IN THE UNITED STATES DISTRICT COURT FOR THE
EASTERN DISTRICT OF VIRGINIA
Alexandria Division

APRIL ALLAN,	)	
	)	
Plaintiff,	)	
	)	
v.	)	1:18-cv-821 (LMB/MSN)
	)	
UNITED STATES OF AMERICA,	)	
	)	
Defendant.	)	

MEMORANDUM OPINION

April Allan ("Allan" or "plaintiff") brings this medical malpractice action against the United States of America (the "Government" or "defendant") under the Federal Tort Claims Act ("FTCA"), ch. 753, tit. IV, 60 Stat. 812, 842-47 (1946) (codified as amended at 28 U.S.C. §§ 2671-2680, 1346), claiming that her doctors at the U.S. Department of Defense-operated Fort Belvoir Community Hospital breached the standard of care during a total thyroidectomy she underwent as part of treatment for papillary thyroid carcinoma. She argues that as a result of this alleged malpractice, her left recurrent laryngeal nerve was transected, leaving her with total or near-total paralysis of both vocal folds, resulting in a compromised airway, tracheostomy dependence, and a number of other physical and personal problems. She also argues that during the surgery her doctors negligently removed or damaged her parathyroid glands to such an extent that she has permanent hypoparathyroidism. Although Allan claims that her damages substantially exceed Virginia's statutory limit for medical malpractice claims, she seeks an award of that $2.2 million limit for past and future medical expenses and nonpecuniary damages. In response, the Government argues that it is not liable to Allan because her doctors acted within

the applicable standard of care and that Allan's damages calculation is speculative, overinflated, and inconsistent with the evidence.

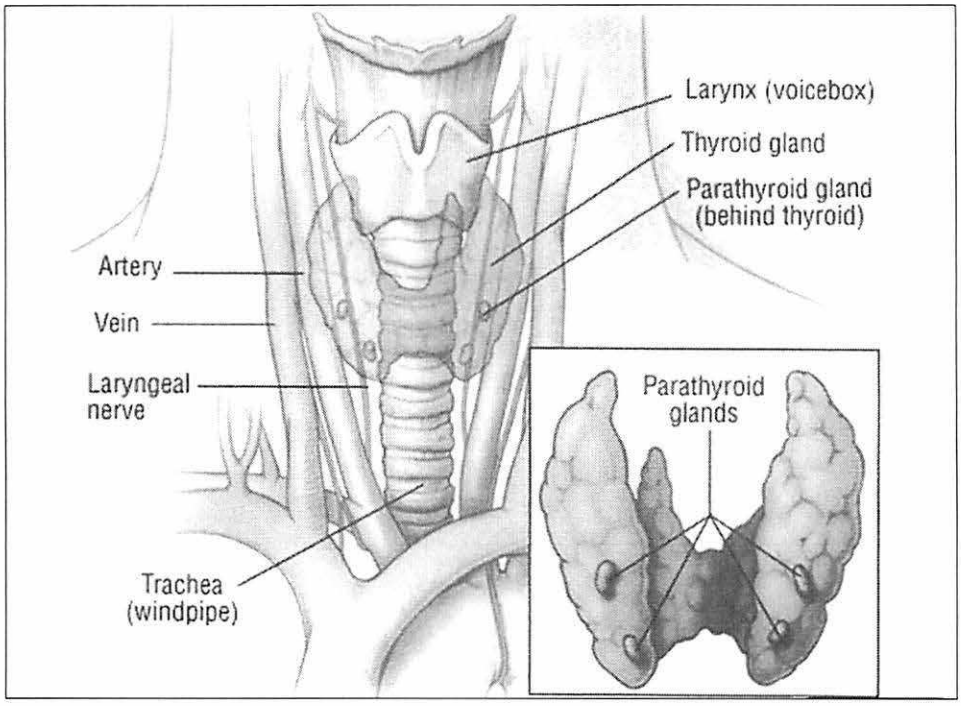
During a three-day bench trial, the Court heard testimony from five lay witnesses, including plaintiff and her husband, and from seven qualified experts. This Memorandum Opinion constitutes the Court's factual findings and legal conclusions. As detailed below, plaintiff has established by a preponderance of the evidence that defendant is liable to her in the amount of $2.2 million as a result of the malpractice committed by her doctors.

I. FACTUAL FINDINGS[1]

A. The Thyroid and Parathyroid Glands

As depicted below, the thyroid is a butterfly-shaped gland located in the neck in front of (or "anterior to") the larynx (colloquially known as the voice box) and the trachea (the windpipe). It is composed of two lobes lying on each side of the trachea, which are connected by a narrow strip of thyroid tissue known as the isthmus. The thyroid gland is rich with blood vessels and tends to be deep red or maroon in color. A key part of the body's endocrine system, the thyroid gland secretes several hormones essential for regulating metabolism and growth.

[1] "PLEX ___" refers to plaintiff's exhibits and "DEX ___" to defendant's. When a citation is to a condensed deposition transcript (that is, one with four deposition pages per sheet), the pincite refers to the consecutive page-by-page pagination of the transcript rather than the sheet-by-sheet pagination of the document. Unless otherwise stated, other page number references are to the Bates numbering, which can be found on the bottom right corner of plaintiff's exhibits or on the top left corner of most of defendant's exhibits (preceded by "ARMY").



PLEX 131.

Despite the apparent similarity in their names, the parathyroid glands differ from the thyroid in both appearance and function. Most people have four parathyroid glands, although some have as few as three and others have more than four. These glands secrete parathyroid hormone ("PTH"), which maintains the body's calcium and phosphorus levels. The parathyroid glands are small, typically the size of a large grain of rice or small bean, and are usually located directly behind the upper (or "superior") and lower (or "inferior") portions of the left and right thyroid lobes. See PLEX 131, supra (showing the parathyroid glands in the lower right-hand portion of the diagram). On occasion, one or more of the parathyroid glands may develop within the thyroid capsule itself. Although the parathyroid glands are difficult to locate by touch and often look like fat globules, they are distinguishable by their yellow or orange color and the presence of a blood supply.

