging, brute-force electrical assault on the brain — a cognitive cluster bomb that to this day, more than 70 years after its discovery, eludes any scientific explanation as to the precise effect of those firing neurons.

The lay person may read all this and respond: “They still do that?”

Yes, and in significant numbers. Based on a survey of the 175 Canadian centres that identify ECT as part of their practice, researchers estimate that 75,000 ECT treatments are delivered in Canada annually.

In Ontario, data released by the Ministry of Health show an acute rise in electroconvulsive therapy. In the fiscal year 2010-2011, the most recent year for which statistics are available, a total of 16,259 ECT treatments were delivered, an in-patient-outpatient tally. That’s more than a 350-per-cent increase in seven years. A breakdown by age and gender reveals startling subsets, especially a 1,300-per-cent treatment increase for patients in the 55-59 age cohort. Treatments for women versus men run two to one, a pattern that has been historically true and one that has been conventionally attributed to a higher rate of depression among women.

The numbers seem almost incomprehensibly high, even given the championing of ECT by members of the psychiatric community who cite the vast numbers of patients who remain pharmaceutically unreachable with antidepressants. The health ministry can offer no insights into what might account for the data explosion. What is known is that almost three decades after a provincial

inquiry into the practice of ECT in Ontario, there are no training standards, no agreed-upon protocols, no consistent measurements of care, no auditing mechanisms to monitor outcomes. Thirty years after the government was goaded into examining what was then and is still the most controversial treatment in the history of psychiatry, the province has no clinical practice guidelines.

To the general public, ECT is a historic artifact, a throwback to the postwar era, or possibly the Seventies, but back there somewhere. Truth is, it never went away and is today experiencing something of a cultural renaissance. There's a recent New Yorker schoolroom cartoon ("We've found by applying just the tiniest bit of an electric shock, test scores have soared," says the teacher to a set of button-eyed parents). There's the threat of ECT levelled against sadly orphaned and besotted Sam Shakusky in Wes Anderson's *Moonrise Kingdom* (Sam having failed to comply with the behavioural expectations of Ms. Social Services). And perhaps most notably there's the gripping, season-ending moment of the ingenious television series *Homeland*, in which CIA operative Carrie Mathison (Claire Danes) checks herself in for electroshock in the hopes of leashing the hounds of the bipolar disorder that has left her wild-eyed and unhinged (and stratospherically creative). "It's not *Cuckoo's Nest*," Carrie admonishes her horrified mentor and ex-boss, Saul, before she's fixed with a set of electrodes and a rubber bite block. *Homeland* aficionados were left on the edge of their seats: would Carrie — anesthetized, legs twitching — emerge from her electricity-induced seizure with the ability to remember a crucial, plot-twisting piece of evidence?

As a narrative device, ECT is inarguably riveting. Perhaps, then, it should not come as a surprise to learn that the vast majority of the general public draws its knowledge and opinions of shock therapy from movies and TV. It may come as a surprise to learn that the same goes for medical students. This is not an in-

cidental consideration. ECT proponents have been fighting the public imagination for decades, ever since Hollywood exquisitely captured that seminal scene in *One Flew Over the Cuckoo's Nest* in which an electrode-sporting Jack Nicholson as the single-minded, anti-establishment Randle McMurphy clamps down on a piece of rubber hose as he's fried, awake, like a strip of bacon on a hot griddle.

—

Anne approaches the leaf slick of a city park on a wet Sunday in the company of her husband, Rob, and the couple's chocolate Labrador. Rob hucks an orange rubber ball into the far distance, causing the Lab to take off like spit under a bower of soon-it-will-be-winter oak trees.

Anne appears wary, as if seeking shelter between hunched shoulders. She has a military cap pulled down on her head, with the tiniest little pigtails sticking out the back.

Anne and Rob are not their real names. Anne is worried about the stigma attached to ECT. She does not want to be seen that way, as if disabled, as if desperate. She is 36 and eager to re-enter the work force.

Nine years ago, Anne's life began to unravel. She hadn't yet met Rob, had survived a traumatic crisis involving her then boyfriend, and in the aftermath found herself unmoored.

Off the rails, Anne was prescribed what became a pharmacopoeia of antidepressant medications, the first of which sent her into manic flight. And that, she says, "is when I left shore and never knew the land I came from, so to speak."

There were pills upon pills. "Pills to wake up, pills to go to sleep, pills to level you, pills to stop shaking . . . pills for pills." When Anne met Rob she was taking the antidepressant Wellbutrin and was, she says, on an upswing. "I joined a running team. I started

volunteering. I started looking for a job. I was very productive.”

In a separate interview in the Star’s offices, the Toronto couple relived the days and years that followed. At one point, Anne turned to her husband with a searching look and asked: “Who did you fall in love with?”

From the outset of their relationship, Rob understood that Anne was taking a plethora of meds. But, and this is a big but: “She was running, she was active, we did a lot of things.” Turning to face his wife he explains through his personal prism what those days were like: “It ebbed and flowed, your ability to function. It was a roller-coaster. There were days when you were sheer brilliance. There were days when you were having a really hard time with it... This wonderful woman was there. She was there. But there were times when you’d go away.”

The depressed go away. They do. And their pain is without measure.

In “The Depressed Person,” a story published in Harper’s magazine in 1998, the revered American writer David Foster Wallace fused his talents to this most intimate subject matter. “The depressed person was in terrible and unceasing emotional pain,” Wallace wrote in the beginning of the piece, “and the impossibility of sharing or articulating this pain was itself a component of the pain and a contributing factor in its essential horror.”

The essential horror of depression affects, according to the U.S. National Institute of Mental Health, approximately 10 per cent of men and up to 25 per cent of women at least once in a lifetime. Depression accounts for 70 per cent of psychiatric hospitalizations, and we now know that almost a third of sufferers fail to find their way to remission through medication.

Wallace himself was treated for depression and anxiety over very nearly the full course of his adult life. In his mid-20s, he underwent a six-course ECT treatment. Author D. T. Max’s recently



released biography of Wallace, *Every Love Story Is a Ghost Story*, documents the writer's fractured memory post-treatment — he emerged, Max writes, “as delicate as a child.” Max quotes Wallace's mother, Sally: “He would ask, ‘How do you make small talk?’ ‘How can you know which frying pan to pick out of the cupboard?’”

In an interview, Max reads from a copy of a medical testament Wallace wrote to one of his doctors in which he recounts his ECT experience. “Early October,” it states. “Attempted suicide with Restoril. Hospitalized thereafter. Received course ECT at Mercy Hospital in Champaign, which seemed to break the depression.”

“That's his phrase,” Max continues. “Break the depression . . . That's as much as he gives us.” The treatments appeared to work as a stabilizing bridge to antidepressants. “I don't think it's going too far to say people pretty much think it saved his life,” Max says.

Twenty years later, Wallace again looked into the abyss. In the summer of 2008, he again attempted suicide and again committed to a course of ECT, this time in California. “For whatever mysterious reason, whether it was the art of how it was administered or the severity of the depression or whatever, it didn't work twice,” says Max. “I looked into ECT a little bit when writing the book. It seems so barbaric as a treatment and yet it can be effective. It's just such a weird combination.”

Writing in *Salon* magazine, Robert Ito quoted Wallace's father, James. “Going off the medication was just catastrophic,” James Wallace said. “Severe depression came back. They tried all kinds of things. He was hospitalized twice. Over the summer, he had a series of electroconvulsive therapy treatments, which just left him very shaky and very fragile and unable to sleep.”

In the late summer of 2008, the writer, whose *Infinite Jest* won international acclaim, went back on an antidepressant. “He was too agitated to give it the weeks it takes to work,” Max writes. On the evening of Sept. 12 David Foster Wallace stood on a chair in

the patio of his home in Claremont, Calif., and hanged himself. His wife, Karen Green, returned home at 9:30 that evening to find her husband, a two-page note and the many pages of a manuscript Wallace had struggled to take to completion. “This was not the ending anyone would have wanted for him,” Max writes. “But it was the one he had chosen.”

The sense of an ending: Anne is positioned on a couch, Rob at her side, his right arm flung across its upholstered backrest as if he could catch his wife at any moment.

“You didn’t know what you were going to be coming home to or if you were coming home to me being dead,” she says. “You never knew. You didn’t, did you?”

Rob is cautious, supportive, warm. He refers to the first year of his marriage to Anne as “medication hell,” and adds, unnecessarily, “It was hard.”

There came the point in 2009 when, Rob says, there were no medications left to try. Anne had travelled the road from mental fragility to complete shutdown — by November of that year, she was not eating, not speaking, hardly taking in liquids. Anne herself says she was “barely existing.” Adds Rob, “That’s when the doctor started proposing ECT as the way to go.”

