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# TRAUMA



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PALMER

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DANIEL PALMER



A NOVEL

**TRAUMA**

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*Critical Judgment*

*Miracle Cure*

*The Patient*

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*The Society*

MICHAEL PALMER

# TRAUMA

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*With great respect and admiration, Trauma is dedicated to Dr. David Grass of McLean, Virginia. This book would not have been possible without his dedication to the medical profession, his skill and experience as a practitioner, his imagination, and his support and contributions to this project from start to finish.*

*To say I couldn't have gotten here without him is an understatement.*

D.P.

# CHAPTER 1

It began, innocently enough, with a fall.

Beth Stillwell, a slight, thirty-five-year-old mother of three with kind eyes and an infectious laugh, was shopping at Thrifty Dollar Store with her kids in tow. She'd been stocking up on school supplies and home staples when she lost her balance and tumbled to the grimy linoleum floor. It was bad enough to have to shop at the dollar store, something new since her separation from her philandering husband of fifteen years. It was downright humiliating to be sprawled out on their floor, her leg bent in a painful angle beneath her.

Beth wasn't hurt, but as her six-year-old daughter Emily tried to help her stand, her left leg felt weak, almost rubbery. Leaning against a shelf stocked with cheap soap, Beth took a tentative step only to have the leg nearly buckle beneath her. She kept her balance, and after another awkward step, decided she could walk on it.

The strength in Beth's left leg mostly returned, but a slight stiffness and a disconcerting drag lingered for weeks. Beth's sister told her to see a doctor. Beth said she would, but it was an empty promise. Running a licensed day care out of her Jamaica Plain home, Beth was in charge of seven kids in addition to her own, and any downtime put tremendous strain on her limited finances. She rarely had time to make a phone call. But the leg was definitely a bother, and the lingering weakness was a constant worry. She occasionally stumbled, but the last straw was losing control of her urine while in charge of toddlers who could

hold their bladders better than she could. That drove her to the doctor.

An MRI confirmed a parasagittal tumor originating from the meninges with all the telltale characteristics of a typical meningioma: a brain tumor. The tumor was already big enough to compress brain tissue, interrupting the normal complex communication from neuron to neuron and causing a moderate degree of edema, swelling from the pressure on the brain's blood vessels.

Beth would need surgery to have it removed.

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Dr. Carrie Bryant stood in front of the viewbox, examining Beth Stillwell's MRI. A fourth-year neurosurgical resident rotating through Boston Community Hospital (BCH), she would be assisting chief resident Dr. Fred Michelson with Beth's surgery. The tumor pressed upon the top of the brain on the right side. Carrie could see exactly why Beth's left leg had gone into a focal seizure and why she'd lost control of her urine. It was not a particularly large mass, about walnut-sized, but its location was extremely problematic. If it were to grow, Beth would develop progressive spasticity in her leg and eventually lose bladder control completely.

Carrie absently rubbed her sore quadriceps while studying Beth's films. She had set a new personal best at yesterday's sprint distance triathlon, finally breaking the elusive ten-minute-mile pace during the run, and her body was letting her know she had pushed it too hard. Her swim and bike performance were shaky per usual, and all but guaranteed a finish in the bottom quartile for her age group—but at least she was out there, battling, doing her best to get her fitness level back to where it had been.

Carrie's choice to jump right into triathlons was perhaps not the wisest, but she never did anything half measure. She enjoyed pushing her body to new limits. She'd also used the race to raise more than a thou-

sand dollars for BCH: a tiny fraction of what was needed, but every bit helped.

BCH served the poor and uninsured. Carrie felt proud to be a part of that mission, but lack of funding was a constant frustration. In her opinion, the omnipotent budgeting committee relied too heavily on cheap labor to fill the budget gap, which explained why fourth- and fifth-year residents basically ran the show whenever they rotated through BCH. Attending physicians, those docs who had finished residency, were supposed to provide oversight, but they had too much work and too few resources to do the job.

If the constant budget shortfalls had a silver lining, it could be summed up in a single word: experience. With each BCH rotation the hours would be long, the demands exhausting, but Carrie never groaned or complained. She was getting the best opportunity to hone her skills.

Thank goodness Chambers University did its part to fund the storied health-care institution, which had trained some of Boston's most famous doctors, including the feared but revered Dr. Stanley Metcalf, staff neurosurgeon at the iconic White Memorial Hospital. For now, the doors to BCH were open, the lights on, and people like Beth Stillwell could get exceptional medical care even without exceptional insurance.

So far, Beth had been a model patient. She'd spent two days in the hospital, and in that time Carrie had had the pleasure of meeting both her sister and her children. Carrie prepped for Beth's surgery wondering when having a family of her own would fit into her hectic life. At twenty-nine, she had thought it might happen with Ian, her boyfriend of two years, but apparently her dedication to residency did not jibe with his vision of the relationship. She should have known when Ian began referring to his apartment as Carrie's "on-call room" that their union was headed for rocky times.

At half past eleven, Carrie was on her way to scrub when Dr. Michelson stopped her in the hallway.

“Two cases of acute lead poisoning just rolled in,” he announced.

Carrie smiled weakly at the dark humor: two gunshot victims needed the OR.

“We can do Miss Stillwell at five o’clock,” Michelson said. It was not a request. Working at one of New England’s busiest trauma hospitals meant that patients often got bumped for the crisis of the moment, and Dr. Michelson fully expected Carrie to accommodate him.

Carrie would have been fine with his demand regardless. Her social calendar had been a long string of empty boxes ever since Ian called things off. During the relationship vortex, Carrie had evidently neglected her apartment as well as her friends, and it would take time to get everything back to pre-Ian levels. Carrie agreed to move Beth’s surgery even though she had no real say in the matter.

The time change gave Carrie an opportunity to finish the rest of her rotations on the neurosurgical floor. She met with several different patients, and concluded her rounds with Leon Dixon, whom Dr. Metcalf had admitted as a private patient that morning. She would be assisting Dr. Metcalf with his surgery the next day.

Carrie entered Leon’s hospital room after knocking, and found a handsome black man propped up in his adjustable bed, drinking water through a straw. Leon was watching *Antiques Roadshow* with his wife, who sat in a chair pushed up against the bed. They were holding hands. Leon was in his early fifties, with a kind but weathered face.

“Hi, Leon, I’m Dr. Carrie Bryant. I’ll be assisting with your operation tomorrow. How you feeling today?”

“Pre—eh-eh-eh-eh.”

“I’m Phyllis, Leon’s wife. He’s feeling pretty crappy, is what he’s trying to say.”

Carrie shook hands with the attractive woman who had gone from being a wife to a caregiver in a matter of weeks. The heavy makeup around Phyllis’s tired eyes showed just how difficult those weeks had been. Carrie had yet to review Leon’s films, but was not surprised about

his speech problems; the chart said he'd presented aphasic. She doubted he'd stuttered before, but she was not going to embarrass him by asking.

"Leon, could you close your eyes and open your mouth for me?" Carrie asked.

Leon got his eyes shut, but his mouth stayed closed as well. Carrie sent a text message to Dr. Nugent in radiology. She wanted to look at his films, stat.

"He has a lot of trouble following instructions," Phyllis said as she brushed tears from her eyes. "Memory and temper problems, too."

*Something is going on in Leon's left temporal lobe, Carrie thought. Probably a tumor.*

Carrie observed other symptoms as well. The right side of Leon's face drooped slightly, and his right arm drifted down when he held out his arms in front of him with his eyes closed. His reflexes were heightened in the right arm and leg, and when Carrie scraped the sole of his right foot with the reflex hammer, his great toe extended up toward his face—a Babinski sign, indicating damage to the motor system represented on the left side of Leon's brain.

Carrie took hold of Leon's dry and calloused hand and looked him in the eye.

"Leon, we're going to do everything we can to make you feel better. I'm going to go look at your films now, and I'll see you tomorrow for your surgery." Carrie wrote her cell phone number on a piece of paper. Business cards were for after residency. "If you need anything, this is how to reach me," she said.