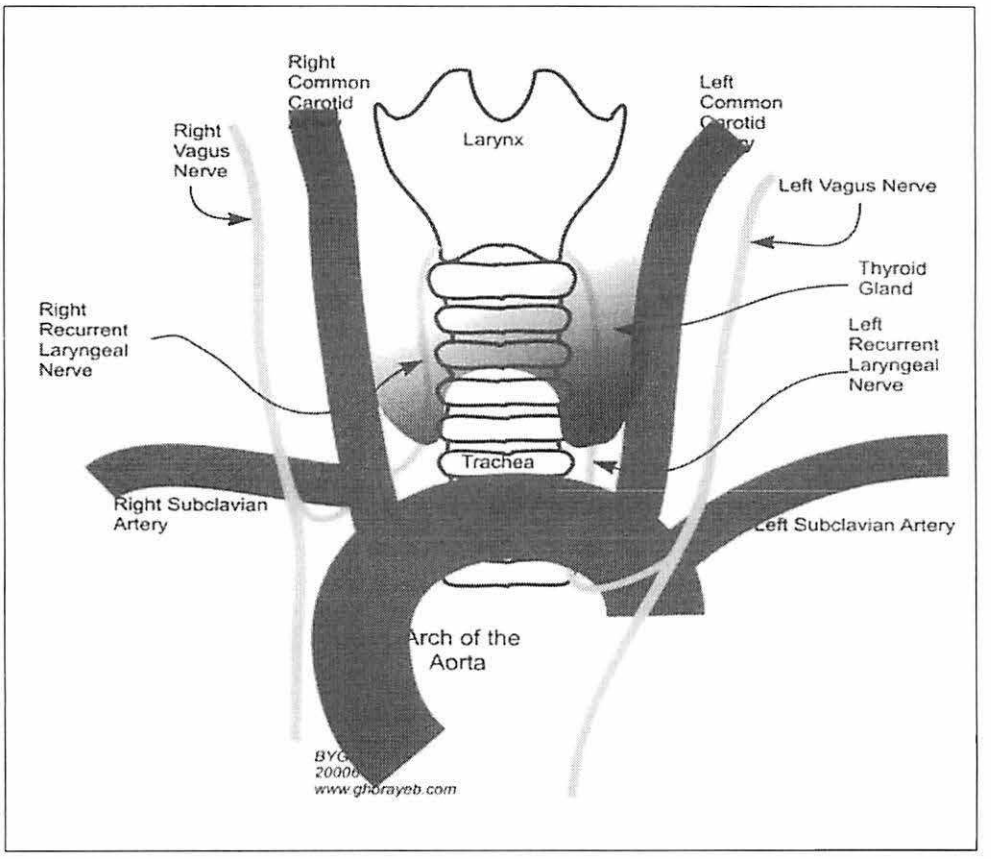
Parathyroid cells themselves are not susceptible to thyroid cancer; however, on occasion a parathyroid gland may become physically intertwined (or "involved") with extracapsular thyroid cancer cells. Additionally, parathyroid glands may become cut off from their blood supply (or "devascularized") either temporarily or permanently as a result of surgery or trauma in the neck. When devascularized, parathyroid glands tend to take on a duskier color and will no longer function properly. If a parathyroid gland is unintentionally devascularized or removed, it may be cut up and reimplanted into muscular tissue and will typically resume partial or total functioning once a new blood supply develops. Blood testing can provide accurate results in minutes indicating whether a patient's PTH levels are normal or deficient in the wake of surgery; these results can prompt surgeons to search for unintentionally removed or devascularized glands and to reimplant any such glands to prevent hypoparathyroidism.

The human body does not need all four parathyroid glands to maintain normal calcium and phosphorus levels. Normal levels can be maintained with as little as one or even one-half of one parathyroid gland. But if all parathyroid glands are removed or devascularized, the resulting condition of deficient PTH is known as hypoparathyroidism. Hypoparathyroidism may result in muscle cramping and fatigue and puts patients at heightened risk for developing osteoporosis or brittle bone disease, cardiovascular issues, and even calcification of the basal ganglia in the cerebrum. Hypoparathyroidism is typically treated with supplemental calcium and natural or synthetic vitamin D and requires ongoing monitoring to ensure that calcium and phosphorus levels remain within an acceptable range.

B. <u>The Recurrent Laryngeal Nerves</u>

The recurrent laryngeal nerves control most of the intrinsic muscles of the larynx, including the vocal folds, or cords, that operate a person's airway at the glottis and that vibrate to

produce speech. There are two such nerves, one located on the right and the other on the left side of the larynx behind the thyroid gland. The nerves are "recurrent" because they emanate from the brainstem as part of the vagus nerve and descend along the trachea before reversing direction and ascending past the thyroid into the larynx. As shown below:



PLEX 142. Injury to or transection of a recurrent laryngeal nerve can result in total or partial paresis or paralysis[2] of the corresponding vocal fold served by that nerve. Damage to both recurrent laryngeal nerves can lead to paralysis or paresis of both vocal folds (that is, "bilateral"

[2] "Paresis" refers to immobility that is temporary in nature, whereas "paralysis" refers to permanent immobility and is typically presumed after a year of constant paresis. Both paresis and paralysis may be "total," meaning that the object in question cannot move at all, or "partial," meaning that movement is restricted or compromised.

immobility), resulting in severe consequences such as difficulty breathing, speaking, and swallowing.

If the vocal fold immobility is severe, a tracheostomy may be required. A tracheostomy is a procedure in which an opening (or "stoma") is created in the neck to bypass upper portions of the airway. A tube is then inserted into the opening to facilitate breathing and to protect the trachea and lungs from aspirating foreign objects or irritants. A patient with a tracheostomy tube may elect to cap the tube entirely, allowing herself to breathe through the normal airway, or partially, as with a one-way Passy-Muir valve that opens when a patient inhales and closes when the patient exhales or speaks.

Because the recurrent laryngeal nerves are vital to breathing, swallowing, and speaking, surgeons operating in the neck must identify those nerves to minimize injury. There are several established ways of doing so. One way is by appearance: The recurrent laryngeal nerves are typically white, vertical, and roughly as thin as angel hair pasta (roughly 1-2 millimeters wide) and may be identified by a network of blood vessels on the outer surface of the nerve. Another way is through physical touch: Unlike arteries, the recurrent laryngeal nerves do not pulsate. Still another way is to identify the nerves by using an intraoperative nerve monitor: The structure believed to be a nerve is stimulated at low amperage with a handheld device known as a Prass probe, and the corresponding muscles are measured for response or electrical activity on a monitor. Because the recurrent laryngeal nerves are small, located behind the thyroid gland, and sometimes feature smaller offshoots, bifurcations, or branches, it is not always possible to identify the nerves with absolute certainty. Indeed, experts estimate that accidental transections or injuries to a recurrent laryngeal nerve occur somewhere in the range of 1-5% of thyroidectomies, and many of those accidents are due to misidentification of the nerve.

C. Thyroid Cancer and Surgery

Several types of cancer can affect thyroid tissue, the most common of which is papillary thyroid carcinoma. Papillary thyroid carcinoma is a differentiated and typically slow-moving (or "indolent") form of cancer that develops from follicular cells and is often limited to one side of the thyroid. Although usually contained within the thyroid gland itself, papillary thyroid carcinoma may sometimes breach the thyroid capsule and extend beyond the gland into the surrounding soft tissues of the neck (that is, become "extracapsular"), and may even involve the lymph nodes. Generally, a diagnosis of papillary thyroid carcinoma is associated with a very good prognosis because the affected thyroid tissue can be surgically removed and any remaining malignant cells can typically be destroyed (or "ablated") with postoperative radioactive iodine treatment.

Several surgical options are available to doctors treating thyroid cancer. Three are relevant here. The least invasive is known as a lobectomy or hemithyroidectomy, in which only one of the lobes of the thyroid is removed. On the other end of the spectrum is the total thyroidectomy, which involves removal of all of the thyroid tissue. Between these two extremes is a subtotal or near-total thyroidectomy, in which a small sliver of thyroid tissue is left behind, either to preserve thyroid function or to protect other important structures in the area. No matter the procedure, a patient who has had all or part of her thyroid gland removed will likely be prescribed hormone replacement therapy, which is generally effective in treating hypothyroidism and regulating the body's hormone levels.

D. Allan's Thyroid Cancer, Thyroidectomy, and Subsequent Treatment

Allan is a 37-year-old woman who, before her thyroid surgery, led a physically active life with few medical issues.[3] In 2005, she married Joshua Allan ("Mr. Allan"), an active-duty Navy servicemember, and the couple proceeded to have four children, two girls and two boys. Their oldest daughter is autistic, and their sons have attention-deficit/hyperactivity disorder. To ensure their children were receiving an appropriate education, the Allans opted for homeschooling. As a result, plaintiff has been both a housewife and a teacher.