The couple quickly found themselves lost in the land of euphemism. ECT is rather like rebooting a computer, they were told. Given the tightness of time — the approach of the Christmas holidays was noted by hospital staff— a six-treatment course was advised using bilateral electrode placement.

Whatever did that mean?

Using *Cuckoo’s Nest* as a handy frame of reference — even ECT advocates do — one may recall the halo of metal that arched above Jack Nicholson’s head. On either end, a tennis ball-sized pad was pressed to each temple, the protocol for bilateral, or, as it is sometimes called, bitemporal ECT, in which the electrical current is

pushed into both hemispheres of the brain.

The similarities end there. Written in 1962, Ken Kesey's novel has McMurphy bridging up off the table "till nothing is down but his wrists and ankles and around that crimped black rubber hose a sound like *hooeee!* and he's frosted over completely with sparks."

Decades ago, the practice of ECT moved away from this "unmodified" procedure. Anesthetics and muscle relaxants were and are co-administered to ensure the patient is both out and slack, much like *Homeland's* Carrie Mathison. A common procedure is to attach a blood pressure cuff to the patient's ankle, impeding the flow of muscle relaxant to the foot and thereby allowing the attending physician to observe the convulsive effect, usually a jerking of the feet, a twitching of the toes.

In recommending the bilateral treatment, Anne's physicians leap-frogged two other options: bifrontal, as Matt Damphouse had, and unilateral, in which two electrodes are placed on the non-dominant side of the head. The right side of the head is normally used for right-handed patients, assuming left-hemisphere dominance. This right unilateral treatment has been proven to leave far fewer negative cognitive effects in its wake.

Rob recalls being told that unilateral ECT "doesn't really work."

Instead, Anne received a course of six bilateral treatments, followed by a course of 16 unilateral treatments split between two facilities after the first hospital advised that she would be better served by an "ultra-brief pulse" treatment it did not have the technology to deliver. Ultra-brief-pulse is deemed state of the art, shaving tenths of a thousandth of a second off the electrical stimulus from the older, but still in wide use, "brief pulse" treatment.

Two years later, Anne and Rob run through the cognitive impairments Anne struggles with to this day. She speaks of her memories as if they've fallen off a conveyor belt, irretrievable. "My memories of the past 10 years, sometimes more, are spotty, and a

lot of it has to be filled in by my husband. But there are things that, what I don't know I don't know, you know? Like if he doesn't know it then I don't know who would know it."

In the early days following her treatments, Anne glanced down at Rob's ring finger and said, sincerely, "Oh, you got married. I'm so happy for you."

Rob today operates as Anne's handler. "I walk around with her sort of like her attaché, (telling her) coming up on the right, with dark hair, is someone you've known for 20 years." Anne calls Rob her external hard drive, a counterweight against the amnesia that has had the effect of removing her from society. "I still feel like I'm visiting from another planet," she says.

That Anne's experiences are so recent doesn't square with the position taken by ECT advocates, who prefer to assign severe memory disruption to the dustbin of history: out-of date protocols and discarded treatment methodologies take the rap. That's old. That's over.

But there are public accounts that echo Anne's outcomes, tragically in the case of Vanity Fair contributor Ned Zeman, whose autobiographical tour of his own ECT journey, *The Rules of the Tunnel*, was published last year. Having, as he writes, lost virtually all creative functioning due to a cavernous depression, and having "laid waste to most pharmaceuticals," Zeman found himself in his "summer of electricity" launching into a series of 20 ECT treatments which, he says, caused "enduring and substantial" memory loss. Zeman writes in the second person: "You will never remember the Crash of 2008. Not today — more than three years later. Not ever. Kiss those 10 weeks goodbye. Likewise the six months that preceded them. Also vast swaths of 2007, save for occasional blips . . . or snippets . . . And the picture quality on late 2006 remains spotty at best." The book is darkly funny, the observations precise. Who else would describe an ECT machine as

a rectangular box that “looked like the Magnavox stereo-receiver you’d once traded for Bob Seger tickets.”

As a reporter, Zeman turned his mind to the big question — how does ECT work — and hit, as everyone does, the wall. “You had trouble explaining precisely how and why the brain took to ECT, because the doctors had never told you, because they didn’t know, either. They had plenty of hypotheses, most of them involving various permutations of the computer-reboot scenario. Meantime, though, ECT remained a conviction based on circumstantial evidence.”

Last spring, a group of researchers at the University of Aberdeen reported on the results of a small sample of ECT-receiving patients who were examined pre- and post-treatment using functional MRI. This latest research has contributed to the so-called “hyperconnectivity” theory of depression, which posits that depression is linked to heightened abnormalities in brain circuitry. The Aberdeen researchers observed that a decrease in “functional connectivity,” sort of a damping down of over-excited brain activity through ECT, was accompanied by a lessening of depressive symptoms. The research made waves among the scientific community. The sample size, however, consisted of just nine patients.

Anne takes a jaundiced view of the science around ECT. “What does it do? What is it working at? Curing depression? No, those people have to go back on medications and take maintenance ECT. No, it doesn’t cure. There have never been any studies that it cures anything. There isn’t one.”

Today Anne is healthy, off drugs, angry. It took a while before the couple realized, as Rob says, that Anne and medications “just don’t mix.”

But Anne is also bereft. “You can’t plan for this,” she says of ECT’s effects on cognition and memory. “It’s like planning for a stroke. How do you know how it’s going to be? How do you know

what part of the brain it's going to hit? How do you know where it's going to affect you?"

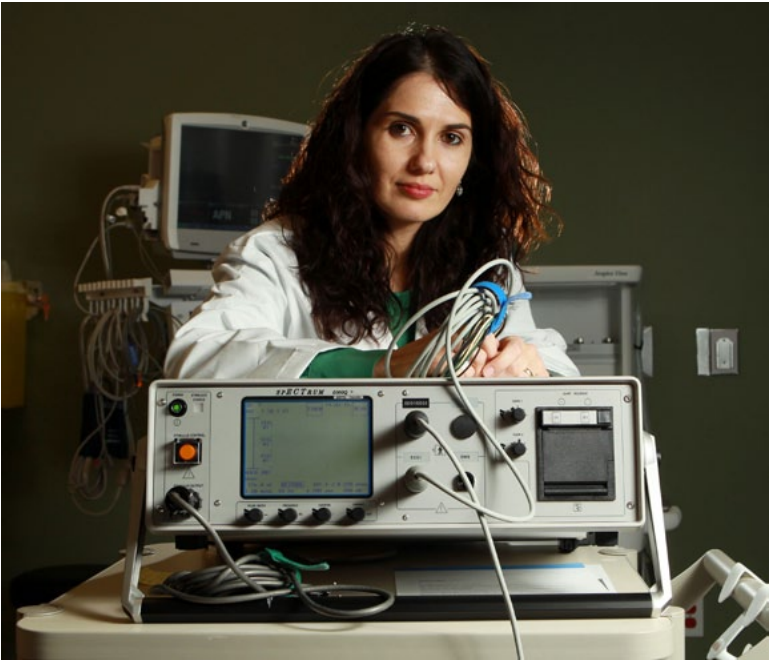
Off antidepressants, Anne receives cognitive therapy daily. The sole effect of ECT, she believes, has been to leave her cognitively impaired. The couple consulted with a lawyer as they contemplated launching a lawsuit against the downtown Toronto hospital that provided the initial ECT treatments. They were dissuaded. "In court we don't hold up well," she says, "we" being ECT patients harmed by the treatment.

During that chilly park walk, as her chocolate Lab arrives at that inevitable moment of deciding to bury rather than chase his rubber ball, Anne rattles off her worries. "The long-term effects are unknown. Are we accelerating dementia? . . . The brain is extremely complex. They don't even know the path of electricity."

Rob, ever stoic, raises a vital point: "There's no support. Look up online for ECT support. I mean the doctors will tell you it's great because they'll give the patient ECT and statistical and anecdotal evidence is, well, it must be working because they don't see the patient again."

## 2 Supply and Demand

When Windsor Regional Hospital accepted its first ECT patients at its new neurobehavioural institute in late October, administrators set a forecast of 750 treatments annually. Dr. Leonardo Cortese, the hospital's chief of psychiatry, believes that's an underestimate. Increasing awareness of treatment availability will, he predicts, be a spur to a "very high increase" in treatment delivery — as much as 25 per cent within the year. "It's like anything else," he says. "You build it, they will come."