Carrie preferred not to cut the examination short, but a text from Dr. Robert Nugent said he'd delay his meeting for Carrie if she came now. Carrie was rushed herself. She needed to get to Beth Stillwell for her final pre-op consultation.

Dr. Nugent, a married father of two, was a competitive triathlete who had finished well ahead of Carrie in the last race they had done

together. Over the years, Carrie had learned that it paid to be friends with the radiologists for situations just like this, and nothing fostered camaraderie quite like the race circuit.

The radiology department was located in the bowels of BCH, in a windowless section of the Glantz Wing, but somehow Dr. Nugent appeared perpetually tan, even after the brutal New England winter.

“Thanks for making some time for me, Bob,” Carrie said. “Leon just materialized on my OR schedule and I haven’t gotten any background on him from Dr. Metcalf yet.”

Dr. Nugent shrugged. He knew all about Dr. Metcalf’s surprise patients. “Yeah, from what I was told, Dixon’s doctor is good friends with Metcalf.”

“Let me guess: Leon has no health insurance.”

“Bingo.”

Carrie chuckled and said, “Why am I not surprised?”

It was unusual to see a private patient at Community. Just about every patient was admitted through the emergency department and assigned to resident staff. Dr. Metcalf was known for his philanthropy, and when he rotated through Community he often took on cases he could not handle at White Memorial because of insurance issues.

All the residents looked forward to working with Dr. Metcalf, and Carrie’s peers had expressed jealousy more than once. Assisting Dr. Metcalf was the ultimate test of a resident’s skill, grace under the most extreme pressure. Dr. Metcalf had earned a reputation for being exacting and demanding, even a bully at times, but his approach paid off. He taught technique, didn’t assume total control, and was supremely patient with the less experienced surgeons. Like many world-class surgeons, Dr. Metcalf was sometimes tempestuous and always demanding, but Carrie was willing to take the bitter with the sweet if it helped with her career.

Dr. Nugent put Leon’s MRI films up on the viewbox.

“It’s most likely a grade three astrocytoma,” he said.

The irregular mass was 1.5 by 2 centimeters in size, located deep in the left temporal lobe and associated with frondlike edema. No doubt this was the cause of Leon's aphasic speech and confused behavior.

"So Dr. Metcalf's scheduled to take this one out tomorrow," Dr. Nugent said.

"As much as he can, anyway."

Dr. Nugent agreed.

Carrie was about to ask Dr. Nugent a question when she noticed the time. She was going to be late for the final pre-op consultation with Beth. *Damn*. There were never enough hours in the day.

Carrie made it to Beth's hospital room at four thirty and found the anesthesiologist already there. By the end of Carrie's consult, Beth looked teary-eyed.

"You'll be holding your children again in no time, trust me," Carrie assured her.

Even with her head newly shaved, Beth was a strikingly beautiful woman, young and vivacious. Despite Carrie's words of comfort, Beth did not look convinced.

"Just make sure I'll be all right, Dr. Bryant," Beth said. "I have to see my kids grow up."

At quarter to five, Beth was taken from the patient holding area to OR 15. Carrie had her mask, gown, and head covering already donned, and was in the scrub room, three minutes into her timed five-minute anatomical scrub, when Dr. Michelson showed up.

"How would you feel about doing the Stillwell case on your own?" he asked. "The attending went home for the day, and I got a guy with a brain hemorrhage who's going to be ART if I don't evacuate the clot and decompress the skull."

Carrie rolled her eyes at Michelson. She was not a big fan of some of the medical slang that was tossed around, and ART, an especially callous term, was an acronym for "approaching room temperature," a.k.a. dead.

“No problem on Stillwell,” Carrie said. Her heart jumped a little. She had never done an operation without the oversight of an attending or chief resident before.

Quick as the feeling came, Carrie’s nerves settled. She was an excellent surgeon with confidence in her abilities, and, if the hospital grapevine were to be believed, the staff’s next chief resident. It would certainly be a nice feather in her surgical cap, and helpful in securing a fellowship at the Cleveland Clinic after residency.

“Unfortunately, I’m going to need OR fifteen. Everything else is already booked,” Michelson said.

Carrie nodded. Par for the course at BCH. “Beth can wait,” she said.

“I checked the schedule for you. OR six or nine should be open in a couple of hours.”

Carrie did some quick calculations to make sure she could handle the Stillwell operation and still be rested enough to assist Dr. Metcalf with Leon’s operation in the morning. *Three to four hours, tops*, Carrie thought, *and Beth will be back in recovery.*

“No problem,” Carrie said. “I’ll let you scrub down and save the day.”

“Thanks, Doc Bryant,” Michelson said. “But you’re the real lifesaver here. I don’t think there’s another fourth year I’d trust with this operation.”

“Your faith in me inspires.”

Carrie did not mention the promise she’d made to Beth during her pre-op consultation. Michelson would not have approved. If one thing was certain about surgery, it was that nothing, no matter how routine or simple it seemed, was ever 100 percent guaranteed.

## CHAPTER 2

Carrie had met Beth again in the preoperative area, this time accompanied by Rosemary, a certified registered nurse anesthetist. While Carrie had never worked with Rosemary before, watching her insert the IV into Beth's arm made Carrie confident in the CRNA's ability. Rosemary gave Beth a light dose of midazolam, which decreased anxiety and would mercifully bring about amnesia. Some things were best not remembered, brain surgery among them.

Once in the OR, Rosemary got Beth connected to the monitors that tracked vitals. She delivered a dose of propofol to induce general anesthesia, followed by a push of succinylcholine to bring on temporary muscle paralysis. From that moment on, the endotracheal tube would do all the breathing for Beth.

Dr. Saleem Badami, originally from Bangalore, India, and a highly regarded intern, was to assist with the operation. This was really a one-person show, so Dr. Badami was there primarily to monitor Beth's neurological status during surgery.

The circulating nurse had painstakingly prepared the necessary equipment, including the Midas Rex drill, which Carrie would use to penetrate the skull and turn the flap. Last on the team was Valerie, a scrub nurse born in Haiti. A longtime vet of BCH, Valerie was one of the best scrub nurses on staff. As usual, Valerie looked in total command of her craft as she prepped her station for the upcoming operation. It

was Valerie who had introduced Carrie to the joys of listening to jazz while operating, and over the years the two had grown close.

If there was one drawback to working with Valerie, it was her unwavering commitment to finding Carrie a date. Beneath her surgical cap and scrubs, Carrie had luxurious brown hair down to her shoulders, almond-shaped brown eyes, enviably high cheekbones, and a body toned and muscled from hours of training. All that, combined with her intellect and outgoing personality, and Dr. Carrie Bryant was somebody's total package. Despite Carrie's repeated assurances that she was happily single, Valerie never failed to bring a list of eligible bachelors to surgery.

"His name is James, and he's some hotshot at a biotech startup in Cambridge. My mother knows his family."

"Thanks for the suggestion," Carrie said, checking over the equipment, "but today the only man I'm interested in is John Coltrane. Let's fire up the music, please."

Carrie waited for the first notes from "Out of this World," the first cut from *Coltrane (Deluxe Edition)*, to play before she picked up the scalpel and positioned it for the initial cut. The little stomach jitter that had been kicking around was gone. The first solo flight had to happen to everyone at some point, and today was her day.

*You've got this, Doc. You trained hard.*

Any and all distractions faded. Lingering thoughts of her ex-boyfriend, Valerie's biotech guy, and tomorrow's surgery with Dr. Metcalf were just ghosts in her consciousness. Her focus was intense. She loved being in the zone; this level of concentration was a rush like no other. Prior to surgery, Carrie had managed sundry pro forma tasks, those checklist items requiring no thought or decision. Following standard procedure, she had used Mayfield pins to secure Beth's head in three fixation points.

It was time to operate.