1. Initial Imaging and Diagnosis

In early 2015, Allan underwent a magnetic resonance imaging ("MRI") scan for pituitary issues and was found to have "an enlarged thyroid gland." See PLEX 5, at 136. On May 16, 2015, she underwent an ultrasound scan of her neck, which revealed a 4.4-centimeter ("cm") mass in the area of her right thyroid. The scan also revealed a "0.5 cm left lobe nodule," which was less disconcerting than the mass on the right side. See id. at 138; Bench Trial Tr. [Dkt. Nos. 82-83] ("Tr.") 469 (indicating that the mass seemed to be "low risk" and unlikely to be malignant). On June 4, plaintiff underwent a computed tomography ("CT") scan of the area, which confirmed the presence of an approximately 4 cm "[i]rregular heterogeneous mass . . . extending posteriorly and . . . fairly extrinsic to the thyroid tissue" in her right thyroid lobe. PLEX 5, at 139-40. The CT scan could not confirm the small, half-centimeter nodule on the left lobe that had been visible on the ultrasound reading. See id. at 140. Based on the size of the

[3] In 2013, Allan was treated for anxiety and depression related to the deaths of her father and grandfather and ongoing issues related to her husband's infidelity. See DEX 67, at 805; DEX 155, at 71-72 (describing a visit in which Allan complained of symptoms of depression based on these issues). She was prescribed Zoloft to help deal with these symptoms.

mass in Allan's right lobe, the radiologist recommended consultation "with ENT[4] and/or endocrinology." Id.

Allan was referred to Dr. Caroline Kolb ("Dr. Kolb"), an attending otolaryngologist at Fort Belvoir Community Hospital ("Fort Belvoir"), which is operated by the U.S. Department of Defense to provide healthcare to military servicemembers and their families. When Dr. Kolb first saw Allan on June 15, 2015, she observed that Allan had no history of cancer and, despite the 4.4 cm mass in the right lobe of her thyroid, was not experiencing shortness of breath, difficulty swallowing, neck pain, or swollen glands. Dr. Kolb scheduled Allan for a fine needle aspiration ("FNA") biopsy to determine whether the mass was malignant.[5] Even before the FNA procedure had been performed, Dr. Kolb opined in her notes that Allan would likely have to undergo some sort of surgery, and she reported that Allan had requested a right lobectomy regardless of the results of the biopsy. See DEX 73, at 866 ("Either way, [patient] desires lobectomy.").

Dr. Kolb performed the FNA biopsy on June 18, 2015. Her notes reflect that Allan was anxious before the procedure and found it to be excruciating. When Allan's husband was called into the clinical room to comfort her, he observed her "hyperventilating, [with] blood streaming from her neck." PLEX 173, at 37. Despite those difficulties, Dr. Kolb was able to collect an

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[4] "ENT" stands for "ear, noise, and throat" and is a common nickname for the surgical subspecialty known as otolaryngology.

[5] In an FNA procedure, a local anesthetic is administered to the neck area and the physician inserts a fine needle through the skin to collect a tissue sample, using ultrasound to guide the needle. Physicians often perform multiple passes with the needle to ensure they have captured an appropriate specimen from all relevant parts of the mass. The tissues extracted from the neck are then sent to a laboratory for analysis.

adequate specimen. The laboratory results came back one week later and indicated that the sample tested positive for papillary thyroid carcinoma.[6]

2. Preoperative Consultations and Consent

Normally, either immediately after performing an FNA biopsy or at some point before a surgical procedure of the sort Allan was facing, Dr. Kolb would have performed a flexible fiberoptic laryngoscopy. In that procedure, a small flexible telescope is passed through the patient's nose down into the airway. Live imaging from the laryngoscopy allows the performing physician to examine the patient's airway and larynx to see whether the vocal folds are appropriately moving apart (that is, "abducting") to allow for the passage of air and coming together ("adducting") to assist with swallowing and sound production. Such a procedure is particularly useful where there is reason to believe that one or more of the vocal cords may be less than fully functional. In Allan's case, preoperative imaging studies indicated that the mass on her right side extended beyond the thyroid capsule into the area of the right recurrent laryngeal nerve, suggesting that her right vocal fold might be compromised. But Dr. Kolb did not perform a laryngoscopy on Allan at any point before her surgery. In Dr. Kolb's view, Allan's traumatic experience during the FNA biopsy had exacerbated preexisting anxiety and left Allan wary of additional procedures.[7] Given these concerns, Dr. Kolb decided to give Allan the choice of whether to have a laryngoscopy. Although the parties disagree about exactly what, if

[6] No FNA testing was done on the small nodule in Allan's left lobe. FNA is generally not a viable option for masses smaller than 1 cm.

[7] Dr. Kolb also explained that one of Allan's responses with respect to previous medical history and allergies—in which Allan noted that she had an allergy to morphine and that the morphine had caused "severe psychological issues," PLEX 72, at 855 (capitalization altered)—further convinced Dr. Kolb that a lighter touch was required.

anything, Dr. Kolb told Allan about the procedure before the surgery,[8] they agree that ultimately, no presurgical laryngoscopy was performed.

Dr. Kolb originally envisioned an August 2015 surgery date, explaining to Allan and her husband that the cancer was very slow-growing and did not present an immediate emergency. See PLEX 173, at 35-36. Allan and her husband were "shocked" that cancer would not require more immediate treatment and requested an earlier date. Id. Eventually, Dr. Kolb scheduled the surgery for July 21, 2015.

On July 7, 2015, Allan met with several endocrinologists, including Dr. Mohamed Shakir ("Dr. Shakir").[9] Her doctors agreed that based on the available evidence—particularly considering her age and the lack of evidence of any metastasis[10]—Allan's cancer was considered as "Stage I." See PLEX 71, at 853. Based on her preoperative scans and the results of her FNA biopsy, Allan's doctors recommended that she undergo a total thyroidectomy to be followed by postoperative radioactive iodine treatment. DEX 71, at 853. The doctors' notes indicate that they talked with Allan about "treatment for thyroid cancer" and discussed "[c]omplications . . . includ[ing] hypothyroidism, hypoparathyroidism, vocal cord paralysis, and perioperative death." Id. The notes do not indicate whether the doctors ever discussed the option of having a subtotal

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[8] Allan testified that she had no memory of Dr. Kolb's advising her about a flexible laryngoscopy before the surgery and that if she had known about the procedure, she would have consented to it. Although Dr. Kolb testified that she remembers discussing the matter with Allan, she did not record Allan's decision to decline the procedure in any of her medical notes.

[9] Endocrinologists are physicians who specialize in glands and the hormones they produce. Although endocrinologists are not surgeons, otolaryngologists frequently consult with endocrinologists before performing surgery on the thyroid gland.

[10] Cancerous cells that spread beyond the initial tumor, organ, or structure to nearby cells are known as "regional," whereas those that spread to distant parts of the body, typically through the bloodstream or lymphatic system, are known as "metastatic."

thyroidectomy or any other alternative procedure with Allan, but Dr. Shakir testified at trial that he considered a total thyroidectomy to be essentially an automatic recommendation given the parameters of Allan's case.