*Dr. Corina Velehorschi with the ECT unit of the Windsor Regional Hospital (Dave Chidley for the Toronto Star)*

ECT isn't really "like" anything else, but Cortese makes the

striking assertion that he wouldn't be sticking around if electroshock were excluded from the hospital's slate of treatment offerings. "I would resign," he says starkly. "I would not want to be part of a program that doesn't have ECT."

Windsor administrators have been so firm in their belief of a desperately underserved community that the ECT suite was opened in the absence of provincial funding. "Knowing that this is a service that's needed for our patients and our community, our hospital made the decision to provide the service itself out of its own resources," says David Musyj, Windsor Regional's CEO. "We're hoping that through the number of cases we'll be able to show within the first couple of months that this is a needed service."

Musyj has put \$250,000 of Windsor Regional funds on the line — enough to cover six months of operations to the end of March. "To continue it into fiscal 2013/14 we're going to need funding," he says. Placing a media spotlight on the hospital's predicament is, he says, like "a penny from heaven."

The Windsor experience may be the rule and not the exception, especially in the realm of geriatric psychiatry. On the surface, this seems puzzling. Major depression in the elderly, at roughly three per cent of their population, is believed to be half that of the general population, though the miniscule presence of the elderly in controlled trials and the belief that diagnoses are often missed or ignored — in other words, under-reported — calls that percentage into question. Dr. Kiran Rabheru, past president of the Canadian Academy of Geriatric Psychiatry and a professor of psychiatry at the University of Ottawa, notes that the prevalence of depression among the elderly living in institutional care is known to be far higher — as much as 14 to 15 per cent.

Rabheru believes that ECT is the best ticket to returning quality of life to older people with acute depression — he describes a state



where they're "not eating well, not drinking well, not taking care of their personal hygiene." This group, he says, "responds almost 100 per cent of the time to ECT."

Rabheru is working toward establishing an outpatient ECT program. "The demand for services for the elderly in general is growing," he says. "We know that ECT works well, but I don't think we'll have the supply to meet demand, the resources to meet demand." He's in the process of putting together a proposal to the Ministry of Health for extra support.

Geriatric psychiatrist Dr. Caroline Gosselin, who played a primary role in bringing outpatient ECT care to Vancouver, offers ECT services in two hospitals, with a combined total of 65 treatments weekly. "It's full, it's beyond full," she says. "There are people on the wait list."

"You know as we age," Gosselin continues, "it's clear from the literature that depression becomes harder to treat." In her 25 years in practice, she says, she can "name on one hand the number of patients who have not responded to ECT," and dismisses worries about longer-term negative cognitive effects. "The chances of that happening are almost, I don't know if I can say almost nil, but I sure as hell don't see it."

The demand is there.

But what, precisely, is being supplied?

Asking that question leads straight into a bog of outdated guidelines at best, absent guidelines at worst, confused protocols, non-existent standards and catastrophically outdated equipment.

"There's still a lot of heterogeneity in how ECT is done, unfortunately," says Rabheru, adding that the delivery of ECT requires "a lot of sophistication." Caroline Gosselin calls it an "art."

At the University of Ottawa, a simulation lab has been set up for the training of residents and clinicians on ECT. "I'm trying to lead a group of people to set consensus guidelines around ECT proce-

ture and how it should be followed,” says Rabheru.

Gosselin is one of a group of Canadian psychiatrists who recently attempted to document the national status of ECT. It is the first comprehensive national survey of the practice. Of the 175 ECT-offering health-care centres surveyed, 107 responded, and a series of papers continues to be spun off from that work. What is known thus far: of the 89 sites reporting the existence of written ECT policies and procedures, less than 40 per cent report electrode placement policies, only 30 per cent have electrical dosing policies in place and less than 30 per cent have ECT-specific anesthesia policies. Just 27 per cent reported written policies for managing concurrent medications during ECT.

Contrast that with Australia, where the state of Victoria sets licensing requirements, equipment standards and clinical guidelines. Only practitioners who have attended an approved training course are eligible to deliver ECT. Under the state’s Mental Health Act, a course of ECT is defined as up to six treatments, after which the patient is asked to sign a new consent form. The current best treatment practice “favours unilateral ECT.”

The committee of ECT specialists behind the Canadian study has yet to release its breakdown on caseloads and treatment facilities, but Dr. Barry Martin, former head of the Centre for Addiction and Mental Health’s ECT service and still a staff psychiatrist there, says the highest numbers of incomplete responses were from the provinces of Ontario and Quebec. Even at that, he says, the Canadian Institute of Health Information (CIHI) was eager to get its hands on the raw data, which Martin says cannot be shared for confidentiality reasons.

CIHI is the non-profit federally funded agency whose job it is to collect, analyze and publish “good data and information” so that CEOs, health ministers, policy-makers and analysts can make “good decisions.” CIHI has virtually nothing reliable on ECT. “Any

information I could provide you would be highly inaccurate,” institute spokeswoman Crystal Mohr says.

It’s not for lack of treatment variables to track: electrode placement, frequency of treatments, length of seizure, type of equipment, machine maintenance, patient’s response to anesthesia and muscle relaxant, intensity of electrical current, duration of stimulus, course of treatment, results of pre- and post-exam cognitive tests, which not all facilities administer.

Mohr says CIHI is at the mercy of provinces to supply this data.

But health ministries in just three provinces — Newfoundland and Labrador, New Brunswick and Ontario — require ECT practitioners to report treatments. And even then, the information is slight and not collected in any standardized way. In Ontario, facilities report treatment date and procedure to the Ministry of Health, along with the name of the physician performing the ECT and the name of the anesthetist. Some monitor only in-patient treatments; others have no clue what is happening in regional hospitals.

If they did, government officials would be aware that outdated machines known to cause severe cognitive impairment are still being used by at least three health facilities in Canada, a fact unearthed by the experts’ survey. Dr. Nicholas Delva, head of the department of psychiatry at Dalhousie University and lead author on the group’s study on access to treatment, says confidentiality agreements prevent him from naming the institutions. The study also revealed that 14 per cent of responding ECT sites reported that they did not have the funds to purchase up-to-date ECT or related anesthesiology equipment.

For CAMH’s Martin, the holes in the site data present what he calls the “invited question as to whether or not they are documenting their treatment dosages even within those sites. Are they documenting number of treatments per course per patient? . . . If they’re not providing it to us on request by a group of professional

peers, and are not required to present it in some form to government — what have they got?”

Nor do clear answers lie with the CIHI’s National Ambulatory Care Reporting System (NACRS), which monitors outpatient care. CIHI says it is not mandatory for the NACRS to report ECTs, which Martin finds “troublesome . . . Ambulatory ECT is not only widely accepted, it is now more and more done and is the way to increase utilization in the future.”

Little wonder that Delva et al. are calling for a formal audit to standardize and improve the delivery of ECT, as well as an accreditation program for practitioners. As it stands, a lone province, British Columbia, has published guidelines. But those were released in 2000 and the recommendation that they be updated every five years has long since come and gone.

### 3 ECT on Trial

*Tuesday, Nov. 13, 2012, 4:30 p.m.*

Matt Damhouse is on the phone. He says he is sitting in the living room of his Windsor bungalow, and that he's struggling.

"There's something wrong," he says. "There's something not right."

He surveys the scene before him. "There are papers all over the sofa. Bills in piles. I can't make heads or tails of it. I've got appointments coming up and I don't know when they are."

Matt has type 1 diabetes and has spent most of the day trying to find his endocrinologist. "I was looking through the phone book trying to find out who he was . . . I couldn't remember his name. I thought his name started with an S. I wasn't even close."

Matt was an in-patient at Windsor Regional through the summer. Discharged on Oct. 11, he receives his ECT treatments as an outpatient. He now gets his treatments once a week.

"There has been no after-care given to me since I left the hospital," he says.

Matt is on a disability pension and can't afford private counseling. He met with a worker from the Canadian Mental Health Association. He was told they would try to find him a caseworker. He was put on a waiting list.

"I shouldn't be feeling this way. Considering everything I've been through. All the treatments. The hospital stay. I've got to have made some headway by now."

He describes his first ECT treatments, which were not delivered at Windsor, as "hell." On three occasions, something went wrong.

"I couldn't breathe, I couldn't move, I couldn't speak. And they're yelling at me to breathe. I'm just lying there. I could see. I could hear."

It was later explained that the paralytic agent was injected before the anesthetic, leaving Matt awake and paralyzed. Appropriate protocol would be to oxygenate the patient, administer the anesthetic, attach an ankle or wrist cuff, then the muscle relaxant before pressure is applied to the patient's jaw to bring it into secure contact with the bite block.