Carrie made the first scalp incision, expertly cutting the shape of a

large semicircle over the crown of Beth's shaved and immobilized skull. She paused to examine her work. It was a fine first cut, and Carrie was pleased with the results. The skin flap was certainly large enough.

The growth was sitting underneath the skull, originating from the meninges, the membrane that covers the brain. It was directly adjacent to the superior sagittal sinus, the major venous channel coursing between the brain's hemispheres. From what Carrie had seen in the MRI, the sinus appeared to be open. This was one of her chief concerns going in. If the tumor were adhering to the sinus, Carrie could do only a partial resection, which would mean Beth would need additional treatment, such as radiation therapy or another surgery.

*Why did you make that promise?*

It was probably seeing Beth's kids, especially little six-year-old Emily with her sweet toothy smile, that had clouded Carrie's better judgment. If the tumor were free from the sinus, the only treatment Beth would need would be careful follow-up to ensure no recurrence, and perhaps an anticonvulsant medication to reduce the risks of residual seizures.

Surgeons were not, in Carrie's opinion, like normal people. They were more like clutch shooters who took the ball with three seconds left and the basketball game on the line. Difficult times seemed to bring out the best in their cool. Sure, Carrie had sweated for just a bit at the start of the operation, but that was normal. Good, even. She was young, inexperienced, and it was smart for her to be cautious. Things could head south in a flash, but Carrie was not overly concerned. By the fourth year of residency, any surgeon who would cower in a decisive moment had been culled from the herd.

Carrie set to work placing the Raney clips around the margins of the retracted tissue to hold the scalp in place. The slim blue clips were atraumatic, designed to minimize injury and limit both bleeding and tissue damage.

Thirty minutes into surgery.

It took another fifteen minutes for Carrie to set all the clips in place. Now it was time for her to drill. Carrie held the high-speed stylus in her steady right hand and made four expertly placed burr holes on either side of the parasagittal sinus.

“Change the drill, please,” Carrie said.

The circulating nurse handed Carrie a different high-speed pneumatic drill, and she used that one to cut through the skull between the burr holes. Carrie took in a breath as she lifted the bone flap over the dura. She carefully handed the bone flap to Valerie for safekeeping until she was ready to reconstitute the skull after removing the tumor.

Valerie, being Valerie, anticipated Carrie wanting bone wax to control bleeding from the exposed skull margins.

*You’ve got a great team here,* Carrie thought.

Pausing, Carrie examined the dura, a thick membrane that is the outermost of the three layers of the meninges surrounding the brain, for any signs of damage. Using her gloved fingers, she carefully palpated the hard, solid tumor beneath. She judged the location of the growth to be perfect for resection, and then used cotton pledgets to tamp down the margins of the exposed dura.

Carrie was exceedingly careful with the pledgets, because too much traction on the dura might cause tugging on critical veins over the surface of the brain, which could result in bleeding. When the pledgets were properly positioned, Carrie was ready for her next incision, keeping in mind that she would cut one centimeter away from the tumor.

*One centimeter. Exact. Precise.*

Done. After her perfect cut, Carrie used the coagulator and Gelfoam sponges judiciously to control hemostasis and limit bleeding. And there it was, the tumor, sitting on the top of the brain, pressing down on the cortex that controlled Beth Stillwell’s leg and bladder. It was not too big, but it sure was ugly, and more vascular in appearance than she had expected from the MRI image. Thank goodness it was not adher-

ent to the sinus! Carrie could resect it cleanly. Still, the vascular supply was far more complex than she had predicted.

“James is a heck of a lot better-looking than that nasty thing,” Valerie said.

Carrie laughed lightly.

The time was 10:30 P.M. Beth had been in surgery for two and a half hours, a little bit longer than Carrie had anticipated, but not unusually long.

“Vitals?” Carrie asked.

“Looking fine,” Rosemary said.

*One hour and I’ll be done*, Carrie estimated.

Working with care, Carrie removed the tumor, along with the adherent patch of excised dura, which would be sent off to pathology for a frozen section. It did not appear malignant by gross inspection. She would want to be sure the margins were clean and there was no evidence of malignancy elsewhere. At this point, Carrie figured she could get to the on-call room by midnight and grab five or so hours of sleep before she needed to be back in the OR by seven o’clock the next morning for surgery with Dr. Metcalf.

*Ah, the glorious life of a doctor.* Her dad, an internist at Mass General, had warned Carrie about the rigors of residency, but his description paled in comparison with the real thing.

Carrie paused to examine her work once more. Something was beginning to bother her. The margins of the craniotomy looked to be oozing blood, much more than usual.

“More Gelfoam and four-by-fours.” Carrie’s voice sounded calm, but had a noticeable edge.

Valerie complied with speed. As Carrie dabbed away the bleeding, her whole body heated up beneath her surgical scrubs.

“Vitals?”

“Blood pressure stable at one hundred over seventy, normal sinus at ninety.”

*What the heck is happening?*

Carrie did everything she could to stanch the bleeding, but the oozing persisted. She started to worry.

*Why isn't Beth's blood clotting?*

Her pre-op labs had showed a normal coagulation profile. She should not be having this problem during surgery. *What is going on? Where is the bleeding coming from?*

From the beginning of her residency, Carrie had been taught to think on her feet, but her mind was drawing blanks.

*Think, dammit! Think!*

As if Dr. Metcalf were whispering in her ear, Carrie got the germ of an idea. She recalled a case from back in her internship year. A seventy-year-old woman undergoing a craniotomy for an anaplastic meningioma lost blood pressure during surgery and at the same time developed significant skin hemorrhages.

The body normally regulates blood flow by clotting to heal breaks on blood vessel walls, and after the bleeding stops it dissolves those clots to allow for regular blood flow. But some conditions cause the same clotting factors to become overactive, leading to excessive bleeding, as in the case of that seventy-year-old woman. Carrie recalled the outcome grimly.

Could it be DIC—disseminated intravascular coagulation—causing Beth's bleeding? A tissue factor associated with the tumor could be triggering the cascade of proteins and enzymes that regulate clotting. It was a rare complication of meningiomas, but it did happen, especially if the tumors were highly vascular like Beth's.

"Vitals?" Carrie asked again.

"Stable, Carrie."

Victims of DIC often suffered effects of vascular clotting throughout the body. Once the clotting factors were all used up, patients began to bleed, and bleed profusely—the skin, the GI tract, the kidneys and urinary system. DIC could be sudden and catastrophic.

“Get me a pro time/INR, APTT, CBC with platelet count, and fibrin split products,” Carrie ordered. “Saline, please. Rosemary, keep up her fluids.”

In a perfect world, Carrie would get a hematology consult pronto, but at such a late hour, nobody would be available. Valerie entered the lab test orders into the OR computer.

“Blood pressure is down a bit to one hundred systolic,” Rosemary said.

Carrie continued to control the bleeding at the tumor site as best she could. Now she was in the waiting game. Nobody spoke. Carrie asked Valerie to shut off the music, and the only sounds in the OR were the persistent noises of the monitors and the rhythmic breathing of the ventilator.

Fifteen minutes later Beth’s labs came back. Carrie was sponging away a fresh ooze of blood as Valerie read the results off the OR computer.

“Pro time and APTT markedly elevated,” Valerie said. “Platelets down to five thousand. Crit down to twenty-two percent—about half normal. Fibrin split products positive.”

*No doubt about it, Carrie thought, this is DIC.* Beth had been typed and crossed prior to surgery. Carrie ordered FFP, fresh frozen plasma, and a transfusion of packed red blood cells.

“Carrie,” Saleem said, his voice steeped in worry, “I’m seeing hemorrhagic lesions all over Beth’s arms.”

Carrie stopped sponging to examine Beth’s extremities. Sure enough, blood was pooling underneath the skin, forming ugly bruises marred by bumpy raised patches that looked like charcoaled burn marks. Carrie bit her lip as she cleared beads of perspiration from her brow with the back of her hand.