Allan saw Dr. Kolb again on July 17, 2015—four days before her total thyroidectomy was scheduled. Dr. Kolb's notes indicate that she spoke with Allan about the "risks, benefits, indications and alternatives" to the total thyroidectomy. DEX 70, at 844. Those risks included injury to the recurrent laryngeal nerves, hypocalcemia, airway obstruction, and the need for further surgery. Among the identified alternatives to surgery were observation, ablation (presumably with radioactive iodine treatment), and a hemi- rather than a total thyroidectomy.[11] Id. Dr. Kolb's notes record that Allan "expressed understanding of the counseling" she had provided "and desire[d] to proceed with surgery." Id.

On the same day, Allan signed a Request for Administration of Anesthesia and for Performance of Operations and Other Procedures. DEX 124. As originally typed out, the procedure described on the form was "[r]emoval of all or part of the thyroid gland"; however, Dr. Kolb struck out the words "or part" and initialed the change. The form advised Allan that the risks involved in her total thyroidectomy included "bleeding, infection, hematoma, seroma, airway compromise with [a] need for [a] tracheostomy, voice changes, nerve damage, low calcium, scarring, [a] need for thyroid replacement hormones and [a] need for further surgery." Id. Dr. Kolb signed the form indicating that she had "counseled [Allan] as to the nature of the proposed procedure(s), attendant risks involved, and expected result," and Allan signed the form

[11] During a hemithyroidectomy (or lobectomy), only one lobe of the thyroid is removed, with the other lobe left behind intact. A hemithyroidectomy is quite different from a subtotal thyroidectomy, in which only a sliver or sheath of thyroid tissue is left behind on one side.

indicating that she "underst[ood] the nature of the proposed procedure(s), attendant risks involved, and expected results." Id. Although Allan acknowledges that the form bears her signature, she claims she cannot remember whether Dr. Kolb actually administered any of the counseling mentioned on the form. For his part, Mr. Allan recalls learning that there were risks including "injuries to the vocal folds and to the nerves," but he also recalls being told that those injuries were "extremely unlikely to occur." PLEX 173, at 65.

3. The Total Thyroidectomy

Allan underwent surgery on July 21, 2015. Dr. Kolb served as the attending physician and was assisted by Dr. Ryan George ("Dr. George"), a chief resident in his fifth year who was approximately two months away from finishing his residency. Dr. George had not treated Allan before the surgery; in fact, no witness who testified at trial could say with certainty whether Dr. George had even met Allan beforehand. At the time of Allan's procedure, Dr. Kolb had performed approximately 160 thyroidectomies—40 as the primary or attending physician—and Dr. George had assisted as a resident on roughly 60 such procedures.[12] Although Dr. Kolb had not worked with Dr. George on a thyroidectomy before, Dr. Kolb spoke with another attending physician who had and was told Dr. George had "excellent hands" and was adept at complex surgeries. Tr. 417.

The surgery began on the right lobe of the thyroid, which was the side containing the large mass believed to be cancerous. Dr. Kolb took the lead role and the scalpel, with Dr. George assisting as needed. As Dr. Kolb began to dissect around the right lobe, it became clear that the cancerous nodule had reached beyond "the posterior inferior aspect of the gland

[12] It is unclear whether Dr. George acted as the lead surgeon during any portion of those 60 previous thyroidectomies.

and was extending into the paratracheal space." PLEX 9, at 17. As the dissection continued, Drs. Kolb and George observed that the mass was "grossly invading" the right recurrent laryngeal nerve. Id. Dr. Kolb attempted to remove as much of the mass as possible while preserving the right nerve; she even carved into the surface of the nerve in a few locations to remove cancerous cells. Ultimately, to preserve the nerve's functioning, Dr. Kolb left behind trace amounts of cancerous cells embedded in the nerve, believing that these could be effectively destroyed with postoperative radioactive iodine treatment. Dr. Kolb also decided to remove the right inferior parathyroid gland because it was "grossly involved with [the] tumor." Id. at 16.

Dr. Kolb testified at trial that at this point in the surgery, it would have been her practice to stimulate the right recurrent laryngeal nerve with a Prass probe to gauge whether it was functioning and to examine the removed tissue to see whether any additional parathyroid glands had been inadvertently removed during the dissection. Yet Dr. Kolb had no specific memory of actually following that practice in Allan's case, and neither of those actions was recorded in the operative report.

When the doctors switched to the left side of the thyroid, Dr. George took over the actual surgery, with Dr. Kolb performing a supervisory role. After the left thyroid capsule had been exposed, Dr. George tried to locate the left recurrent laryngeal nerve. He identified "a structure consistent with the . . . nerve" based on its appearance and location. PLEX 9, at 17. He stimulated that structure at low amperage with the Prass probe, and it responded. Believing he had located the nerve, Dr. George proceeded to attempt to dissect the left thyroid lobe. During that dissection, Dr. Kolb noticed something alarming: a nerve-like structure with what appeared to be a cleanly cut end. Dr. Kolb took over for Dr. George and quickly discovered that he had transected the left recurrent laryngeal nerve. Once the transected ends and remaining structure of

the left nerve had been identified, Dr. Kolb removed the remainder of the left lobe and preserved the specimen for the postoperative biopsy. She then attempted microscopic reconnection (or "reanastomosis") of the nerve—a procedure she had never attempted before. The attempted reanastomosis was unsuccessful, even though the operative report written by Dr. George and signed by Dr. Kolb describes the nerve as having been "repaired" with nylon sutures, see id.

Dr. Kolb performed a few final tests before the surgery was complete. First, she stimulated both recurrent laryngeal nerves with the Prass probe. The right nerve returned a "weak" signal. PLEX 9, at 17. The left nerve did not respond at all. Dr. Kolb closed the incision, removed Allan's breathing tube, and performed a flexible laryngoscopy, during which she observed "significant vocal cord edema"—that is, swelling—"and minimal vocal fold movement." Id. Dr. Kolb wanted "to give [Allan] time for [the] edema to resolve to prevent a possible need for [a] tracheostomy." Id. Accordingly, she opted for reintubation—that is, she reinserted the endotracheal tube to assist Allan's breathing—and transferred Allan to the intensive care unit ("ICU").

During her postoperative visit with Allan's family, Dr. Kolb explained that Dr. George had accidentally transected Allan's left recurrent laryngeal nerve during the procedure. See PLEX 173, at 39-40. Mr. Allan recalls Dr. Kolb expressing that she was "very sorry" about what had happened, that she "felt responsible," and that she had spent hours trying to repair the transected nerve in vain. Id. at 40. Dr. Kolb also told Allan's family that in light of the trauma to the right nerve and the transection of the left nerve, Allan might have difficulty breathing and swallowing and would be kept in the ICU overnight for observation. Id. at 42.

The tissue removed during the thyroidectomy was sent to the laboratory for examination, and the results were returned a few days later. The final diagnosis confirmed what the

preoperative tests had indicated: Allan's right thyroid lobe had contained an approximately 3- to 4 cm mass of papillary carcinoma of the "classical" variant. PLEX 10, at 100. The carcinoma was classified as "pT4a." Id. at 101. The "p" refers to "papillary," the most common form of thyroid cancer, and "T4a" to a tumor "extending beyond the thyroid capsule to invade subcutaneous soft tissues, larynx, trachea, esophagus, or recurrent laryngeal nerve." PLEX 152, at 89 (seventh edition of the American Joint Committee on Cancer's ("AJCC") Cancer Staging Manual). Because plaintiff's cancer was papillary and because she was under 45, her cancer was classified as "Stage I"—the most favorable prognostic group. Id.; see also id. at 90 fig.8.1 (showing five-year observed and relative survival rates by stage). Although the cancerous mass had extended beyond the thyroid capsule "extensive[ly]," there was no evidence of lymphatic invasion or metastasis. See PLEX 10, at 100.