"I don't want to scare people away from ECT, but those were horrible experiences," Matt says.

He describes his Windsor treatments as "smooth as silk."

He worries whether he can afford a vet bill for Mindy, his Shih Tzu. She has blood in her urine.

"My dog needs to be put down. I just can't pull the trigger on it."

Matt is scheduled for an ECT treatment the following morning.

—

Matt has his mother.

Anne has Rob.

Peggy Salters had an arsenal of friends, relations — smart people who could testify to the state of her brain pre-ECT and post-ECT, making the Salters case a landmark piece of jurisprudence in the history of the treatment.

Salters resides in a white two-storey Victorian in Richland County, S.C., where, in April of each year, the front-yard magnolia tree bursts with blossoms "almost as big as volleyballs."

Salters is 68. Twelve years ago, in her 50s and suffering the emotional trifecta of the losses of her husband, father and father-in-law within a few months of each other, Salters hit bottom. She had received unilateral ECT years before, after which, according to a statement of facts filed with the Richland County Circuit Court, she had noticed some slight memory problems, which were transitory. In 2000, emotionally dysfunctional and consumed by grief, she found herself, as Anne had, unmoored.

Salters was a nurse practitioner at a psychiatric hospital. One of the doctors she worked with would stop by her home in the mornings to try to pry her from her torpor. “Get up and get moving,” he’d say. To which Salters would respond: “I can’t. I just can’t.”

A psychiatric evaluation of Salters late in the sad summer of 2000 noted a long history of depression. “Nights are very bad; tearful . . . lack of energy and anhedonia . . . anorexia . . . now taking four different medications.” Salters was assessed as “passive, without plan,” meaning not suicidal.

The same psychiatrist recommended that Salters again try ECT. “It’ll get you over the hump quicker than anything,” she recalls him saying. “It did work,” she notes of her earlier experience. “I figured it would be the same.”

Across a period of 18 days in October 2000, Salters received 13 bilateral treatments as an outpatient. Ten of those were delivered across a period of two consecutive weeks, each and every weekday. She received a further three treatments in November of that year before her children said, stop, no more.

They were losing their mother.

At a street party, when neighbours were talking about politics, the subject of the Watergate break-in came up. Salters thought they were talking fences and asked what kind of gate that was.

“I couldn’t remember how to get dressed,” she says on the phone from her home. At work, she’d stumble around the halls until a colleague pointed her in the direction of her office. Nothing seemed familiar.

“I’d call my daughter. I had her on speed dial and I’d call and say, ‘How do I turn my computer on?’ ”

Salters retained lawyer Mark Hardee, an aggressive, straight-talking Southerner who uses the word “juice” instead of electricity. “I was like most people,” he says in a Southerner’s trademark drawl. “I didn’t know people even did it anymore.”

Salters sued for medical malpractice. Hardee's strategy was not to try to take down ECT. Instead, he attacked the way it was administered, as well as arguing that Salters' psychiatrist had deviated from the standard of care by not stopping the treatments even though the same psychiatrist had documented in his notes a deterioration in her mental capacity.

Hardee's star witness was Dr. Peter Breggin, a psychiatrist from Ithaca, N.Y., who has been a thorn in the side of the ECT advocacy community since the 1960s. In his first year of residency at Harvard Medical School, Breggin administered what was then the new, modified — that is, anesthetically controlled — ECT. For a half-century since, he has fought for the abolition of the treatment, placing electroshock on par with lobotomies. "The only way it can work is by damaging the brain," he says from his home in New York. "It works by temporarily obliterating mental functions . . . The damage is the effect."



*Dr. Peter Breggin* (Heather Ainsworth for the Toronto Star)



It was Breggin who established the standard of care in the Salters case, testifying that her psychiatrist had a duty to “review and adjust the treatment technique” by, for example, switching to unilateral, lowering the electrical dose and increasing the time interval between treatments.

A pillar of the plaintiff’s case was the guidelines set by the American Psychiatric Association. Salters’ back-to-back treatments didn’t come close to following those rules, Hardee says. According to APA guidelines, “prolonged use of daily treatments or use of more intense regimens . . . should be avoided due to the heightened risk of cognitive dysfunction.” The directives state that ECT treatments are to be given no more than three times a week with at least one day off between treatments.

Salters’ psychiatrist breached the standard of care by not stopping the treatments even after Salters presented with dramatic memory problems and a drastically changed personality. At trial, Salters was not the marginalized victim that this story could so easily make her out to be. She had the staunch support of established medical professionals, and they were her friends. She had ECT-performing psychiatrists testifying on her behalf. “When they brought all their doctor friends in to testify for them, I, too, brought in some doctor friends. These people knew me and they knew my credentials and thought highly of my skills . . . I was a person who had gotten very depressed for very legitimate reasons and was trying to get better.”

In 2005, a jury awarded Salters more than \$600,000. That ruling was upheld in the spring of 2007.

Salters went on disability soon after the treatments and she embarked upon a journey to reclaim what she had lost. A psychologist friend took her to the library, where they rented reels of historical videos to “relearn things that happened in the world. Things I should know because I was alive.”

She attended a speech and hearing clinic where she relearned how to read and how to use figures of speech. Idioms, by example. “I couldn’t remember what they meant,” she says, offering “piece of cake” as an example.

While Salters successfully challenged the application of shock treatments, she is no firebrand. She says she is not anti-ECT and reminds that her first experience with unilateral treatments did seem to help.

“I think there’s a middle of the road there,” she says. “There is a middle of the road in just about all medicine. It’s not black or white.”

But the world of ECT is precisely that — abolitionists, such as Breggin, doing battle against staunch defenders, most notably Dr. Max Fink.

Fink, a pre-eminent ECT researcher who turns 90 in January, traces the bloody dispute between the two camps to the immediate postwar period. “There was a conflict between the psychiatrists who pledged allegiance to Freud and the psychiatrists who were very excited about the fact that we could treat patients who were mentally ill and get them out of hospitals and sanitariums and into their homes,” he says from his home in Nissequogue, N.Y.

This latter group was a great wave of psychiatrists seeking somatic — of the body — treatments for ailments of the mind.

“Psychoanalysis,” Fink continues dismissively, “became the model for the theatre, for politics, for musicians, artists. They presented ECT as the opponent. That’s the reason, as I see it, for the switch in history. In the 1940s and early 1950s, ECT was considered a tremendous achievement.”

Fink earned his MD from New York University College of Medicine in 1945. He did his residency at Hillside Hospital, now the Long Island Jewish Hillside Medical Center, where he continues to train clinicians. In 1954, the hospital asked him to direct

a newly created department of experimental psychiatry. He published widely on predictors of ECT outcomes and how to achieve effective treatment.

In 1975, the American Psychiatric Association asked him to become a member of its ECT task force. A decade later, he launched a quarterly journal about convulsive therapy, now called the Journal of ECT.

Despite his advocacy, Fink can find flaws, weaknesses. “I edited the Journal of ECT for the first 10 years. I read many submissions. And when you read them, you realize that people have . . . mistreated their patients. They don’t know it, but I know it from the way they write.”

Fink says delivery protocol standards need to be developed where they don’t exist and enforced where they do. “Very few physicians are trained properly (in ECT),” he says, adding that some institutions offer one-day training programs. He calls these programs “spurious” and “unethical.”

But what is the proper training for electrode placement? Fink says that debate has been raging since the Forties. “There is a myth, and I use that word advisedly, that right unilateral electrode placement is as effective as bilateral electrode placement with much less memory difficulty . . . Well, the reality is that unilateral electrode placement is 30 per cent less efficient.”

He cites two studies supported by the U.S. National Institute of Mental Health that began in the 1990s. “One group used right unilateral and one group used bitemporal,” he says. “The one with right unilateral required 10 treatments. The one with bilateral required seven. A three-treatment difference is enormous. You have achieved success at less cost and faster. My writing says unequivocally that bitemporal electrode placement is to be favoured.”

In the Peggy Salters case, Peter Breggin took direct aim at such convictions. Bifrontal or bilateral, it doesn’t matter, he testified.

“You’re still passing that electricity through the highest memory centre,” he says. Both treatments are “old-fashioned” compared to unilateral.

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It has been a week since Hurricane Sandy blew through the horse-and-buggy landscape of Dr. Harold Sackeim’s Pennsylvania horse farm. The electricity is back on and the water, too, which is a much better state of affairs than hauling 55-gallon drums of water for those 11 horses housed in his ancient stone barn.