On paper, she had made no missteps. There was no way for her to have predicted this rare complication of a meningioma surgery. It was just the nature of how the tissue itself could react and explode in the

tightly regulated, complex coagulation homeostasis process. One small tip of the scale could have been enough to send the entire well-balanced system into complete disarray. The reduced hematocrit meant that Beth was bleeding internally as well—within her GI and urinary tracts, perhaps elsewhere. Sure enough, the indwelling Foley collecting bag was filling with blood-tinged urine.

“Give me two liters of normal saline.”

At this point, the FFP and PRBC were ready for transfusion.

“BP down to ninety over sixty. Pulse one twenty,” Rosemary announced.

Carrie took in the information, but she remained calm.

*I'm not going to let you die.*

At one o'clock in the morning, Carrie had another decision to make. Should she treat Beth with heparin, too? The drug could dramatically worsen the bleeding because it was a blood thinner, but on the other hand, Carrie remembered from her rotation on the medical service that heparin could help by preventing the clotting that caused the consumption of coagulation factors. In some DIC cases, a blood thinner could actually promote clotting. It was a crapshoot. Carrie had been right to give Beth a traditional treatment thus far, but her condition was again deteriorating, and rapidly.

“I want a heparin infusion, now.”

The words left Carrie's mouth before she realized she'd spoken them. Though her team was masked and gowned, Carrie had no trouble seeing the astonished looks on everyone's faces. Saleem hesitated, but Carrie barked the order again, and this time he jumped. Everyone held a collective breath as the drug was administered intravenously. Carrie kept a careful watch over the wound and continued to sponge away the bleeding. To her eye, the blood flow seemed to have lessened.

*Still not out of the woods. Not even close.*

All Carrie and her team could do now was contain the bleeding, keep

administering fluids, and pray the decision to use heparin was the right course of action.

At four o'clock in the morning, Beth finally seemed to be stabilizing. Her blood pressure had risen to 110/65. By that point, everyone in the OR was utterly exhausted, with Carrie in the worst shape of all. This was her patient—on her watch! Carrie's feet had swollen to the size of water balloons and her back strained against the tug of eight grueling hours spent standing.

Carrie ordered another set of labs. This time, while the FSP was still elevated, the PT and APTT were definitely showing signs of improvement. The bleeding looked better, too.

Valerie appeared stunned, as did Saleem.

"Carrie, whatever in the world inspired you to give this poor darling heparin?" Valerie asked.

Carrie was breathing as though she had just finished a sprint-distance tri. "Just a thought I had, I guess."

At five forty-five in the morning, Beth Stillwell was handed off from surgical to the medical and hematology teams in the ICU. Her DIC was still a problem and she would need much more intensive work to stabilize her, but the major bleeding seemed to be contained. Fifteen minutes later, Valerie and Beth were changing out of their bloodstained surgical scrubs in the women's locker room.

"She's going to make it because of you, because of what you did in there," Valerie said, brushing tears from her eyes.

Carrie had never seen Valerie cry before, and the sight set a lump in her throat. "But what's the quality of her survival going to be?" Carrie answered. "She bled a lot."

"Carrie Bryant, don't be so hard on yourself. If it had been any other doc in there, they wouldn't have ordered the heparin and we'd be having a very different conversation right now."

"Maybe."

Valerie turned fierce. “Don’t you maybe me, Dr. Bryant! You diagnosed DIC quick as you did, and correctly at that. Then treating her with heparin? Girl, in my humble opinion, you are a hero here. Real and true, and I want to give you a hug.”

Valerie opened her arms and Carrie fell into her embrace. The moment she did, the tears broke and would not stop for more than a minute. It had been such a long night. *I made a promise. . . .*

Carrie broke away from Valerie, but could not get the faces of Beth’s young daughters out of her mind. She took a moment to regain her composure, then checked the time on her phone. It was six fifteen in the morning. She was due back in the OR for the astrocytoma surgery with Dr. Metcalf in forty-five minutes.

“I’ve got to go break the news to Beth’s sister,” Carrie said, her chest filling with a heavy sadness.

The conversation would be briefer than the family deserved, but she’d page Dr. Michelson and make sure he could be there for follow-up questions. At this point, Carrie only had time to take a quick shower and wolf down a peanut-butter-and-jelly sandwich with a black coffee chaser outside the OR.

That was all the time she ever seemed to have.

## CHAPTER 3

Carrie arrived to scrub fifteen minutes late, expecting to see Dr. Stanley Metcalf already gowned and glowering. Next to medical incompetence, Dr. Metcalf despised tardiness most of all. She was surprised and more than a little relieved to discover he had yet to show up for Leon Dixon's brain surgery.

In addition to making sure the circulating and scrub nurses were at their stations and ready to go, it was Carrie's responsibility to get the patient prepped, properly positioned, and draped correctly. The only part of the pre-op routine Carrie did not oversee belonged to Dr. Lucas Fellows, the anesthesiologist, who would take care of getting the patient anesthetized and intubated. Surgeons and anesthesiologists did not always play nicely in the same sandbox, each guarding their turf with vigor.

Still, when it came time to put scalpel to skin, Dr. Metcalf was the general in charge. Most surgeons with a reputation like his came with a plus-sized ego. The man could be bombastic, often arrogant, always meticulous, and so demanding of his assistants that a healthy dose of fear was advisable for any underling assigned to him.

Despite his intimidating reputation, the advantages of working with Dr. Metcalf were undeniable. He offered the best opportunity for growth and learning, and for that alone, Carrie was grateful to be his foot soldier. But having incurred Dr. Metcalf's wrath once before, Carrie was glad to have a few extra minutes to set up the OR.

Still, she'd have to hurry.

Thinking of Beth, Carrie finished scrubbing in a daze. Breaking bad news was a part of the job, but that did not make the task any easier. Beth's sister, Amanda, had been told the surgery should not take longer than three hours, so she knew something had gone terribly wrong before Carrie set foot inside the waiting room.

"I'm sorry, but I have some bad news." Carrie had been taught to use that phrase, but still, there were few words a doctor despised saying more than those.

*I'm sorry . . .*

Valerie had accompanied Carrie into the cramped conference room where she had taken Amanda to consult with her in private. Because of Carrie's back-to-back surgeries, Valerie offered to hold the conference with Dr. Michelson instead, but Carrie believed the privilege of caring for sick people came with the added burden of being the messenger.

"Is she going to live?" Amanda had asked after Carrie finished.

Amanda was a sweet-faced woman, five years younger than Beth, and the strain in her kind eyes put a lump in Carrie's throat.

"We're doing everything possible to make sure that she does," Carrie said.

Amanda bit at her lower lip, but could not hold back the rush of tears in her eyes. In response, Carrie reached across the table and clutched the young woman's trembling hand.

"I'm so sorry, Amanda, we're doing everything we can. Please know that. I'm deeply sorry for what's happened here."

A single nod sent Valerie off to get Amanda some water. Carrie did her best to answer Amanda's many questions, though she suspected the young woman would retain little of it. Carrie spoke frankly but compassionately, and promised to follow up with the hematology team looking after Beth as soon as she could.

In the OR, prepping for the next patient, Carrie struggled to push

Amanda's tears, Beth's three children, and the complexity of Beth's case out of her mind. A man with a serious brain tumor was waiting for her in the OR, and he deserved her undivided attention.

Margaret, the circulating nurse, was on her first day at BCH, so she was shy and quiet as she assisted Carrie with her surgical gown and gloves. It was just as well. Carrie's guilt and exhaustion left her in no mood for small talk.

Scrubbed and gowned, Carrie entered the OR and headed straight to the viewbox. The films weren't there. She looked around and saw that X-ray had delivered them, but Margaret hadn't put them up, probably because she was new and nervous.

Though the task was the new nurse's, it was easier for Carrie to do it herself. Carrie grumbled under her breath as she removed the MRI image from the protective envelope.