The postoperative biopsy also revealed that the sample contained two parathyroid glands, indicating that Drs. Kolb and George had unintentionally removed a second gland at an unknown point in the procedure. Dr. Kolb was unaware of a second removed gland and could not explain at what stage it had been removed. After the surgery, Allan's PTH levels—which had been normal before the operation—plummeted to hypoparathyroidal levels, indicating that all of her parathyroid glands had either been removed or critically damaged as a result of the surgery.

4. The First Tracheostomy

Once Allan was brought out of general anesthesia, her endotracheal tube was removed, and Dr. Kolb performed a flexible laryngoscopy to examine Allan's vocal folds, which were swollen and immobile. Dr. Kolb determined that a tracheostomy was necessary to "safely maintain [Allan's] airway." PLEX 11, at 66. Because Allan was still unconscious, Dr. Kolb obtained consent from Mr. Allan and performed the tracheostomy. Id.

Nearly 24 hours after surgery, Allan was finally revived. She described being horrified by her postoperative condition. See Tr. 259 ("I thought I was dead."). Her arms were tied to the side of her bed, she felt severe pain, and she had a tracheostomy. Allan recalls a "revolving door of doctors," id., coming into her room to apologize for what had happened during the surgery. Among those doctors was Dr. Kolb but not Dr. George, who had been instructed not to visit plaintiff's recovery room.

A speech pathologist who examined Allan later in the afternoon on July 22, 2015 observed that Allan was noticeably "anxious" and concerned about her tracheostomy. PLEX 12, at 76; see also DEX 67, at 804 (reporting that Allan was "experienc[ing] some panic-like symptoms" related to her inability to breathe freely and speak clearly). Initially, she could communicate only "by mouthing words and sentences." Id. The speech pathologist placed a Passy-Muir valve—essentially a one-way valve that opens upon inhalation and closes upon exhalation or speaking—in her tracheostomy, which enabled her to speak, albeit "with hoarse, breathy vocal quality [and] reduced vocal intensity at the sentence level." Id. But the Passy-Muir valve also "resulted in [an] increase in spontaneous swallows," and after eight minutes Allan asked that it be removed so she could rest. Id.

Dr. Kolb next saw Allan on July 28, 2015, a week after her surgery and the same day Allan was finally discharged. Dr. Kolb observed that Allan was "less breathy" and had "started to get her voice back" but remained in "acute distress." PLEX 14, at 186. She also observed that the site of Allan's tracheostomy was exhibiting "wound breakdown" and had "granulation tissue," which is painful connective tissue and blood vessels that form on the surface of a wound, often requiring cauterization with silver nitrate. Id. at 187. A flexible laryngoscopy showed that Allan's vocal folds were "abnormal." Id. The right fold featured only "small movements on

adduction" with "minimal abduction," indicating that although the right nerve was "intact," it was "stunned." Id. Allan's left fold, on the other hand, was in a state of "total paresis." Id. As a result, Dr. Kolb concluded that Allan had bilateral vocal fold paresis and "d[id] not recommend removal of [the] trach[eostomy]" at that time. Id.

On August 11, 2015, Allan saw Dr. Kolb and reported that her vocal volume was improving; that she had kept her tracheostomy capped, or closed, since her last visit; that her wound was healing well; and that she was experiencing "[n]o difficulty breathing, even with climbing stairs." PLEX 17, at 206. Although Dr. Kolb observed, after having performed a flexible laryngoscopy, that Allan's right vocal fold still had "minimal abduction" and that her left fold "remain[ed] paretic," id. at 207, Dr. Kolb felt that Allan's physical symptoms were encouraging and agreed with Allan's request to have the tracheostomy removed. During a follow-up visit a week later, Dr. Kolb recorded that the tracheostomy wound was healing nicely and that Allan overall was "doing very well," with "[n]o difficulty breathing, even with climbing stairs." DEX 58, at 738.[13]

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[13] In early September 2015, Allan underwent radioactive iodine treatment to destroy any remaining microscopic cancer cells that had not been removed during the thyroidectomy. As a result of the treatment, Allan experienced side effects including dry mouth, nausea, and swollen salivary glands. Those side effects are not relevant to this litigation.

Later that month, Allan began experiencing vocal fatigue and difficulty swallowing. She saw Dr. Michael Orestes ("Dr. Orestes"), another otolaryngologist, to address those issues. Dr. Orestes observed that Allan's tracheostomy site was well healed and that her right vocal cord was exhibiting some movement, which in his view suggested a good prognosis for recovery. Dr. Orestes's records do not reflect that he provided Allan any treatment for her vocal or swallowing issues. A few days later Allan saw a speech pathologist and discussed strategies for dealing with vocal fatigue, which was preventing her from engaging in routine tasks such as reading to her children. PLEX 23, at 257.

Plaintiff returned to the hospital in mid-October 2015 to be treated for streptococcal pharyngitis. PLEX 24. That same day, she also saw Dr. Kolb and reported that she was experiencing "intermittent episodes of pain" and "tightness with swallowing." PLEX 25, at 268. Dr. Kolb's notes reflect that plaintiff was also hypoparathyroidal, meaning that her body was not producing

5. Cordotomy and Second Tracheostomy

It is not uncommon, after a total thyroidectomy or injury to a recurrent laryngeal nerve, for a patient's vocal fold functioning to change in the weeks or months following surgery. In Allan's case, her functioning worsened, and she began having increased difficulty breathing.

Allan saw another otolaryngologist, Dr. Orestes, on January 28, 2016, complaining of shortness of breath, labored breathing after physical efforts, and "loud snoring [and] apnea symptoms at night." PLEX 26, at 309. Dr. Orestes led Allan through a series of tests, including a controlled exercise test on a treadmill, during which he observed that her breathing became labored and marked with stridor. Id. at 310-11. Dr. Orestes concluded that as a result of Allan's "bilateral vocal fold paralysis following [her] thyroidectomy," it was "[l]ikely" that her "maximum glottic aperature [sic]"—that is, the opening between her vocal folds—"does not support exercises due to [her] lack of ability to take in air." Id. at 311. He also opined that this glottic restriction was "likely contributing to her new onset sleep apnea." Id. Dr. Orestes recommended that Allan undergo a sleep study and discussed other potential treatment options, informing Allan that some of those procedures would "require a temporary tracheostomy." Id. On February 3, 2016, Allan underwent a home sleep study and was diagnosed with obstructive sleep apnea. PLEX 28, at 325. Allan's breathing and sleeping issues continued throughout the month of February 2016 and, as of early March, she was increasingly "concerned about not being able to breathe." DEX 49, at 600.

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an adequate amount of PTH, but that her breathing remained normal, without any "stridor or wheezing." Id. at 269-71. Dr. Kolb's "[o]verall" impression was that Allan was "doing very well." Id. at 269.

Because of her difficulty breathing and sleeping, Allan decided to undergo a procedure known as a cordotomy, in which a portion of one of her vocal folds would be removed to widen the glottic aperture to improve her breathing. That procedure was scheduled for March 14, 2016. On March 13, Allan went to the emergency room complaining that her shortness of breath had been "getting progressively worse." PLEX 30, at 2. Hospital records reflect that she was "audibl[y] wheezing" and had "difficulty speakin [sic] in complete sentences." Id.; see also PLEX 31, at 7 (reporting that Allan had "increasing dyspnea" even "at rest," was "unable to sleep well at night due to difficulty breathing," and was sometimes "unable to tolerate" the continuous positive airway pressure machine she had received to treat her sleep apnea). She was admitted for an emergency visit and kept in the hospital until her scheduled cordotomy procedure.