Sackeim may have semi-retired to the contented landscape of Amish country, but his name is still top of mind in the ECT community. Emeritus chief of the department of biological psychiatry at New York State Psychiatric Institute, and a professor of psychiatry at Columbia University, Sackeim was lead author on a landmark investigation, the first of its kind, into the cognitive impairments directly linked to ECT.

“A significant segment of the psychiatric community essentially took the view that ECT could do no wrong and denied the possibility of some of the adverse effects that, in fact, did occur,” he says.



*Dr. Harold Sackeim* (Bradley C Bower for the Toronto Star)

The evidence of that emerged in a study published in *Neuropsychopharmacology* in 2007, with Sackeim, who has worked in ECT since 1979 and had led a wave of earlier research into electrode placement, electrical dosage and treatment technique, as the lead author.

To study the long-term cognitive effects of ECT, patients at seven hospitals in New York City were assessed immediately and six months after treatment completion, making Sackeim's work the first large-scale study of cognitive outcomes following ECT.

That alone seems a surprising statement: how could a treatment in practice for 70-some years have escaped such examination? The results were startling: some forms of ECT “have persistent long-term effects on cognitive performance,” the study concluded, kicking to the curb the standard line of defence that ECT results in a headache, likely, and possibly short-term memory loss that will soon vapourize.

The study exposed an inconsistency of technique from site to site. Discredited sine wave technology was found still to be in use long after the more advanced technique of brief pulse, or ultra-brief pulse, had proved far safer. On this point, Sackeim was clear: sine wave stimulation is grossly inefficient and unquestionably associated with both short-term and long-term cognitive deficits. “The findings here raise the concern that this form of stimulation has deleterious long-term effects on elemental aspects of motor performance or information processing,” the study concluded. As such, there was “no justification” for the continued use of sine wave.

In an interview, Sackeim contrasts the two methods, with ultra-brief-pulse — each pulse three-tenths of a thousandth of a second — delivering a course of treatment in about a quarter of a second, versus sine wave, which continuously rises, then falls, and

is almost constantly depositing energy for roughly eight seconds. Brief pulses, says Barry Martin at CAMH, are “discontinuous” and “staccato.”

Sackeim’s research further concluded that bilateral ECT resulted in “greater amnesia for autobiographical events, and the extent of this amnesia was directly related to the number of (bilateral) ECT treatments received.”

A more positive outcome was determined with unilateral electrode placement, leading researchers to conclude that there appears to be “little justification for the continued first-line use of (bilateral) ECT in the treatment of major depression.”

Other findings: greater deficits were recorded in women than men; “and electrical dosage was not adjusted in most cases relative to the individual patient’s seizure threshold.” Women, with their thinner skulls, have a lower seizure threshold than men.

“No matter how you do ECT, it’s very clear where its vulnerabilities lie,” says Sackeim. “It’s almost exclusively in the realm of memory for events of the past. Do you remember what happened to Princess Diana? Do you remember the tsunami in Japan, that sort of thing. As well as events in your own life, autobiographical events.”

Make no mistake, Sackeim is an ECT advocate. For the treatment of major depressive disorder in the patient group that has proved unresponsive to other treatments, ECT is, he insists, the very best tool psychiatrists have at their disposal.

Improvements in treatment, ultra-brief pulse especially, have significantly reduced the potential for adverse treatment effects, Sackeim says. “But it’s not eliminated. In my view, the reason consent forms should describe and do describe the worst that can happen, regardless of the sophistication of treatment, is because we can’t guarantee for anybody that that’s not going to happen.”

Ninety-nine per cent of patients treated at Columbia start off

with unilateral ultra-brief pulse. Hearing that such a high percentage does not square remotely with Canadian practice, Sackeim ponders professional resistance to newer technology — not uncommon in the field of medicine — and the context of having to deal with extremely ill people. “You’re feeling pressure to ensure you’re giving them the best chance of getting well . . . It is true the most, I won’t call it barbaric, but I would say the least subtle way of giving ECT, the most intensive form of ECT, is always guaranteed to be the most efficacious. We have to learn how to administer the forms of treatments that have much less side effects.”

## 4 80 Volts

*Monday, April 11, 1938, 11:15 a.m.*

“The patient is laid supinely on the bed. The arms are tied. The temporal-parietal areas are rubbed with a sponge wet in a saline solution. On these areas two electrodes are placed.”

Eighty volts.

One-quarter of a second.

“The patient during the current’s flow immediately presents a tonic spasm of all the muscles of the trunk and of the limbs, becomes slightly pale. At once he starts singing loudly . . . there is no loss of consciousness nor any other pathological phenomenon worthwhile to mention.”

Eighty volts.

Half a second.

“The patient makes us aware through his schizophonic (sic) language that he has perceived the flow of the current as an unpleasant sensation and says that he does not want to try a third time.”

Eighty volts.

Three-quarters of a second.

“The same phenomena are evident as in the preceding descriptions. The patient is freed, gets up immediately, walks back to the ward, talking in his usual loose way.”

This historical record of the beginnings of electroshock are found in the Menninger Family Archives, which now reside with the Kansas Historical Society in Topeka. It was American Psychiatrist Karl Menninger who, in 1930, wrote *The Human Mind*, opening the door to an exploration of the mentally ill. In the early Sixties, there was great eagerness among Menninger administrators to secure the records of the co-inventors of electroshock: Ugo Cerletti, an Italian psychiatrist and neurologist, and Lucio Bini, a



clinician who worked alongside Cerletti at the University of Rome and who built the first electroshock apparatus.

The hunt for these somatic treatments in psychiatry find their beginnings in the work of Ladislav von Meduna. It was Meduna's observation that the symptoms of schizophrenia were diminished in epileptic patients, leading to the hypothesis that inducing seizures could work as a treatment of psychosis.



*First female ECT patient, 1930s (Kansas Historical Society)*

But how to induce the seizure?

“Shock” treatment in the form of insulin shock, more accurately described as an insulin-induced coma, was introduced in Vienna in 1933 by Manfred Sakel and used widely for at least two decades, until controlled studies demonstrated that the “therapy” had no positive effect in the treatment of the mentally ill. The damage caused was perhaps most graphically documented by the feisty, gorgeous, troubled American actress Frances Farmer, who

was institutionalized and subjected to three months of daily insulin shock therapy. “Regardless of what is claimed by those devoted to research, there are blank spots left in my mind that have never been filled,” the actress wrote in her searing autobiography, *Will There Really Be a Morning*. “There are months of my life that are gone and they never seem to surface, even in fragments.”

In Ontario, patients receiving insulin therapy were vastly outnumbered by those receiving metrazol, a pharmacological way to induce seizures that had been introduced to the province in 1938. Within a period of four years, metrazol shock outpaced insulin shock by six to one. A “shock therapy” survey of Ontario patients between 1939 and 1941 makes no mention at all of electroshock.

Shocking a patient via an electrical current fell to Cerletti and Bini.

Together, Cerletti, whose students called him Maestro, and Bini performed hundreds of shock treatments on dogs in an attempt to induce epileptic seizures, initially placing one electrode in the mouth and the other in the anus. You may not be surprised to learn that the outcomes were not good: a great number of dogs, rounded up for the clinic by the local dog catcher, died. A new circuitry, placing electrodes on the left and right temporal regions of the mutts, induced seizures in the animals without causing death. It was these experiments that eventually led to the first human application in the spring of 1938.

The spare account that appears in rough translation in the Kansas archives doesn’t exactly herald huge success with patient No. 1. Yet a retelling published in 1970 by Ferdinando Accornero, a student of Cerletti and an eyewitness to the early experiments, is an unashamed and unabashedly unscientific piece of electroshock promotion.

“A schizophrenic man had been admitted several weeks previously to our psychiatric ward,” Accornero writes. “He had been

brought by the police who had found him wandering on the streets of Rome . . . The patient often expressed himself in a jargon of his own invention, which was very difficult to understand. He expressed delusions, and his thoughts were disorganized and without logic. He was unemotional, living passively, like a tree that does not give fruit.”

Morning. April, 1938. A plastic tube is covered in gauze and placed in the patient’s mouth. His head has been shaved for enhanced electrode adherence. Bini’s machine administers 80 volts — no result — then 90. After nine treatments, the patient is lucid, re-engaged in life, and back at work. The account reads like a fairy tale, and advances to the bizarre when Accornero adds that each treatment was heralded by, literally, the fanfare of a trumpet.

No mention is made of cognitive impairment. The word “memory” is not uttered. That these treatments were “unmodified” — that is, given in the absence of muscle relaxants and anesthesia — and therefore often resulted in broken bones as bodies arced into seizures goes unremarked. It was Toronto psychiatrist Donald Gunn who, in the 1950s, researched the efficacy of the muscle relaxant succinylcholine as a possible partner to electroshock. In the absence of a muscle relaxant, Gunn wrote, compression fractures of the spine occur with “alarming frequency” — in male patients as much as 47 per cent.