*Dammit!*

The moment her gloved hand came in contact with the film, Carrie realized her mistake. She had broken scrub by touching a nonsterile object with her sterilized gloved hand. She'd have to go through the sterilization procedures all over again. It would mean being even more rushed during prep than she already was. Dr. Metcalf could arrive at any second, and if he did not see everything in pristine order, ready to drill, there would be serious fireworks.

For now, it was back to Leon's film.

Carrie had given him only a cursory examination previously, but she remembered that Leon had exhibited cognitive and behavioral problems, some muscular control issues, memory problems, and difficulty controlling his temper.

Carrie tossed the film up on the viewbox, a film she had seen only once before, briefly, in Dr. Nugent's office. That felt like a lifetime ago. Based on visual characteristics, the brain tumor was probably an astrocytoma, the most common form of tumor, but pathology would have to confirm. From what Carrie could see, the mass was not characteristic

of a systemic cancer, something that had metastasized to the brain. Good news for Leon. Still, she doubted it was a totally unsuspected abscess, something that surgery plus a prolonged course of antibiotics could essentially cure. Dr. Nugent had said something similar during his brief consult.

Regardless, it didn't do any good to speculate. They would sample the tissue, get the pathology report, and go from there.

Carrie saw that the mass was located deep in the temporal lobe. It looked angry, with a good deal of edema. Leon would most likely need additional surgery to debulk the tumor, followed by radiation and chemotherapy treatments. He might get a few more quality years before the tumor came back to take it all away.

Carrie's dry eyes ached from lack of sleep. At least this case would not be difficult for Dr. Metcalf, who had probably done a thousand of these procedures. She'd be home sometime after noon and asleep a few minutes after that. Assuming, of course, that Dr. Metcalf actually made it to surgery. Carrie had never worked a case before where he'd been so late, and she was beginning to wonder if he had the wrong date on his schedule. In an administrative behemoth like BCH, stranger things had happened.

Back at the sink, Carrie followed the proper protocol for the anatomical scrub, and had Margaret help her get gowned and gloved again. Precious minutes lost.

The scrub nurse, Sam Talbot, had done a fine job making sure the operating room was clean and ready for surgery. He had prepared the instruments and equipment and was double-checking his work when Carrie reentered the OR. Carrie was glad Talbot was on the ball so she could concentrate her efforts on Leon.

Leon was on the operating room table, already anesthetized and intubated. Dr. Lucas Fellows monitored vital signs and adjusted the combination of agents used to keep Leon in a state of blissful unconsciousness.

With Margaret's help, Carrie positioned Leon on his back, elevated

the head, and turned him toward his left side. Carrie prepped Leon's shaved skull using antiseptic Betadine that turned his dark skin orange. As Carrie finished with her final swab, the OR door swung open and Dr. Metcalf bounded in, fully scrubbed. Margaret, caught by surprise, shrank a little in his presence. A bear of a man with a full beard, broad shoulders, and a barrel chest, Dr. Metcalf struck an imposing figure in the operating room—or anyplace, for that matter. He held up his arms for Margaret to get him gowned and gloved.

“Sorry for the late arrival,” Dr. Metcalf said in his deep, rich baritone. “There was a rollover on I-95 and traffic was backed up for miles. I thought we might have to reschedule, but a friendly cop gave me an escort down the breakdown lane. I can't count the number of angry looks I got.”

Dr. Metcalf chuckled and Carrie felt at ease. He seemed to have already observed all of the hard work that had gone into surgical preparation and deemed it fit. He approached Leon and looked over his mask at Carrie, who was standing on the other side of the operating room table.

Dr. Metcalf's brown eyes narrowed. “Goodness, you look terrible, Carrie,” he said. “Are you feeling all right?”

Carrie nodded. “Tough operation last night, that's all,” she said. “I'm fine.”

The persistent throbbing behind Carrie's temple suggested otherwise, but she knew her limits. She could handle one more case.

*A few more hours . . . you can do it.*

Dr. Metcalf scanned the OR and chuckled again. “Forgot I'm not at White Memorial for a second there. I was looking for the NeuroStation.”

Carrie smiled behind her mask. A NeuroStation was a state-of-the-art workstation for localizing brain tumors using a frameless stereotactic system that gave surgeons an unprecedented view into the operative field while relaying the location of instruments to the preoperative

imaging data. It cost hundreds of thousands of dollars—well over a million when factoring in all the ancillary equipment. The fancy folks over at White Memorial could afford such luxuries, but BCH didn't have enough funding for such an extravagant expense.

“No worries,” Dr. Metcalf said. “I remember when we used to do these operations without a Midas Rex drill. Hell, the drill and bit set we used during *my* residency looked like something you'd pick up at Sears.”

Everyone laughed politely.

“All right, Dr. Bryant,” he said. “We'll be finished here in no time.”

## CHAPTER 4

Dr. Metcalf had made the semicircular incision in the temporal-parietal craniotomy site. He was so skilled, had so many years of training, he probably could have done the procedure blindfolded. Nothing was remarkable about his deft handling, except that Carrie could not recall him doing it. It had happened, of course. The skin flap was there, and Dr. Metcalf was busy setting the Raney clips in place, but somehow Carrie had no memory of him actually making the cut. It was like highway hypnosis, only in the OR.

Carrie's body burned with exhaustion that did not justify her lack of concentration. She had pulled plenty of long shifts without her performance suffering. Then again, she'd never been primary surgeon on an operation with serious complications.

Beneath her mask, Carrie gritted her teeth against an onslaught of memories—the blood that kept seeping, the blackened subdermal patches of clotted blood. Beth's operation was hours in the past. She needed to stop it from affecting her performance here and now. Adding to her burden, Carrie's back throbbed from fatigue. Her calf muscles were bowstring tight, and every two seconds she had to fight the urge to rub at her bleary eyes.

Carrie wondered if she'd ever be able to emulate Dr. Metcalf's level of discipline and focus. How did he never seem to tire, no matter how difficult the operation? One thing Carrie knew for certain: She would

need his Zen-like mastery of that particular skill to achieve all her professional goals.

“How about some Gelfoam here,” Dr. Metcalf said.

The command snapped Carrie out of her daze. She went to work on the incision area, using Avitene on a pledget and Gelfoam to stanch the bleeding.

“Drill.”

Sam Talbot placed the stainless steel handle of the Midas Rex pneumatic drill in Dr. Metcalf’s outstretched hand. The specialized air drill was designed to stop drilling as soon as the skull was penetrated, preventing injury to the brain. With enviable control and precision, Dr. Metcalf whistled a low and indistinct tune as he created the burr holes, each perfectly placed, one behind the standard key point, others located posteriorly in the temporal bone.

“Vitals?” Dr. Metcalf asked.

The anesthesiologist checked his monitors. “All fine,” Dr. Fellows said.

Dr. Metcalf switched to the footplate attachment and started at the temporal burr hole, cutting in a curvilinear fashion, until this region of bone could be removed. Carrie helped by stanching the annoying small bleeders that cropped up on occasion. Everything appeared to be going exactly as planned. Because Leon’s tumor was situated deep within the brain, and not a part of the meninges, the dura would have to be excised, which Dr. Metcalf did with great care.

Soon it was time to locate the actual source of Leon’s troubles. In the absence of the NeuroStation, Dr. Metcalf relied on the MRI film Carrie had put up on the viewbox to show him where to insert the needle probes. The needles were not really necessary, and Carrie knew Dr. Metcalf was using them for teaching purposes.

Carrie had done this procedure many times herself, but always under

careful supervision. Because Dr. Metcalf could not see the tumor, he used the probes to feel for subtle texture changes indicative of touching a growth. For guidance, he occasionally glanced at the MRI while advancing the needle. Carrie knew from her read of the film that the tumor site was approximately 3.5 centimeters deep within the temporal lobe, and Dr. Metcalf was probing in that exact spot.

Carrie watched him work, admiring his steady hand, calm concentration, when Beth again entered her thoughts. Seeing someone so close to her in age suffer like that was a stark reminder of her own good fortune. It was shameful that it took an incident in the OR to make her appreciate her many blessings: her career in medicine, the mentors like Dr. Metcalf who had helped bring her to this point, her family—and even Ian, for ending the relationship and giving her a chance to learn more about herself.

Dr. Metcalf advanced the probe a bit further, then paused. Lifting his head, he gave Carrie a curious stare—not a disapproving look, but something in his eyes looked nonplussed. He maneuvered the probe some more, but this time without a second glance at Carrie. The bleeders were typical for the surgery. No alarms for the patient's vitals, either.

It must have been nothing, because Metcalf removed the probes and was getting the bipolar coagulator and aspirator ready to go. It was time to get Leon's tumor out, or as much of it as they could.

Dr. Metcalf adjusted the frequency on the bipolar coagulator, an instrument with two electrical poles used to cauterize and remove tissue. The tissue here was soft and would require a lower frequency than something more fibrous. The disposable forceps with two small electrodes decreased risk of thrombosis formation, caused minimal tissue damage without suturing, and were effective at hemorrhage prevention.

Dr. Metcalf carefully advanced the bipolar coagulator through the

inferior temporal gyros, using a surgical aspirator, more crudely known as a “sucker,” to remove blood and fluids while taking away as little good brain tissue as possible.

*Should be at the tumor site any second now,* Carrie thought.

The sounds of machinery thrummed in Carrie’s ears as her anticipation grew. As Dr. Metcalf shifted his attention from Leon to the MRI image, a shadow crossed his face, and his furrowed brow put Carrie on edge. Focused again on the work site, Dr. Metcalf advanced the coagulator perhaps a centimeter more, then stopped. Carrie tried to read his expression. He was obviously anxious. Could it be another complication? Goodness, she had no stamina to endure another surgical mishap.

Dr. Metcalf adjusted a power setting on the frequency generator. A second later, the persistent hum of the bipolar coagulator came to an abrupt stop. The absence of sound filled the room.

Dr. Metcalf looked up and his eyes narrowed in a way that made Carrie shrink inside. “Carrie, I can’t find any abnormal tissue here, and I’m at the tumor site.”

A chill raced up Carrie’s spine.

*No . . . no . . . everything is fine . . . it’s not panic time . . . not yet . . .*

“Let’s take a closer look at the MRI,” Dr. Metcalf suggested.

Carrie followed Dr. Metcalf over to the viewbox and saw up close what she had observed from a distance. The mass was easy to spot in the medial temporal lobe. It was obvious Dr. Metcalf was seeing the same thing.

“What’s going on here?” he asked, mostly to himself. “Jesus, could this be the wrong patient?”

Carrie and Dr. Metcalf simultaneously looked down at the name on the film. As soon as Carrie saw the lettering, a jolt of horror ripped through her body and her breathing stopped. The name was correct, but the letters were reversed!

*Oh, God, Carrie thought. Oh my God, no. Please no!*

Grim-faced now, Dr. Metcalf let his arms fall limply to his side as he fixated on the text, disbelieving.

“Carrie, do you see this? The film was put up backward.”

Carrie staggered on her feet as the room began to spin. She had reversed the film. Following a backwards image, Carrie had set the patient up for an operation on the wrong side of his brain.

She flashed on her brief meeting with Leon, and it hit her. Not only did he have a droopy face, his reflexes were heightened in the right arm and leg, indicative of a left-side problem. But more telling was his speech. He had trouble saying simple words and had not been able to follow one of her commands; those were left-sided problems. If she had remembered, Carrie would have seen her mistake and clipped the image up properly.

*This can't be happening . . . this cannot be happening. . . .*

The shattered look in Dr. Metcalf's eyes cleaved Carrie's heart.

Leon, who already had damage to the left temporal lobe because of the mass, would now have additional damage to the right side of the brain where Dr. Metcalf had probed and removed completely viable brain tissue. It was all her fault.

Dr. Metcalf glowered at the new circulating nurse, Margaret, with venom in his eyes.

“What happened here? What the hell happened here? Don't you know how to read?” Dr. Metcalf's wrathful voice sent Margaret scurrying to a corner.

Dr. Fellows and Sam Talbot stared at each other in disbelief. Carrie took in a shaky breath, but could barely get a sip of air into her lungs. Her face felt flushed, burning hot, and soon the rest of her skin prickled with sweat as a sick feeling washed over her from head to toe. She opened her mouth to speak but at first no sound came out. Courage finally came to her.

“I put the MRI on the viewbox, not Margaret,” Carrie said. “It was my error.”

With that, she lowered her head and began a solemn march to the exit door.

## CHAPTER 5

By the time Steve Abington made his decision, the April sun had hit its midpoint for the day. Steve had hated Philadelphia since arriving there almost a year ago. It wasn't really any worse than Bridgeport, or Manhattan, or East Brunswick, or any of the other cities through which he'd passed. Maybe it was the homeless shelters in Philly that had gotten to him, or maybe it was just life itself.

Still, the Philadelphia shelters were an abomination. Steve hated being jammed inside an airless room with a hundred other misbegotten men. The stale stench of cigarette smoke escaping from the ratty fabric of soiled clothes. Rows of metallic bunk beds like those on a submarine topped with thin mattresses squirming with vermin, sometimes even live mice. Corroded showerheads on tiled walls caked with mold revolted him.

It was chaos, a constant chatter that grated on Steve's eardrums so he couldn't ever relax. Not for a second. Of course a shelter does not pretend to be a Holiday Inn, but with the reception area located behind reinforced glass, it felt like a country jail segregating the inmates from the cons. The drunks were the worst. Screaming, belligerent, and always getting hurt—either tripping over nothing or cracking their skulls on the concrete floor after tumbling out of bed. There was food, at least, breakfast and dinner. But tuna fish sandwiches most every day could make a man want to give up eating.

Steve preferred the streets.

Or he did until he was robbed.

They came at him in the middle of the night, four teenagers, while he slept on a heat vent, wrapped inside a threadbare blue blanket he'd fished out of a trash can. They came with pipes, steel rods, and a bat. They smashed the side of his face pretty good and throttled his leg, but the blows were meant to intimidate, not kill. They made off with his life savings—a few hundred dollars he had scraped together from change tossed in his jar and the occasional crinkled bill. The next morning the bruise on his cheek still stung, his leg felt a bit lame, and the vision in his eye where one of them managed to land a solid right hook was blurry. Could have been worse; he had shocked them when he fought back. Some skills get drilled into you so hard they become reflex.

Funny how just a few years ago Steve had a fancy uniform with plenty of eye-catching chest candy. He had a purpose in life. Now he had the streets and not much else. At least the little bastards didn't get his SIG Sauer, a trophy he'd snuck back from Afghanistan that was hidden at the bottom of an oily knapsack.

That gun meant the world to Steve. It was like a time machine. Soon as he gripped the cool steel handle he was right back in his CHU—containerized housing unit—on Forward Operating Base Eagle. In a lot of ways the CHU was a mirror of a Philly shelter. It was a crowded, noisy affair that smelled like a sweaty gym most of the time, but it had been home when he was Staff Sergeant Abington. He had felt at ease inside the chaotic womb, among his friends, his brothers in arms, the soldiers he would have given his life for. Back in the theater they had depended on each other. It was simple, pure, and in a way, beautiful. When he got home, the world stopped making sense.

But now Steve had made a decision. He had a new plan, a little flash of inspiration. He'd had enough of the streets, the shelters, the cold, and the beatings. He used to be somebody—a staff sergeant in the United States Army, a husband to Janine, a father to Olivia. They were phantoms now. Steve did not blame Janine for cutting him out of her

life. He had pushed her to it. She feared for their daughter's safety. He had threatened them, been violent at times, sober rarely, and a person could only take so much. No, he blamed the wound in his mind. Not a single drop of his blood had ever spilled in combat, but he was broken all the same. Injured with scars. Haunted.