On March 14, 2016, Dr. Orestes performed a left vocal cordotomy and tracheostomy[14] on Allan, removing "a small triangular portion of the vocalis muscle" on her left side. PLEX 32, at 47. Initial signs in the wake of Allan's cordotomy were encouraging. Notes from an appointment with Dr. Kolb one week after the cordotomy reflect that Allan was "doing well [and] breathing comfortably, even with [a] capped trach[eostomy]." DEX 45, at 566. Although Allan's voice quality was somewhat "breathy" compared to her preoperative status, Dr. Kolb deemed her overall voice quality to be "adequate" and observed that she was "breathing well." Id. at 565-66. Allan told Dr. Kolb that the procedure improved her breathing "100%."

Allan's gains were temporary. By September 2017, she began to experience "severe shortness of breath even with the tracheostomy uncapped." PLEX 49, at 641 (notes from a

[14] A cordotomy is nearly always accompanied by a temporary tracheostomy, which helps the patient breathe safely during the recovery process.

September 22, 2017 visit with Dr. Orestes). The cordotomy procedure also came with its own problems. For example, in the wake of her cordotomy Allan was hospitalized in the intensive care unit with aspiration pneumonia, which occurs when a foreign substance is breathed into the airway or lungs rather than swallowed into the esophagus and stomach. See Tr. 106.

6. Allan's Current Condition

Although defendant argues that Allan overstates the lasting effects of her injuries, the evidence clearly shows that most of her postsurgical problems will remain with her for the rest of her life. Allan's tracheostomy has proved to be one of the most troublesome aspects of these ongoing problems. It requires a significant amount of medical equipment and daily care, see PLEX 73 (containing pictures of the many medical devices and materials Allan uses to manage her tracheostomy), which she described at length during her testimony. For example, Allan has to monitor her tracheostomy tube constantly for secretions or mucus. To prevent those materials from falling into her lungs (that is, being "aspirated"), she carries a large suction machine with her at all times. She testified that using that machine can be quite painful, as it involves inserting a tube into her stoma to suck out the mucus or secretions. Allan also relies on devices known as "inner cannulae" to prevent dust, dirt, and other foreign contaminants from getting into her airway through her stoma. The inner cannulae are disposable, and Allan typically must change them several times a day depending on the environment to which she is exposed. Every time she uses medical equipment or replaces any of her devices, she must make sure that everything she needs is sterile and readily accessible and that she has a mirror appropriately positioned to see what she is doing. To sleep, she uncaps her tracheostomy and inserts a long plastic tube connected to a large humidifier machine. The humidifier is noisy and requires Allan to adjust the tube throughout the night to prevent loud gurgling of accumulated water in the tube. Allan

must try not to roll over or otherwise disturb the humidifier tube, or else risk aspirating some of the water. Once or twice a month, Allan must change her tracheostomy entirely, a difficult process requiring her to sheathe the tracheostomy tube in a device known as an obturator so that the sharp edges of the tracheostomy do not cut or damage her neck. She also deals with ongoing pain from granulation tissue, using ointment in between silver nitrite cauterization treatments to reduce the discomfort. In general, Allan's tracheostomy management occupies much of her waking and sleeping hours and requires a substantial degree of attention and care.

Allan's tracheostomy has also occasioned many visits to the hospital. PLEX 38, at 464-65 (recording a September 12, 2016 visit with an otolaryngologist in which Allan complained of pain and a "strong smell" coming from the stoma); PLEX 39, at 469 (recording a September 14, 2016 follow-up about the "foul smell" as well as "drainage" issues and granulation tissue); PLEX 42, at 526 (recording an October 27, 2016 visit in which Allan complained of pain in her stoma); PLEX 43, at 555-56 (recording a February 10, 2017 visit to address bleeding and oozing from granulation tissue); PLEX 45, at 580-81 (recording a May 17, 2017 visit to monitor ongoing issues with granulation tissue). Granulation tissue can cause not only pain but also difficulty breathing if the tissue interferes with the airway or with the position of the tracheostomy. See PLEX 40, at 503-05 (recording an October 11, 2016 visit during which Allan complained of difficulty breathing when wearing a cap or a Passy-Muir valve that appeared to have been caused by "[n]early obstructing suprastomal granulation tissue").

Ongoing tracheostomy use also exposes Allan to the risk of other medical issues. For example, it makes her highly vulnerable to environmental stressors like dust, allergens, or pathogens because the air she inhales is not filtered through the body's normal respiratory mucus membranes. See PLEX 52. In October 2016, she was treated for acute pharyngitis, PLEX 41,

and in June 2017 she was treated for an acute upper respiratory infection, DEX 23. Indeed, her upper respiratory issues are frequent and require close attention, particularly to ensure that her airway remains free of mucus, phlegm, or other secretions that could lead to difficulty breathing or aspiration. Further, in September 2017, she underwent a series of pulmonary function tests under the supervision of Dr. John Sherner ("Dr. Sherner"), who concluded that her airway was "markedly abnormal" and "suggestive of a peripheral airway obstruction." PLEX 48, at 629; see also PLEX 49, at 641 (describing the results of the pulmonary function tests as indicating a "severe obstructive pattern").[15]

Allan's glottic opening has improved somewhat because of the cordotomy. In June 2017, for instance, Allan estimated that she was able to "engage[] in 150 minutes of moderate intensity exercise per week" as well as muscle-strengthening exercises "2 or more days per week." DEX 23, at 337. But a January 2019 examination of her vocal folds revealed only a narrow opening when plaintiff inhales. See DEX 160. Although the parties and their experts disagree about the extent of Allan's impairment, they agree, at minimum, that Allan's airway remains "compromised" and "narrow" and that her vocal folds remain "hypomobile." See, e.g., Tr. 603. Allan usually keeps her tracheostomy capped during the day, but she has difficulty breathing during any type of sustained physical exertion, including longer walks and climbing stairs. She often uses a wheelchair or motorized scooter if she must travel longer distances and installed two stairlifts in her home.[16] Allan's sleep apnea symptoms persist, requiring her to open her tracheostomy at night so she can sleep. Sleeping with a tracheostomy is difficult, requires noisy

[15] Dr. Sherner recorded in his notes that his findings were "[a]cceptible but not reproducible" and should be "interpret[ed] with caution." PLEX 48, at 629.

[16] Allan has since moved to a single-story residence and no longer needs stairlifts.

and cumbersome humidifying equipment, and poses its own risks of nighttime aspiration of fluids or foreign substances.

The parties do not dispute that Allan remains hypoparathyroidal and that hypoparathyroidism is considered permanent if it persists for more than a year. As a result, Allan will require ongoing calcium and vitamin D supplements and monitoring for the rest of her life and faces more serious health consequences down the road, including increased risk for osteoporosis, kidney stones, kidney failure requiring dialysis, and even emotional and cognitive issues associated with calcification of the basal ganglia.