Though he writes more than 30 years after its discovery, Accornero champions the treatment unreservedly. “Any specialized physician can use it, even at the patient’s home with the help of a single portable device.” True enough: as early as 1940 the Bini machine could be handily toted about in a walnut carrying case customized by the Offner Electronics Company of Chicago for \$250.

Accornero does question Cerletti’s wisdom in coining the name for the treatment. “If instead of ‘electroshock’ . . . the word ‘electro-relax’ or a similar one had been used, perhaps today some patients

and their families wouldn't have so much concern about receiving electroshock."

Unlikely. The Seventies and early Eighties witnessed widespread protests against the use of electroshock, discounted as a treatment for epilepsy but seized for a buffet of conditions, from depression to catatonia, and for such attempted social modifications as a "cure" for homosexuality. The release of the movie version of *Cuckoo's Nest* in 1975 was a galvanizing moment: the image of an electrified Nicholson bore into the public psyche, and Nicholson won an Oscar for best actor.

"They, uh, was givin' me 10,000 watts a day, you know, and I'm hot to trot," McMurphy says. "The next woman who takes me out is gonna light up like a pinball machine and pay off in silver dollars."

The anti-psychiatry movement was engaged, active, vigilant. In the spring of 1982, a small group of former psychiatric patients travelled from the U.S. to protest shock therapy outside Toronto's Sheraton Centre, where the American Psychiatric Association was holding its annual conference. The Ontario Coalition to Stop Electroshock called for the outright abolition of the treatment, echoing waves of protests in the U.S., most notably the Berkeley, Calif., ban on ECT in local hospitals. What the Ontario movement lacked was its Norma Rae, its Rosa Parks.

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Carla McKague can speak to becoming pretty quickly radicalized, back in the day.

She wasn't a young lawyer, but she was a new lawyer, having started at the University of Toronto at the age of 38 and finding herself fresh in practice that summer of 1983.

She directs her motorized wheelchair along a hallway at the Bridgepoint Health centre to a small meeting room facing out to

the back end of the old Don Jail, the burbling from her oxygen tank serving as ambient background noise, her emphysema keeping her in lockdown.

She has lovely doe eyes, skim-milk skin and a needle-sharp intellect. “I was probably one of only two or three lawyers in the entire province of Ontario who knew or gave a damn about mental health issues,” she says. She knew about the system. She knew about depression and ECT, having undergone two rounds of treatment as a young mother years before.



*ECT patient, 1940s (Psychological Cinema Register of the Pennsylvania State College)*

That summer of '83, she was sitting in her Charles Street office one Friday afternoon when a distraught family showed up pleading with her to “save us by Tuesday morning.”

This was the case of “Mrs. T” and this was Mrs. T’s family.

Part of the record of the Mrs. T. case rests in the Ontario Archives on the campus of York University. A manila folder contains a collection of communiqués to and from the Ontario Ministry of

Health. Data. Government rejoinders. Position statements. It's not a thick dossier, 100 pages or so, all relating to a provincial committee struck in the mid-'80s. The documents were released to the Star under a freedom of information request. Very near the end, a hand-written note stapled to a two-page brief states simply: "Reason for ECT review."

The attached report, marked "Confidential," is dated Nov. 4, 1983, and tells Mrs. T's tale. She was an involuntary psychiatric patient who had been admitted to Oakville-Trafalgar Memorial Hospital and then transferred to the Hamilton Psychiatric Hospital on Aug. 5.

Mrs. T. had previously received in-patient psychiatric care at a number of hospitals, including the Queen Street Mental Health Centre. In the summer of '83, she was readmitted after what was described as an unprovoked assault with a hammer on her mother.

On Sept. 19, while an in-patient at Hamilton Psychiatric, Mrs. T attempted to hang herself by tying a scarf around her neck and attaching it to a hook on a bathroom stall door. She was put on a number of medications — haloperidol, Valium and chlorpromazine among them — but to no effect. The medical director at Hamilton Psychiatric asked Mrs. T's family to consent to ECT. They refused.

In the absence of her family's co-operation, the hospital applied to the regional review board for an order to submit Mrs. T to a series of 12 electroshock treatments, a request that was granted. On Oct. 28, the family retained the services of Carla McKague.

"They were devastated that she would be receiving this electroshock therapy that everybody had said no to," McKague recalls. Her legal strategy was to argue that ECT should be defined as psychosurgery, which had been outlawed for involuntary patients under the Mental Health Act of Ontario in 1978. But the banning of psychosurgery was aimed at transorbital lobotomies, popular-

ized in the U.S. by Walter Freeman, who gruesomely tapped what looked like a small ice pick above and behind a patient's eyeball, severing connections to the brain, thought to be a remedy for a host of maladies, from melancholia to anxiety to suicidal ideation.

"Psychosurgery can be defined in different ways in different pieces of legislation," McKague says today. Madam Justice Van Camp ruled against Mrs. T. Even marshalling the forces of Peter Breggin to testify on Mrs. T's behalf couldn't turn the case, and that, McKague recalls, cost a pretty penny.

The case of Mrs. T was a landmark moment in the delivery of shock treatment in Ontario. In the wake of Van Camp's decision and in acknowledgement of the high profile gained by the Ontario Coalition to Stop Electroshock, health minister Keith Norton announced a committee review of ECT, with terms of reference including a patient audit — there was no central aggregation of data indicating who was receiving the treatment — treatment data and treatment criteria and standards. A chief recommendation was to set guidelines for the future use of ECT in Ontario, "including when, how, why, and if such treatment should be ordered." Windsor lawyer Charles Clark was appointed as review chair.

The committee cast a wide net, putting out the call for submissions, of which 350 were received, and plumbing the contemporary archive outside the country, the U.S. and the U.K. especially. While there was a rush of anecdotal input, the committee hit a dead end on data. The sole source of data on ECT use was the province's Hospital Medical Records Institute, yet HMRI advised the committee that, "in general, non-surgical procedures are grossly under-reported by hospitals."

The committee developed its own questionnaire, which it sent to 86 facilities. Forty-five responded. "It was only later that it became evident that the detailed information requested in the questionnaire was virtually unobtainable," the committee concluded.

No regulation of the machinery was in place — mandated maintenance and calibration, as an example. Residency training was inconsistent. Outcomes were undocumented. Long-term, post-treatment data was non-existent.

The frailty of the research comes clear soon enough. The ECT review committee, whose report, absurdly, is available at the archives only under a freedom of information request, included such ECT-delivering hospitals as Guelph's Homewood Sanitarium. The committee sought answers to 19 questions, from the equipment used in administering the procedure to what information is provided to patients on risks and benefits. According to the archive file, Homewood did not respond.

The committee wasn't exactly hamstrung, but its work was certainly drastically curtailed.

It attempted to address the issue of electrode placement, and acknowledged even then that research was pointing to a lessening of memory impairment with unilateral placement, but could reach no firm conclusions about contemporary practice.

As for equipment, as a "basic requirement for the protection and safety of patients," the committee recommended to the provincial Ministry of Health that all ECT equipment in use meet minimum standards and that the machines be maintained and calibrated "at least every six months by a qualified engineer."

On this point the Ministry of Health today refers a reporter's query to Health Canada. Are hospitals required to report to Health Canada on what equipment is being used? A Health Canada spokesperson replies by email: "The provinces and territories are responsible for the use of medical devices, while Health Canada authorizes medical devices (sic) based on safety, effectiveness and quality." So does Health Canada have a policy on sine wave machines? "No. Policies for use of the devices incorporating these technologies would fall under the practice of medicine which are



a provincial responsibility.” The roundelay back to the ministry brings the reiteration that it has no oversight over ECT equipment.

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In her modest apartment situated above a Grimsby dress store, Annette Van Es is bathed in the soft light of mid-morning, surrounded by medical records.

She requested the documents a few years ago and has since studied these papers so thoroughly that she can recite most of the information by heart. The papers are a portal into who she was, what happened.



*Annette Van Es* (Glenn Lowson for the Toronto Star)

The 1985 provincial review of ECT advised hospitals to “store records and data in a manner which may facilitate and encourage assessment and investigation of this modality of treatment.”

Annette doubts the ministry has learned anything from her file. The year was 2000, Annette was 44.

What she remembers:

Dressed in a tissue-thin hospital gown, she joins the company of five or six other women, similarly dressed. A hospital corridor. An elevator.