All he could focus on was survival, and his needs were immediate and simple: Food. Shelter. Money. He had a plan to get those things.

## CHAPTER 6

The BCH conference room was nearly full. By quarter to eight in the morning, all but Knox Singer, the gray-haired CEO of Community, had arrived for the meeting. Carrie was sandwiched between Julie Stafford, the head nurse for 4C, the neurosurgical floor where Leon Dixon had stayed before surgery, and Emily Forrester, legal counsel for White Memorial Hospital. As part of her official residency at White Memorial, Carrie rotated through various satellite hospitals, including BCH. Her operating room mistake had dragged the neurosurgical departments of two organizations into this legal morass.

Sitting across from Carrie were Dr. Stanley Metcalf and Brandon Olyfson, the CEO of White Memorial. Olyfson was whippet-thin, with a long and narrow face, and hawkish eyes that made Carrie shrivel inside. There was coffee, of course, but the usual platters of donuts and pastries were absent, probably in deference to the gravity of the situation. No one was chatting; periodic, desultory sips of coffee were all that broke the silence.

Olyfson and Dr. Metcalf exchanged a few quiet words. Carrie was deeply unsettled by the tension on their faces. Her actions had not only injured a patient, but she had damaged the credibility of her hospital and the man whose skill and poise she had worked so tirelessly to emulate. Her failure was egregious. Unconscionable. Soon she'd hear it dissected in all its grotesque detail by the higher-ups at BCH and White Memorial.

Until a few hours ago, Carrie had been in the same scrubs she'd worn to Leon Dixon's surgery. Now she had on her most professional-looking outfit: a dark suit jacket, slacks, and a blue blouse. Carrie had returned home to her empty Brookline apartment; fed her goldfish, Limbic, named after a primitive memory circuit in the brain; and passed out on the futon, getting a fitful couple hours of sleep. She awoke mired in self-loathing and disbelief, and the pang in her heart confirmed it had really happened.

She did a reasonable job pulling herself together. After studying the spectral being she'd become in the bathroom mirror—her skin was moonlight pale, with dark circles ringing each eye, and her tousled hair stuck out in all directions—she'd swept her hair into a ponytail and figured they'd at least see she was suffering.

At two minutes past eight, the door to the conference room swung open. In strode Knox Singer, accompanied by Carla Mason, head of legal for BCH. Singer was all alpha male, tall and broad-shouldered, with a finely coiffed mane of silver hair and the swarthy good looks of a guy who made his living doing Cialis commercials. Mason was pint-sized by comparison, but her severe bangs, ramrod-straight back, and sharply tailored business suit seemed to add a few inches of height.

Emily Forrester grabbed a chair from against the wall and wheeled it over for Mason, while Singer took a seat at the head of the conference table.

"Sorry I'm late," Knox said in a rumbling low voice. His tone suggested this was the worst possible way to start his day. "Let me begin by saying this meeting is privileged. No minutes. The reputation of Community has to trump the glaring negligence from any member of its staff. So, tell me, Stan, what happened in there?"

Mason managed to get Knox Singer's attention, and she gave him a look he understood.

"Wait," Knox said, preempting Dr. Metcalf's response. "Do you want counsel, Stan? You can have it. Just say the word."

Dr. Metcalf sat stone-faced and issued no response. None was necessary. Everyone knew what this meant: There was no defense. As the attending physician, Dr. Metcalf was responsible for everything that happened in the OR, including the negligent actions of his first assistant.

Carrie sat rigid in her chair and felt a tight band pull across her chest. Her throat had gone Sahara dry, but she could not manage even a sip from the glass of ice water in front of her. They might be talking to Dr. Metcalf, but this meeting was about her. She fixed her gaze on her hands, which were clutched together in her lap. She needed to keep it together.

“Got it,” Knox said. “So I’ll ask again, and pardon my language, but what the fuck happened in there?”

Carrie lifted her head and somehow found the courage to look Knox in the eyes.

“It was my mistake,” she said. Her voice came out in a whisper, so she had to repeat herself. Louder. “I’m the one responsible.” Carrie pursed her lips against a sob, a few tears leaking down.

Julie Stafford’s nursing instincts kicked in, and she put a comforting arm around Carrie’s shaking shoulders. Gently, Julie eased the glass of water closer to Carrie and encouraged her to drink. Carrie couldn’t; she was nauseated with grief.

Knox appraised Carrie thoughtfully. He bore a sympathetic expression, as did about half of those seated at the table, with Dr. Metcalf being the most notable exception.

“How did this happen, Dr. Bryant?” Knox asked more mildly.

Carrie shook her head slowly, still in shock. On the occasions when Carrie checked her cell phone while driving, she tried to imagine what it would feel like to cause a traffic fatality, as a way of weaning herself from the habit. But now she knew. She knew exactly what it felt like. It was a sickening, horrible feeling she would not wish on anybody.

“I put the film up backward,” Carrie said, struggling with her voice.

“I should have known—I should have—Mr. Dixon was aphasic, his right side was weaker, he had a right Babinski. All the signs were there to remind me that the problem was in the left hemisphere, but somehow I just forgot. I guess I was tired from my last surgery, but I know that’s not an excuse, I know that. I’m so very sorry to everyone involved.”

Carrie braved eye contact with everyone at the table, desperate to convey her sincerity. Dr. Metcalf focused on his notepad as if refusing to look at Carrie somehow separated him from her and her mistake.

“Had you reviewed the film prior?” asked Sam Stern, the sixty-five-year-old chief of neurosurgery at Community. It was obvious he would try to shift the blame to another department, and radiology was as good a target as any.

Carrie swallowed hard. “I reviewed the MRI with Dr. Nugent the day before the surgery,” she said. “I’d seen the films, Sam. I have no excuse.”

The silence that followed lasted several seconds before Knox spoke up and broke the spell.

“Julie, what’s Mr. Dixon’s status?”

Julie Stafford had been head nurse on the neurosurgical floor for fifteen years, and a staff nurse at Community for fifteen years before that. She essentially ran the place. Jokes abounded about her supernatural ability to know everything that happened on her floor, even before it seemed to happen. It was a well-established fact that Nurse Stafford could make or break the career of any resident rotating through 4C with just a few choice words. But she’d always been good to Carrie; they shared the same work ethic and commitment.

“Mr. Dixon is stable,” Julie said. “But he’s mute and won’t follow any commands. Right now his wife and his brother are with him. They know what happened. Dr. Metcalf hasn’t been in to see him, though.” Dr. Metcalf shot Julie a stern look.

Carla Mason had been quietly taking notes and looked up over her glasses. “I’ve told him not to,” Carla said.

“I would like to go on record here and say a few words,” Julie said.

With a nod Knox gave his consent, and Julie spoke.

“I have worked with Carrie Bryant since the start of her residency, when her responsibilities were limited to doing mostly scut work at all hours of the day. Carrie, more than anyone, took the extra time to get to know her patients and families. I understand that she had been up all night operating on a complicated case. I spoke personally with Beth Stillwell’s sister, Amanda, who praised Carrie’s kindness and compassion. I’ve personally seen Dr. Metcalf tear apart residents for any delays that derailed his schedule, so I’m sure that played a role in Carrie rushing to get the OR set up right. Carrie made a terrible mistake. There’s no denying that fact, but she’s not the only culpable party.”

Dr. Metcalf made daggers with his eyes.

“I refuse to be intimidated by any doctor on staff, regardless of their stature here,” Julie continued. “In my opinion, I’m tired of the attending physicians using the hospital like a personal garage whenever a physician friend wanted a favor. Look, I sincerely appreciate our close relationship with White Memorial and the excellent doctors from there who otherwise wouldn’t be in a position to care for our city’s less fortunate. But perhaps if Dr. Metcalf deigned to venture up to 4C to see his patient before operating, or God forbid at least look at the MRI prior, none of this would have happened.”