Given her compromised breathing, Allan has had to rely heavily on friends and family. After her initial surgery, her husband took on wound and tracheostomy care as well as housework and childcare responsibilities, though it was difficult for him because he was stationed at a military base roughly an hour away from the couple's home. It became effectively impossible for Mr. Allan to help with those burdens once he was deployed overseas. Without day-to-day support from her husband, Allan has had to rely on friends to assist with housework, meal preparation, and childcare. She has had to administer her own daily care, which includes managing an extensive amount and variety of medical equipment and supplies related to her tracheostomy and sleep apnea machine. She has even had to rely on her young children for help, for instance in cooking meals and checking her stoma for granulation tissue.

Allan's ongoing medical issues wreaked havoc on her marriage. Although the couple had experienced marriage issues in the past and had even temporarily separated in 2013 and 2014, the stress and life changes generated by Allan's injuries proved to be insurmountable. Mr. Allan testified that because of his wife's injuries, he began to feel not like her lover, but rather her caretaker. PLEX 173, at 101. He also felt "very powerless . . . as a husband" in the face of her

difficulties, which affected everything the couple and their children did. Id. at 102. As a result, he began to resent Allan for her medical difficulties and told her that he "didn't sign up" for such a life. Tr. 290. Unable to resolve their differences, the Allans have now permanently separated, and divorce proceedings are underway. That divorce will deprive Allan of medical coverage under TRICARE, to which she was formerly entitled as Mr. Allan's spouse. Allan expects to be made the children's primary caregiver, with Mr. Allan visiting the children only once per year after his deployment.

Allan experiences near-constant psychological and emotional distress related to her medical conditions. She describes being frequently frustrated and frightened by the many ways in which her airway and overall health are compromised. She is self-conscious about the stares and careless comments directed her way because of her tracheostomy and obvious physical limitations. At times, her tracheostomy produces an offensive odor and secretions, which make her hesitant to interact with others. She cannot travel even short distances without extensive medical equipment and supplies. She lives in a perpetual state of hypervigilance in an effort to keep her tracheostomy clear and functioning correctly and to protect her airway from foreign contaminants. When environmental conditions are less than ideal, she suffers from anxiety and often experiences panic attack-like symptoms, fearful that her airway will become obstructed. She is even reluctant to cry because crying makes it difficult for her to breathe. Although she remains resilient and enjoys a positive relationship with her children and family, she is now facing these physical and emotional challenges without the support of her husband. Allan has lost her love of travel, her independence, and her formal physical vitality. The Court finds Allan's description of how her life has been affected by the results of her surgery fully credible and well supported by the record.

II. DISCUSSION

A. The Complaint

Allan's two-count complaint seeks damages from the Government under the FTCA.[17] Count I alleges that her treating physicians committed medical malpractice by breaching the applicable standards of care during the run-up to and performance of her total thyroidectomy. Count I covers multiple actions or inactions by Allan's doctors that she claims amount to malpractice—including their failure to examine her appropriately before surgery; their incorrect selection of a total rather than a subtotal thyroidectomy; their choice to proceed with the total thyroidectomy despite clear intraoperative evidence that Allan's right recurrent laryngeal nerve was compromised; the decision to have Dr. George, a medical resident with significantly less experience than Dr. Kolb, perform the dissection around Allan's left nerve; the misidentification and accidental transection of the left nerve; and the removal or damaging of Allan's parathyroid glands. Count II alleges that Allan's doctors failed to inform her adequately of the critical risks associated with the total thyroidectomy, thereby failing to secure her informed consent before the procedure. Although the complaint's ad damnum clause seeks damages in a total amount of $10 million, plaintiff recognizes that under the applicable state-law limit, the most she can recover is $2.2 million. See Va. Code Ann. § 8.01-581.15 (establishing a cap of $2.2 million on

[17] The FTCA effects a limited waiver of the federal government's sovereign immunity with respect to tort claims "caused by the negligent or wrongful act or omission of any employee of the Government while acting within the scope of his office or employment, under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred." 28 U.S.C. § 1346(b)(1). Under the Westfall Act, individual government employees are absolutely immune from actions in tort arising from the performance of their official duties, and the federal government stands in as the proper defendant. See 28 U.S.C. § 2679. Because the acts or omissions at issue in this litigation all took place in Virginia, that state's substantive law governs plaintiff's claims.

the "total amount recoverable for any injury" "in an action for malpractice where the act or acts of malpractice occurred on or after . . . July 1, 2015 through June 30, 2016").

B. Medical Malpractice

Count I alleges that Allan's doctors committed medical malpractice in planning and performing her total thyroidectomy. Under well-settled Virginia law,

> A physician is neither an insurer of diagnosis and treatment nor is the physician held to the highest degree of care known to the profession. The mere fact that the physician has failed to effect a cure or that the diagnosis and treatment have been detrimental to the patient's health does not raise a presumption of negligence. Nonetheless, a physician must demonstrate that degree of skill and diligence in the diagnosis and treatment of the patient which is employed by a reasonably prudent practitioner in the physician's field of practice or specialty.

Bryan v. Burt, 486 S.E.2d 536, 539 (Va. 1997). In other words, the plaintiff in a medical malpractice action must establish that the defendant "violated the applicable standard of care . . . and therefore was negligent" and "that the negligent acts constituted a proximate cause" of the plaintiff's injury. Bitar v. Rahman, 630 S.E.2d 319, 323 (Va. 2006) (quoting Bryan, 486 S.E.2d at 539-40).

"'[E]xpert testimony is ordinarily necessary [in malpractice cases] to establish the appropriate standard of care, to establish a deviation from the standard, and to establish that such a deviation was the proximate cause of the claimed damages,'" Perdieu v. Blackstone Family Practice Ctr., Inc., 568 S.E.2d 703, 710 (Va. 2002) (quoting Raines v. Lutz, 341 S.E.2d 194, 196 (Va. 1986)), and when the parties' experts give conflicting testimony, "it is up to the fact finder to determine which expert's testimony is more credible," Rams v. Commonwealth, 823 S.E.2d 510, 517 (Va. Ct. App. 2019) (quoting Riner v. Commonwealth, 601 S.E.2d 555, 574 (Va. 2004)). Weighing conflicting expert testimony depends not only on the factual evidence and the

scientific studies in the record but also on the competence, honesty, and trustworthiness of the witnesses who testified.[18]

Here, the parties' principal expert witnesses as to the standard of care were the otolaryngologists, who are the medical professionals most closely involved with thyroid surgery. Plaintiff called Dr. Christopher Larsen ("Dr. Larsen"), an associate professor at the University of Kansas School of Medicine,[19] and defendant called Dr. David A. Bianchi ("Dr. Bianchi"), an otolaryngologist in private practice.[20] Both sides also presented testimony from endocrinologists, who are often consulted by otolaryngologists before surgery: Plaintiff called Dr. Helena Rodbard ("Dr. Rodbard"), one of the founders of the American Association of Clinical Endocrinologists,[21] and defendant presented testimony (via de bene esse deposition) of Dr. Leonard Wartofsky ("Dr. Wartofsky"), the director of thyroid cancer research at the MedStar

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[18] To be admissible, any opinion offered by an expert must "be stated to a reasonable degree of medical probability." Pettus v. Gottfried, 606 S.E.2d 819, 826 (Va. 2005). Unless otherwise stated, all expert testimony discussed herein was based on such a reasonable degree of certainty.

[19] For Dr. Larsen's curriculum vitae, see PLEX 87. Plaintiff proffered Dr. Larsen as an expert in otolaryngology who could testify as to the standard of care, causation, and damages, and specifically as to the performance of thyroidectomy and parathyroidectomy surgeries; risks and complications; selection, management, risks, and complications of tracheostomies; and long-term effects of permanent tracheostomies and hypoparathyroidism. Tr. 28-29. Defendant did not object to Dr. Larsen's qualifications in those areas.