She remembers the anxious silence, descending, waiting for the basement-level light to pop on, “Like we were in grade school waiting for the bell.”

This is Annette’s story. She has never shared it with the media.

Twelve years earlier, Annette was a full-time, straight-A student and single parent of five finishing her final year of anthropology at McMaster University, until, as with Anne, and as with Peggy Salters, she became unmoored. “One day I started crying,” she says. “I completely shut down.” The domestic tragedies were numerous. The rape of a daughter. The death of a loved one.

“My psychiatrist said nothing is going to help you except for ECT,” she says. “At that point, I didn’t care. I didn’t care what happened to me. I didn’t care about anything.”

Annette goes to that underground place in her storytelling, to the elevator opening on to a cavernous space. It is like a vast and cold cafeteria . . . a cafeteria without the food and the clatter.

A row of stretchers are lined up, each with a sheet but no pillow. The sheet is pulled up off her legs, freeing them to twitch or thrash with the convulsion.

And then two metal discs, a little bigger than a quarter, are secured to the front of her head with a perforated band the doctor continues pulling “really tight” until the eye and hook of the apparatus connect. A metallic clink. “The last thing I could always remember before I was put under was that clink.”

After 40 ECT treatments, that “clink” is the monophonic soundtrack to a long, dark period in her life.

“It’s not only what happened to me, it happened to my kids,” Annette says. In response to a query from the Star seeking a deeper

understanding of Annette, one daughter, Erica, submits an essay simply titled “Mom.”

“I would learn to accept that my mother as I knew her was gone and in her place, a broken child that would need to re-learn how to operate very basically in the world,” Erica writes. “Her last release from ECT treatment, when I was 18, would leave her infantile.” Erica, like the rest of her siblings, never finished high school during this time. She would later go on to study social work.

“She would need to know who her doctors were and what dates her children were born. I would show her where she banked, explain to her what medications she was on.” Annette had no memory of her home. “She walked around exploring an old landscape as if it contained clues.”

Post-ECT, on a cocktail of anti-psychotic and antidepressant medications, Annette made dozens of attempts to end her life. Erica’s words: “Her increasing suicide ideation in the moments of her freedom from hospital had me lugging all the kitchen knives in my backpack to school and at times searching for her on the piers.”

Tacked to the wall above the window in Annette’s living room, a rectangular sign of the Gone Fishin’ variety hangs above a cut-lace valance. A dollar store find, she says.

Insane Asylum, it reads.

“My kids are very loving and caring toward me but they have memories of how bad that time was that I don’t have,” she says. They don’t show her pictures anymore. The history she can’t recall unravels her. “My brain goes into this scramble mode,” she says. “Scrambling, scrambling. I’m still no further ahead.”

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The position of ECT advocates is that the number of success stories vastly outweighs the number of failures, and that ECT is 90 per cent “effective.” ECT relapse rates are 50 per cent; this is a widely

accepted figure. Not uncommonly, patients are asked to pursue a course of maintenance treatments.

John counts himself an ECT success and has agreed to share his experience on the condition of anonymity. He cites the ECT “stigma,” a point raised by virtually every patient we spoke with as well as the psychiatric community, and there’s the need to keep the private private. John is 60 and veritably slumps into a long sigh as he recounts his “situational” depression, triggered by domestic despair. He has an unadorned way of expressing what that sucking emotional quagmire looked like: “It just got real dark.”

John’s situation was not at all helped by pharmaceuticals. “I’ve been through every antidepressant known to man,” he says of an off-again, on-again medication cycle. He could take a shower. He could make a meal. The basics. But, really, the bottom had fallen out of his life, a realization driven home by his inability to experience not so much joy as laughter. “A good joke can get me through the day, no problem. But when I’m down, there are no good jokes.” When John cites his list of top funny men, the real bell-ringers, it’s Phil Silvers, Allan Sherman, Jackie Gleason, advancing to George Carlin. The golden age.

That John’s depression was pharmaceutically unreachable places him in plentiful company. Despite the multi-billion-dollar fire-power of the giant drug companies, it’s now broadly accepted that 30 per cent of sufferers are unreachable via medication.

The goal of symptom remission, defined as seeing a patient return to full functioning, not as being less depressed, was the focus of a seven-year study by the U.S. National Institute of Mental Health, the results of which were published in the *American Journal of Psychiatry* in 2006. Colloquially referred to as the STAR\*D study (Sequenced Treatment Alternatives to Relieve Depression), the investigation tracked more than 3,600 patients at 41 clinical sites in the U.S. and serves as a landmark reference point for the

study of depression. It is from the STAR\*D study that the beyond-reach 30 per cent is derived.

John believes he was prescribed “at least a dozen” types of medication. “He thought all the answers were in his prescription pad,” he says of his psychiatrist. Becoming more and more isolated he finally called up a friend, uttered an “I’m not feeling so good” plea, and soon thereafter found himself contemplating his psychiatrist’s suggestion that he check out ECT.

First thoughts? “Jack Nicholson with the rubber thing between his teeth and just, you know, reports of significant memory loss.” And having made the decision to go through with the treatment? “I was scared bleepless, and not happy about it at all.”

Here’s a scene: John is a boy of 7 or 8. His mother takes him to the hospital to see his father, who has had a procedure that young John would have no concept of. He would later learn that his father had been treated for depression with electroshock. “He didn’t know who I was, which was pretty scary, you know. I’m a little kid and I’m me, you know.”

This would have been the Sixties, and John notes the hoops that were jumped through to ensure there was no societal awareness of how, and for what, his father was being treated. John’s father was assessed at a hospital across town and ultimately underwent ECT at Homewood in Guelph.

A vital point: “I remember him telling me he really hated the treatments,” John continues. “But they seemed to help, so he had to do it.”

John opted in. The first two to three weeks, during which he had a series of bilateral treatments, are mostly lost to him. He recalls hearing the thrumming of feet on the mattress from the patient ahead of him. Like a drum roll. The disconcerting buzz of the machine. “They put a rubber band around my head and put two electrodes there and there, a little jelly and that’s what I know.”

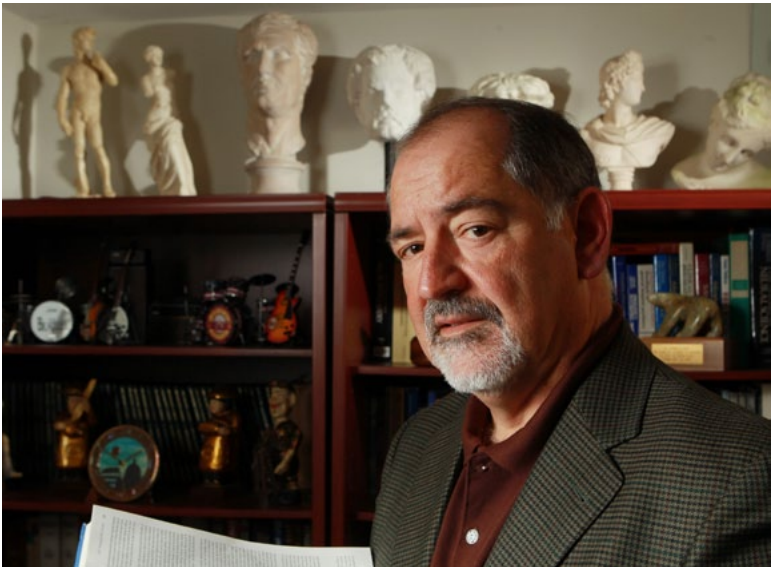
John says he suffered no memory impairment beyond that initial treatment period, and he recalls the gloom lifting and the moment at which he checked his email for the first time in a long while. He retrieved the ability to laugh at, if not life, at least a joke.

John transitioned to “maintenance” ECT, receiving it now every eight weeks. He questions whether he should continue. He attributes his improved mental state to the treatment, though is wary now of what he describes as a post-treatment euphoria. “For a couple of days there, it felt like, you know, smoking in the boys’ room. It really did.” John intends to ask his doctor next time they meet if it is, perhaps, time to stop the treatments.

## 5 Memory Gap

The ECT recovery room at Windsor Regional has the look of a nail bar — puffy black leather recliners, a television, reading material: O, The Oprah Magazine; Redbook. This is state of the art.

Chief psychiatrist Dr. Leonardo Cortese’s hospital ID hangs from a black Ferrari lanyard around his neck as he leans forward to explain his knowledge about electrode placements.



*Dr. Leonardo Cortese (Dave Chidley for the Toronto Star)*

“When I was a resident it was bilateral,” he says. Current practice? “Unilateral. In some cases, if it’s not effective, sometimes we’ll go back to bilateral, but for most individuals right now, unilateral is very effective . . . There seems to be some suggestion that unilateral may have less of the repercussions, less headache, less memory loss and so forth.”

When presented with one psychiatrist's opposing view — better to jump to bilateral at the outset — Cortese is clear. "My philosophy is different. If I can get away with the least offensive intervention, why would I not do that? . . . So I stay on unilateral, unilateral, unilateral."

That has not been the practice at Windsor. Matt is a case in point. In a subsequent conversation, Cortese is asked for clarification. "In the days that I did it, that's what we were doing . . . You were asking me the history of things."

Actually, we weren't. And it's fair to ask why the chief of psychiatry is not up to speed on procedure.

"Corina is our lead," Cortese says. "She's our lead on ECT."

Dr. Corina Velehorsch trained in medicine in Romania, and in psychiatry in Dayton and Detroit, where she received her ECT training at Henry Ford Hospital. She is the ECT chief at Windsor Regional and has been Matt Damphouse's physician for six years. She says she was surprised to hear that he chose to speak with the Star about his ECT experience specifically, and his state of mental health more broadly. "He's a very private person. He never likes to talk about himself, not even when he's the sickest."

She will not comment on Matt's diagnosis, except to say that he suffered a major depressive episode and was so sick — "severely sick," she says — that he needed something fast. "All the other options, we've been through them and they have not helped much."

Velehorsch says electrode placement depends on the clinical needs and the profile of the patient. The other two patients she has treated at Windsor Regional since it opened have received bitemporal ECT. "Bitemporal is by far the one with the best outcome in terms of depression control, but it is the worst in terms of cognitive side effects."

The intensity and pervasiveness of those impairments vary, she says. "I've had from anywhere between the month surrounding or



only the time surrounding the ECT, which is the most common, to a few years, but again that is very rare.”

The hospital’s ECT patients sign a consent form that provides a rundown of the procedure and notifies the patient that memory loss is a common side effect of the treatment. “The degree of memory problems is often related to the number and type of treatments given,” the consent form states. The patient may experience difficulties remembering events that happened before and during the course of treatment. The “spottiness” in memory for past events may extend back to several months before receiving ECT, patients are told, and “less commonly, for longer periods of time, sometimes several years or more.” Permanent gaps in memory are a possibility.

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*Saturday, Nov. 17, 2012, 10:50 a.m.*

Matt answers the door in slippers, grey sweatpants, a Detroit Red Wings ball cap and a black-and-white Hawaiian-print shirt whose short sleeves expose a PICC line stuck in his right arm, an intravenous port for the anesthetic he gets with ECT.

He wasn’t expecting company.

A *Seinfeld* rerun is on television and an assortment of household items clutter the coffee table — two remote controls, a flashlight, a can of Febreze, a red wooden pepper shaker in the shape of an apple.

Aside from the coffee table and the jar of peanut butter on the computer desk near the front door, the place is tidy. Certainly not the scene he described four days earlier.

“Yesterday Mom came over and she helped me clean,” he says.

Matt’s two cats, Monkey and Buddy, are pouncing around the living room. There is no sign of Mindy, the Shih Tzu.

“I brought her to the vet and put her down,” he says.

So how's he feeling today?

"I sleep a lot. Ten, eleven hours a night . . . I struggle to do the dishes, to do my laundry, to maintain my house . . . The fogginess is making it hard for me to cook. Before ECT I made spaghetti hundreds of times. I can't seem to follow a recipe. I can't seem to remember the recipes."

Friday was pizza night, but he couldn't recall how to set the oven timer. "It was killing me. I couldn't figure it out. I could not figure it out."

Would he say ECT has worked?

"Yes, yeah. But there is a cost. You lose a little of yourself. But I remember the way I was feeling before I went into the hospital and I don't want to go back to that."

Velehorschi says she is not worried about Matt's struggles with his memory. "It's common," she says. "It's mainly short-term memory loss surrounding the time of the treatment." That period will remain "patchy," she says, "possibly for a long time."

Velehorschi says Windsor Regional hooked up Matt with an anxiety treatment program and that it was the hospital that connected Matt with the Canadian Mental Health Association.

An appointment has been set with a caseworker. "I don't know what fruit will come from that tree," he says.

## 6 Aftershock

Just 10 years ago, psychiatrist Dr. Jeffrey Daskalakis was performing ECT in a 100-square-foot lab on the seventh floor of CAMH's College Street location. Today he's the point man for the hospital's new \$7.4-million brain stimulation centre.

This is the future.

Daskalakis predicts that in five years, magnetic seizure therapy (MST) will outpace ECT. This next-generation treatment uses targeted, high-frequency magnetic stimulation instead of electricity to produce a seizure, and CAMH is one of only five hospitals in the world to offer it.

Daskalakis continues to run CAMH's ECT program, giving him perhaps a unique view on comparative outcomes. The cognitive effects of the two therapies are, he believes, inarguable. ECT causes "significant memory impairment, cognitive problems," he says. Those effects, he adds, are experienced by the "vast majority" of ECT patients. He breaks sharply with the defensive message many of his most-esteemed hospital colleagues have been promoting for decades. "It's undeniable, it's irrefutable; there is profound memory loss in some cases," he says of ECT.

Pulling out a piece of paper and a pen, the doctor starts scribbling. Here comes the pitch. "Let's take Toronto. Our population is, say, six million. We're dealing with roughly 12 per cent of the population or maybe even 15 per cent . . . who will have depression at some point in their life. So of those 900,000, one-third will be suffering from depression on an ongoing basis. That's enough to fill 10 SkyDomes. Maybe not 10. Maybe five."

This would be Jeffrey Daskalakis's target market.

Since late summer, CAMH has offered MST as a clinical trial.

In a cheery font, an 87-word section of the single-page, tri-fold pamphlet that the hospital provides to patients describes how the procedure works: by delivering high-frequency, high-intensity magnetic stimulation that passes into a focused area of the brain, creating a seizure. Preliminary research suggests that by specifically targeting the frontal lobe area, as opposed to what Daskalakis calls the “unpredictable pathways” of ECT, magnetic stimulation may sidestep the cognitive side effects associated with electroshock.

“The early studies of MST suggest its efficacy is comparable to ECT,” he says. “If that’s true, then you have a treatment that is as good as ECT without any of the deleterious memory effects.”

That magnetically induced seizures are just as effective as electrically induced ones is an “intriguing suggestion,” says CAMH’s Barry Martin. But, he cautions, “Regardless of the enthusiasm, which I share — one has to be embracing the advances in technology — the problem is they still remain unproven.”

Science still hasn’t isolated where the therapeutic benefit of the seizure really lies. “I’m not sure that magnetic seizure therapy is going to get at that,” he says. “It would be lamentable if we just passed through to these new developments and abandoned the search for the therapeutic mechanism.”

In the New Year, Jeffrey Daskalakis will begin a pivotal research trial that will compare ECT against magnetic seizure therapy in 200 patients.

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That’s tomorrow.

Today Matt Damphouse calls his half-green, half-yellow porch a picture of his “insanity,” painted on a pre-ECT frenzied high. He didn’t have the energy to finish, he says.

Months have passed from that moment.

He says he's feeling okay now.

Matt's mother, Elaine, sees signs of comeback. Matt no longer answers questions in deadened monosyllables. He will initiate conversation. "We're driving and he'll say, 'Oh my gosh, did you see that?'"

There are parts of Matt that remain missing, lost. "We play Scrabble and he could always beat me with one hand tied behind his back and now he struggles to get the words," Elaine says.

Meanwhile, he takes a step forward and then a step back. He planned to spend a weekend socializing with friends, then cancelled because of intestinal problems.

Matt's ECT treatments continue. When last we spoke, he was preparing for his 20th treatment. The end of the story has not yet been written, or remains half-painted, like the green/yellow porch on the sweet two-bedroom bungalow.



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**JENNIFER WELLS** (front) is an award-winning feature writer at the Toronto Star. The recipient of two National Newspaper Awards, two gold National Magazine Awards and a National Business Book Award, Wells has reported on a diverse range of topics, from malaria in Peru, to American locomotive manufacture, to the extraction of conflict minerals in the Democratic Republic of the Congo. The mother of three sons, Wells lives in Toronto with her husband, Peter.

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**DIANA ZLOMISLJIC** (back) joined the Toronto Star in 2002. After spending several years working behind the scenes, culminating in her editorship of the Saturday Star, Zlomisljic returned to her first love, reporting, as a member of the paper's investigative team. She recently completed a three-month fellowship in Liberia where she worked for Journalists for Human Rights, a media non-governmental organization.

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