A heavy silence ensued, and Carrie felt somewhat vindicated. Better procedures for double-checking should have been in place, and Carrie believed protocols would change as a result.

“Look, there’s really no issue here,” Carla Mason interjected.

As chief counsel for Community, Carla was directly responsible for malpractice cases like this one. Unfortunately, they seemed to be happening with greater and greater frequency. The majority of these cases were meritless, but the hospital continued to cough up millions in legal fees defending them, not to mention countless hours of deposition,

fact-finding, and copying records. The impact on productivity was now just a cost of doing business. For everyone involved, the expense of a lengthy trial was more than a matter of money; it was years of legal wrangling in terms of time, reputation, and emotional well-being. Carla tried to avoid the courtroom whenever possible, even for the most meritless claims—a strategy Knox Singer fully endorsed.

“The family will sue and the hospital will settle,” Carla said. “And the sooner this is done, the better. The last thing BCH and Chambers University need is something like this getting out to the press and the public.”

“Carla and I are meeting with the Dixons at eleven,” said Emily Forrester, the lawyer for White Memorial. “We will advise them to seek counsel immediately. Knox, I take it you’d agree to our informing the family that the hospital and university will offer a very generous settlement, and will assume responsibility for any upcoming and future medical care that the Dixons might require. I’ve already discussed this with Brandon, who concurs.”

Brandon Olyfson nodded. As CEO of White Memorial Hospital, he wanted out of this meeting, and quick. Olyfson thought of BCH as nothing more than a cesspool. Three-quarters of the patients were drunks or drugged out. No one had insurance. He could give a crap about Leon Dixon, Carrie believed. All that mattered to Olyfson was that Dr. Metcalf, his choice for the next chief of neurosurgery, was now a potential plague on the reputation of White Memorial Hospital.

“So, this Dixon guy. I mean, he was probably going to have problems regardless of any surgery, right?” Olyfson asked.

Dr. Metcalf became indignant. “Brandon, Mr. Dixon has a left temporal lobe tumor, most likely an astrocytoma. But of course, we don’t know that for certain now. His tumor may be aggressive, and if so, his prognosis wouldn’t be very good. Maybe a few years with radiation and chemotherapy. But just maybe, this could have been an abscess and potentially curable. The MRI isn’t definitive. It can’t distinguish between

an abscess and a tumor. But we can't operate on the other side until we know what damage we caused by this error."

"So was Mr. Dixon going to be compromised regardless?" Olyfson asked.

"The tumor might be less aggressive and potentially more amenable to adjunctive treatments than usual," Metcalf said. "One never really knows. Mr. Dixon was losing control of his speech. Now we've only added to his deficits. He may never speak another word. He may lose all his memory function. His behavior is likely to be very different. Hell, he could lose functional control of his sphincters for all we know. Bottom line is he will now be functionally dependent for the rest of his life, however long that's going to be. Considerably shorter, I suspect. We can do a simple biopsy of his tumor at some point, but because of the damage we've done, aggressive care won't be of any benefit."

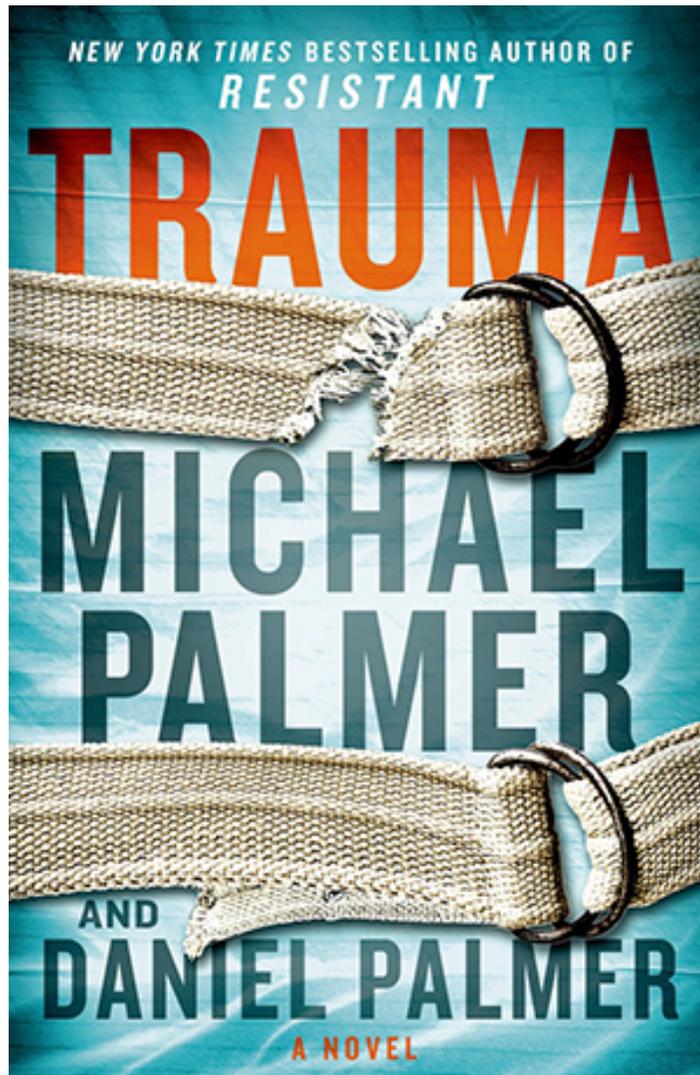
Carla Mason and Emily Forrester took copious notes, but Carrie looked only at her lap. She was finished. She sat silent, holding herself together by remaining as still as possible. But she couldn't stop the tears, which cascaded down her cheeks, dripping into her lap. Once again, Julie put an arm around Carrie to comfort her.

"It's going to be okay, sweetie," Julie whispered. "We'll get through this. I promise."

"Carrie, anything else you want to add?" Knox asked.

"Just that I'm tendering my resignation," Carrie said. "Effective immediately."

Thank you for pre-ordering *Trauma*!



Please enjoy the full novel when it's released on May 12, 2015.  
Learn more about *Trauma* by following Daniel Palmer:

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# A NOTE FROM DANIEL PALMER

Dear Readers:

Every September, after submitting his latest novel to St. Martin's Press, my father would immediately begin to brainstorm. What kind of story would he be sharing with his readers next? Autumn 2013 was no exception. Pop knew he wanted his twentieth thriller to return to the hospital setting that was the hallmark of his earlier works. The protagonist would be a young female resident who encounters a desperate patient with the repeated claim, "I don't belong here." The doctor begins to believe the patient, investigates, and soon descends into a labyrinth of murder and corruption.

Dad's next story was in place. Then, in October of 2013, my father died suddenly.

I don't know how long my dad would have kept writing. He had no plans to stop. He had journals and file folders filled with ideas. With each novel, my father aimed to deliver his very best because he cared deeply for his readers. When news broke of his passing, my inbox flooded with messages from fans around the world.

Even though he was a bestselling novelist published in over thirty languages, the business of writing was sometimes lonely for my dad. It meant blank pages, solitude, and deadlines. But something changed for him in 2009. That was the year I landed my first publishing contract.

I was working from home doing consulting and writing. My dad was at his office, too, some sixty miles to the south. I'd leave my iChat

application running all day so whenever Pop wanted a little face time, he could just dial me up online and there I'd be. Or me and his grandkids, or all of us plus his daughter-in-law. We would jawbone about plots until our fingers grew itchy to do some key tapping. I learned the craft of writing from my father during those long talks. Remembering them gave me confidence that I could run with his great premise for TRAUMA.

Working on the book proved to be a remarkable and deeply emotional journey. When the email from Dad's beloved editor Jennifer Enderlin came in accepting the manuscript, I said aloud, "We did it, Pop."

I can't replace my father; nobody can. But I can continue his legacy, and that's a thrill and an honor that leaves me humbled and incredibly grateful.

In friendship,

Daniel Palmer