[20] For Dr. Bianchi's curriculum vitae, see DEX 159. Defendant proffered Dr. Bianchi "as an expert otolaryngologist, including on all aspects of thyroid surgery, treatment of airway issues, standard of care, and causation and damages." Tr. 511. Plaintiff conducted some brief voir dire but ultimately did not object to Dr. Bianchi's qualifications in those areas.

[21] Plaintiff proffered Dr. Rodbard to testify as an endocrinology expert as to the standard of care, causation, and damages, and specifically "the performance of thyroidectomy and parathyroidectomy surgeries, patient selection, risks and complications, patient selection for and management of tracheostomies, risks and complications of tracheostomies, [and] long-term damages from permanent hypoparathyroidism." Tr. 184-85. Defendant objected to her qualification "only insofar as the performance of thyroidectomies [is] within the expertise of a surgeon and not an endocrinologist." Id. at 185.

Health Research Institute at the MedStar Washington Hospital Center.[22] Finally, in addition to Dr. Kolb, who testified live, and Dr. George, who testified via video link, the Court also heard testimony from Dr. Shakir, the endocrinologist who played a role in Allan's presurgical consultation.[23]

Allan identifies several points during her preoperative consultation and thyroidectomy that she claims failed to satisfy the standard of care.

1. Lack of a Presurgical Laryngoscopy

Allan first argues that Dr. Kolb committed medical malpractice by failing to perform a flexible fiberoptic laryngoscopy before the total thyroidectomy. A laryngoscopy allows a physician to observe, among other things, the functioning of the patient's vocal folds. Plaintiff's expert Dr. Larsen opined that based on the size and location of the extracapsular growth displayed on the preoperative imaging studies, the surgeons "absolutely needed [to perform] a flexible fiberoptic laryngoscopy . . . [t]o determine [the] function[ing] of the vocal cord on that side." Tr. 37-38. Such a procedure would have been valuable because the tumor appeared to be located in "essentially the exact location of the [right] recurrent laryngeal nerve," making it likely that the tumor had involved itself with the nerve and increasing the risk that the right nerve would be compromised. See id. at 39. Dr. Larsen opined that Dr. Kolb's failure to perform a laryngoscopy was inconsistent with the standard of care, as the information that would have been provided by a laryngoscopy was essential so that Dr. Kolb could have "better knowledge of the

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[22] For Dr. Wartofsky's curriculum vitae, see DEX 165. Defendant proffered Dr. Wartofsky as an expert in "thyroid cancer management and endocrinology." Wartofsky Dep. 34. Although plaintiff objected that defendant had not adequately disclosed Dr. Wartofsky as a standard-of-care expert, see id. at 42-45, and subsequently moved in limine to exclude his testimony, the Court denied that motion and admitted Dr. Wartofsky's testimony, see Order [Dkt. No. 54].

[23] For Dr. Shakir's curriculum vitae, see DEX 167.

situation likely to present during surgery" and could "better counsel[] . . . [Allan] as to the true risks of surgery." See id. at 40; see also id. at 42 ("Seeing with her own eyes the lack of motion on that side would make it more real in her mind when discussing the risk to injury to the contralateral side and allow for [a] better informed consent process."). The results of a flexible laryngoscopy also would have cautioned against having a less experienced resident handle the dissection around the left recurrent laryngeal nerve.

Defendant advances several arguments why Dr. Kolb's decision not to perform a laryngoscopy did not constitute malpractice. Defendant first argues that the standard of care did not require a laryngoscopy before a thyroidectomy because general surgeons who perform thyroid surgeries typically "do not have the skill[s] to perform flexible laryngoscopy." Tr. 408 (Dr. Kolb); see also id. at 531 (Dr. Bianchi stating that although otolaryngologists "tend to use [flexible laryngoscopy] much more," "[m]ost general surgeons don't," even when performing thyroid surgeries). This argument compares apples to oranges. The applicable standard of care for purposes of Virginia malpractice law is the level of diligence "employed by a reasonably prudent practitioner in the physician's field of practice or specialty." Bryan, 486 S.E.2d at 539 (emphasis added). To define the standard of care governing an otolaryngologist such as Dr. Kolb, the Court must look to the practices employed by reasonable otolaryngologists. All three otolaryngologists who testified confirmed that at least as a general matter, a laryngoscopy is an important part of the presurgical preparation for a thyroidectomy. Dr. Larsen opined that such a procedure is necessary to counsel the patient properly and to operate with full knowledge as to how the patient's vocal folds are functioning. Dr. Kolb acknowledged that even as of 2015, her practice was to perform a presurgical laryngoscopy unless the patient felt uncomfortable with

the procedure.[24] Moreover, Dr. Kolb testified at trial that her decision not to perform a laryngoscopy during the FNA biopsy visit was informed by her sense that she "had time to do it" at a subsequent visit—suggesting that she intended to go forward with that procedure at some future point before surgery. Even defendant's expert, Dr. Bianchi, recognized that flexible laryngoscopy is routine, at least for otolaryngologists. Based on this evidence, the Court finds that Dr. Kolb's failure to perform a laryngoscopy before the surgery was below the standard of care applicable to otolaryngologists.

Defendant attempts to excuse this breach by arguing that Allan refused, because of her anxiety and her unpleasant experience with the FNA biopsy, to allow Dr. Kolb to perform the laryngoscopy. There is no evidence in the medical records that Allan refused the procedure. Allan denies that Dr. Kolb explained why a preoperative laryngoscopy was useful and that she refused to consent to the procedure. Conversely, Dr. Kolb testified that Allan was "uncomfortable" with the procedure and "asked if it was necessary." Tr. 407. Dr. Kolb also testified that in light of her perception of Allan's concerns and Allan's ability to speak with a normal voice before surgery, she decided to let Allan "make the decision [about a preoperative laryngoscopy] for [herself]." Id.

Ultimately, the Court need not decide this credibility question because Dr. Kolb's version of events is not consistent with the standard of care in any event. Even if motivated by concern for a patient's anxiety or comfort, a physician cannot decide to forgo an unpleasant procedure if

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[24] Dr. Kolb's current practice is to perform a presurgical laryngoscopy on every patient who will undergo a thyroidectomy. See Tr. 408 ("[M]y practice has changed. I generally do it for everybody now . . . ."). Of course, plaintiff's medical malpractice claim must be assessed considering the knowledge and practices in the profession as of the date of the allegedly negligent actions, and plaintiff does not rely on Dr. Kolb's current practice as the basis for her claim.

that procedure is necessary for appropriately counseling the patient or performing necessary surgery. Moreover, as explained by Dr. Larsen, a patient can present no symptoms such as difficulty breathing or speaking but nonetheless have impaired vocal folds. For example, if an immobile vocal fold is relatively close to the midline, the other fold may be able to adduct and abduct sufficiently to close and open the airway as needed. In short, Dr. Kolb's decision not to utilize a well-established and safe preoperative procedure solely because of her concerns about Allan's anxiety and an incomplete understanding of Allan's otolaryngological symptoms was not consistent with the standard of care.

Defendant's final argument is based on causation—namely, that Dr. Kolb did not need the information a laryngoscopy would have provided because she was already on notice that the right vocal fold was vulnerable or compromised. