

Chapter One

In the year his heart stopped, Dr. Zack Winston checked his watch as he headed to the ER suture room for his next patient. Four pm. *Two hours left.*

Strident blare from the EMS radio stopped him in mid-stride. His experienced ear caught the gist of the paramedics' report.

"Three minutes out . . . Full code . . . Fifty-two-year-old male . . . Seen in your ER yesterday."

Zack's heart plunged. *Who?* He turned from the suture area and hustled to the resuscitation room.

Paramedics burst through the doors, wheeling their patient on a narrow gurney. Zack recognized Carl Barnett, even with a plastic LMA tube protruding from his mouth. A medic squeezed air into the tube from a green football-shaped neoprene bag. Another medic straddled the gurney, performing vigorous chest compressions. Another held an IV bag aloft, its tubing plugged into a catheter in the patient's arm.

Carl's skin looked waxy, pale gray-blue, and mottled. He'd had a healthy pink complexion when Zack saw him in the ER the previous day.

A medic spoke into Zack's ear. "Wife found him in full arrest on the floor in their home. She's a nurse, doing good CPR when we arrived. No pulse or rhythm on scene or during transport. Down time at least twenty minutes. Unknown how long he went without CPR."

A strong grip on Zack's arm swung him into the florid face of Janice Barnett, Carl's wife, ICU head nurse.

"Do not lose him." Stern. A swallow. Softer voice. "Please."

"We'll, uh, do our best, Jan."

Zack followed the paramedics into the resuscitation room. The cardiac monitor showed a wavy horizontal line with an occasional bump that resembled an inverted U. Agonal rhythm. Dying heart.

Odds of save, zero to zilch.

Zack recalled a favorite saying: A thin line separates cardiopulmonary resuscitation from assault on the already dead. His gaze swept from the monitor to the patient. Carl Barnett, already dead.

From behind, Janice bumped into Zack, scowled, and moved to pass. He blocked her path. "You shouldn't be in here."

She flipped a frizz of frosted platinum hair off a sweat-dotted forehead. Hazel eyes pierced him. Her tone pleaded. "I must be with Carl."

Zack nodded to Monica Harris, ER head nurse. She steered Janice to a corner from where she could watch without interfering. Zack turned to his patient, his back to the man's wife.

Carl's skin color had not improved from arrival. The monitor displayed the same wide bumps, at a more ominous rate of thirty. Zack had never seen anyone recover from prolonged agonal rhythm; not to useful life. He started the protocol for managing pulseless electrical activity. *The algorithm*

for the already dead. Protocol. Routine. They needed an outlier, something to reverse the man's status from already dead to almost died. *When you hear hoofbeats, think horses not zebras.* Zack needed a zebra. "Continue CPR," he said. "Get the ultrasound machine."

Zack performed a quick cardiac ultrasound, looking for heart-wall motion, contractions—maybe a dilated right ventricle to suggest massive pulmonary embolism. Maybe cardiac tamponade. Zebra hunting. The test showed ineffective heart contractions, nothing more.

He recalled his interactions with the Barnetts the previous day. Fit and healthy, with no cardiac risk factors, Carl had come in with chest pain that began at rest. The pain had resolved in the ER without treatment. Zack had run a gamut of standard tests and calculated a low probability for acute heart disease. He had explained everything to Janice, whose subtle mistrust had never waned, even when she agreed to take her husband home. What had happened in the interim?

Zack could not accept defeat. He went off protocol and tried other medications. Atropine. High dose epinephrine. The entire arsenal.

"Asystole," a nurse said. An undulating line snaked across the EKG screen. No bumps.

"Respirations?" The tech paused the ventilator. A minute passed. No breaths. Zack felt over the carotid arteries in the neck. No pulse. He listened over the chest. No heartbeat.

He turned to look at Janice Barnett weeping in the corner. "He's gone," he said.

Tears ran down her face. "I know."

He looked at the clock. "Time of death, 1536." *Already dead, around 1425.*

Monica Harris seized Janice's arm and led her toward the door. "Let's go to the quiet room while the staff cleans up, then you can come back and say good-bye." Her grip tightened until Janice winced.

As the two women left the resus room, Zack froze. His feet refused to move. His mind lurched far away from the familiar milieu of Bethesda Metro Hospital ER. A young woman's body lay lifeless on an operating table in front of him. Blood ran down the sterile sheet and dripped onto his shoes.

He took a few seconds to return to the present, then headed to the suture room.

The patient told Zack that he had started drinking the previous night, got into a fight that he somewhat remembered, continued drinking, passed out, slept most of the day, and awakened an hour before coming to the ER.

"I need this fixed good, Doc. Got a job interview tomorrow."

In a calm voice, Zack explained that if the man had sought treatment soon after the injury happened, they could have cleaned and repaired the laceration with good results. "Too late for that," he said. "One-hundred-percent probability it's infected. If I suture it now, germs will get trapped inside and create an abscess that will get ugly. Best we can do is clean it up, put a dressing on it, and let it heal on its own. It's going to leave a scar. If that's a problem for you after it heals, you can get a plastic surgeon to fix it." *At a hefty price.*

Irate, the young man leaped off the gurney, pushed Zack aside, and stormed out of the suture area. “Just another fucking ER doc. I’ll go where I can get some real help.”

Straight to the nearest bar, Zack thought. Too bad about that job interview. He shrugged. Not the first time he’d been called a “JAFERD.” Many emergency physicians had withstood similar, or worse, cheap shots. On a popular ER docs’ social media site, a colleague had devised a counter-acronym: BAFERD (“Bad Ass Fucking ER Doc”), a badge-of-honor adopted by emergency physicians with multiple years on the front lines taking on the worst life-and-death battles, the most serious and unusual illnesses and injuries, suffered by a diverse cast of humanity; yet handling it all with aplomb and unimaginable self-esteem.

Back in the day, Zack Winston had considered himself a total BAFERD. *Now . . . ?*

Chapter Two

Heading to the main treatment area, Zack passed the resuscitation room. Janice Barnett stood by her husband’s body; Monica’s arm draped around her shoulder. The women didn’t notice Zack in the doorway. The staff had cleared out the post-resuscitation debris and had extinguished the bright lights. In natural lighting, covered to the neck by a clean sheet, with the ventilator tubing, monitor wires, and IV bags removed, the dead man appeared to sleep. Janice caressed his forehead and sobbed.

The scene caused Zack to back away as a surge of emotions threatened to suffocate him. Hyperventilating, heart galloping, skin clammy, he bolted from the department to the nearest men’s room, hit the first stall, and bowed to the commode. Dry heaves. Gasping, he knelt on the cool tile, collecting himself, easing his breaths, willing his rapid pulse to slow. Not his first visceral reaction to a failed resuscitation. He doubted that other emergency physicians suffered such symptoms. They hadn’t been to hell; not Zack Winston’s hell.

He forced himself to stand. Living patients awaited his care. Whatever he felt now, however related to past terror, must wait until he could be alone—for the sake of his patients and the ER staff.

At the sink, he saw Walter Knowles, unit secretary and perennial seer of the ER; a bearded, taciturn enigma who seemed to know everyone’s thoughts. He anticipated most requests before they were spoken. None of the current staff knew for sure when Walter had started working in the ER, or how old he might be. Steely eyes beneath bushy eyebrows scrutinized Zack. “You okay, Doc?”

Zack put on his game face. “I’m fine, Walt. Rough resuscitation.”

A conspiratorial half-smile. “Because of who it was?”

Zack shrugged.

“Good luck with that.”

Zack furrowed his brow. “Walt, can you please make a printout of Mr. Barnett’s ER record from yesterday? And today’s code record?”

“In your cubby by end of shift.”

Zack took deep breaths and headed back to the ER; once again the confident emergency physician, braced for the next patient, the next challenge, the next opportunity to touch another's life, ideally for better, not worse.

"God save us from emergency physicians!" The epithet greeted Zack when he returned to the main treatment area. He recognized the bombastic voice of Dr. Jeremiah Hartman, medical director of the ICU and chief of the medical staff. Hirsute, stout, and loud, he could verbally eviscerate the most confident of colleagues; and he didn't care about witnesses. Oblivious to the patients in the curtained cubicles lining his path, Hartman bore down on Zack like an eagle on a wounded gerbil.

"Did you not realize Carl Barnett was my patient?"

Concerned about confidentiality and his pending humiliation in earshot of patients and staff, Zack gestured toward the ER lounge. "Let's talk in private." He led his accuser into the room, shut the door, and turned to face him. "I did treat Carl. I noted you are his physician."

"Why the hell didn't you call me?" He barked as if Zack had stolen a favorite bone. No doubt his baritone voice projected to the treatment area.

Zack retreated a step. "No time. He was full code."

Hartman sneered. "You should have had someone contact me. I was in the ICU. Jan just called to tell me her husband is dead and she doesn't understand why."

"He arrived in non-survivable cardiac arrest."

"You should have summoned me."

Jerry and Janice were tight professional colleagues based on their complementary ICU roles. The hospital grapevine sometimes buzzed about a secret personal relationship. Zack didn't care. *Until now.*

"He was dead when he hit the door. No one could have saved him." Zack moved to leave the lounge. Patients needed him, and he had another hour to go before he could retreat to solitude and a bottle of Tuscan red at home.

The hound blocked his path. "We're not done."

Zack stopped. "What?"

"You saw Carl yesterday. Sent him out with acute coronary syndrome."

Zack folded his arms, squared his stance. "Not true. I did evaluate him yesterday. He came in with atypical chest pain and I ruled out cardiac etiology. HEART score was zero, including two negative troponins four hours apart. He was pain-free when I discharged him."

Hartman's voice dripped with contempt. "You had him in the ER four hours and didn't think to inform me?" The man could blow like an IED if not contained. Jerry Hartman had the political clout and authority to hurt Zack Winston.

Zack struggled to maintain a reasonable tone. “We don’t contact the private physician in all cases. We exercise clinical judgment. Most attendings appreciate not getting called every time one of their patients comes to the ER. I repeat, he was pain-free, without treatment, at discharge. I referred him to you for follow-up.”

Jerry moved closer, snorted into Zack’s face. “Yet he suffers a fatal cardiac arrest the next day? You missed something, *Doctor*.”

“No. I did not.” Zack reached for the doorknob.

Jerry stopped him. “This death was preventable. I will review the record. If I find a single discrepancy, you will answer for it.”

Zack scoffed. “Do what you wish. Now get out of my face.” He pushed past Jerry and returned to the main treatment area, ignoring the curious eyes looking for a cloud of smoke billowing from his rear. He bowed his head, picked up a chart, and scurried into the first cubicle. A distraught young woman, her face a paled question mark, held a crying infant in her arms. As the full brunt of Jerry Hartman’s assault unsettled his soul, Zack ignored his pounding heart, took a deep breath, smiled at the mother, and spoke in a reassuring voice. “I’m Dr. Winston. How can I help you?”

Chapter Three

Bridget Larsen fought a too-familiar battle in District of Columbia Superior Court. The judge, a tired-looking man in his early sixties, massaged his temples and spoke in a detached tone. “Ms. Larsen.”

“Thank you, Your Honor.” Bridget pushed back from the defense table, stood, buttoned her navy-blue suit jacket, and flipped her wavy blond hair over her shoulders. Seated next to her, Dr. Julie Dawson, a thirty-two-year-old emergency physician from George Washington University Hospital, gazed at her with anxious eyes.

In a stately walk toward the witness stand, Bridget smiled at Roger Meadows retaking the seat next to his client at the plaintiff’s table. “Just a few questions for the good doctor there,” she said as she made deliberate eye contact with as many jurors as possible. She paused in front of the jury box and faced the plaintiff’s expert-physician witness waiting to parry her cross-examination. Her eyes scanned his well-groomed appearance: salt-and-pepper hair with no errant strands, manicured fingernails, custom-fit charcoal suit with red silk tie, monogrammed shirt-cuff kissing a gold Rolex on his left wrist. She had observed his rich Italian footwear when he took the stand earlier. *Quintessential peacock doc*.

Confident of everyone’s attention, she addressed the witness. “Dr. Sanders, I’m Bridget Larsen, and I represent the defendant.” She gestured toward Dr. Dawson, pleased by the young physician’s demure pose in an off-the-rack half-size-large dark-gray suit, pale blue cotton blouse, absence of make-up, and dishwater brown hair drawn into a modest chignon—just as Bridget had coached her. *Unpretentious as a sparrow*.

“To summarize, in your opinion Dr. Dawson here missed classic EKG signs of ST elevation myocardial infarction, or ‘STEMI’ as it is called. Is that right?”

“As I stated to Mr. Meadows a few minutes ago.”

Bridget glanced at the jury. “In layman’s terms, you believe she missed a heart attack, right?”

The physician sneered. “She missed a heart attack.”

Bridget tugged on an ear lobe and turned toward the jury. “You further opined that George Watkins, the late husband of Mr. Meadows’ client, suffered wrongful death as the result of Dr. Dawson’s alleged misdiagnosis, right?”

The doctor scoffed. “As the result of her negligence, yes. She sent him home to die.”

Bridget wheeled toward the judge. “Move to strike that as speculative and prejudicial.”

“Sustained. The jury will disregard the witness’ response. Just answer the questions, Doctor.”

The physician turned to the judge. “Sorry, your honor. May I hear the question again?”

The court reporter repeated Bridget’s question.

The doctor harrumphed. “Yes.”

Bridget smirked. “Thank you for finally answering a question without your personal embellishment.”

Behind her, Roger Meadows, all sixty-four doughy inches of him, bounced to his feet. “Object!”

Bridget waved him off. “I’ll withdraw that.” She moved closer to the witness. “To be explicit, Doctor, you’ve rendered an opinion about the cause of Mr. Watkins’ death. You did not state an absolute fact, correct?”

The doctor folded his arms. “I have given my expert opinion based on training and years of experience, yes.”

“Could another emergency physician with similar training and experience have a different opinion?”

Meadows objected. “Calls for speculation.” He shot Bridget a sinister look.

“Sustained.”

Bridget shrugged. “Okay, then. Let’s review the relevant EKG together, to be sure I have it right.” She stepped to a large video monitor next to the witness stand, on the screen a magnified computerized EKG tracing. “Earlier, under questioning from Mr. Meadows, you pointed out details in this EKG that, in your opinion, confirm the diagnosis of STEMI.” She used a laser pointer to identify a segment of the tracing. “These elevated lines between the S and T waves, right?” She pointed to areas on the EKG representing single heartbeats.

“Yes.”

“In a normal EKG, you would expect those lines to stay even with the baseline, am I right?”

“Yes.”

She pointed to verbiage printed near the top of the EKG. “What’s this, Doctor?”

His voice spat impatience. “That’s the computer’s interpretation of the tracing.”

“Not an official reading by a trained cardiologist, right?”

“Correct. It’s an AI thing. They can be pretty accurate.”

Bridget furrowed her eyebrows. “AI thing? I don’t understand.”

The doctor huffed. “Artificial intelligence. The computer analyzes the tracing against programmed algorithms and comes up with a preliminary interpretation.”

“Got it. Thanks.” She looked at the jury. “Can you read that interpretation from your seat?”

“Sure. ‘Abnormal EKG. Unconfirmed. Cannot rule out anterior infarct.’”

Bridget nodded. “So, this artificial intelligence thing could not validate a STEMI, or heart attack, on this EKG?”

He waved a dismissive hand. “It’s a machine. EKG interpretation is an art. There are nuances, often esoteric and not relevant to this case.”

Bridget smiled toward the jury. “Too esoteric for us lawyers and laymen, eh?”

Roger Meadows jumped up. “Object. Badgering.”

“Sustained.”

Bridget cast a skeptical eye at the judge. She looked back at the jury. “I’ll restate it. To generalize for our slower minds, Dr. Sanders, sometimes a ‘normal’ EKG can have an elevated ST segment for reasons other than a heart attack, correct?”

The doctor crossed his arms. “Can have subtle nuances, yes.”

“Might other physicians reach different conclusions based on those subtle nuances, regardless of the computer’s analysis?”

The doctor stared at her. “Again, not applicable to this case, which is a straightforward misinterpretation of a pathological EKG.”

Bridget cocked her head. “No doubt about your interpretation?”

“None whatsoever.”

She turned back to the EKG. “Okay. I’d like to ask you about some other features on this tracing.” She led the doctor through several technical aspects of the EKG tracing, then pointed to a small wave on the EKG. “This little bump at the beginning of the elevated ST segment, what’s that called?”

The physician stared at her for a few seconds before answering. “J wave.”

“What other condition, besides STEMI, might demonstrate a J wave like this one?”

The man flushed. “Early repolarization, but this patient had STEMI.”

Bridget smiled, patronizing. “Early repol, as you ER docs call it, is a benign condition that can mimic STEMI, right?”

“Yes, but—”

“It’s not the same as a heart attack, right? No one dies from early repol, do they?”

“No.”

She paused for a few seconds, walked back toward the witness. “Dr. Sanders, do you know an academic emergency physician, Dr. Evan Reed?”

“I’ve heard of him.”

“He’s famous in your specialty, is he not?”

“He has a solid reputation.”

“Are you familiar with Dr. Reed’s study, published in the ANNALS OF EMERGENCY MEDICINE in 2013, wherein he describes a formula for differentiating early repolarization from STEMI?”

“No.”

Bridget squinted at him. “You do read medical journals, don’t you, Doctor?”

The man scowled. “Of course.”

Bridget smiled. “What if I tell you that the formula Dr. Reed derived in that study establishes, as independent predictor of early repol over STEMI, the same findings we just reviewed on this EKG; that a competent emergency physician, such as Dr. Dawson here, might correctly interpret that EKG as benign, non-life-threatening early repolarization, not STEMI. Not a heart attack?”

Meadows roared. “Objection. She’s testifying, and badgering.”

“Sustained. That’s enough, Ms. Larsen.”

Bridget raised her hands. “Sorry. Let’s move on.” She walked toward the jury. “Dr. Sanders, when did you last treat a patient in an ER?”

The man bristled. “I don’t work ER shifts anymore. I’m a consultant.”

Bridget lifted her eyebrows. “You don’t see patients? Since when?” Roger Meadows fidgeted behind her, but no objection came.

“Roughly five years.”

“Wow. How do you stay current in your profession? A lot could change in that time, right?”

“I read—” He stopped, catching himself.

“Medical journals?”

Shoulders slumped. “Yes.”

“Just not the ANNALS OF EMERGENCY MEDICINE.”

Roger Meadows yelled from his seat. "Objection."

"Sustained." The judge scowled at Bridget. "Wrap this up, Ms. Larsen."

"Yes, your honor." She stepped away from the doctor, turned to the jury. "What consulting do you do, Dr. Sanders?"

"Various projects, on request."

"Expert legal testimony?"

"I am in demand for that."

Bridget spun away from the jury and faced the witness. "Isn't it the only 'consulting' you do?"

The man looked away. "I support both plaintiff and defense attorneys."

"No other consulting beyond expert testimony?"

"No. I mean, yes, that's all I do."

She moved within two feet of him. "You get paid for your testimony, Doctor?"

"I receive remuneration for my time."

Bridget inched closer. "How expensive is your time, Doctor?"

"I devote many hours to researching the cases and preparing my testimony."

"But not—" She made a pretense of catching herself in mid-sentence. "Whoops. Almost mentioned ANNALS again."

She felt the judge's glare and turned to him.

"Thank you for your patience, Your Honor." She swung back to the jury. "And for yours, ladies and gentlemen. One final question for the 'expert' here."

She inspected him from head to toe. When she spoke, her voice rose in a steady crescendo. "That's an Armani suit, right? Custom-tailored shirt? Rolex watch? Gucci shoes? All paid for by remuneration for your precious time, Doctor?"

Meadows nearly toppled the table in front of him. "Objection!"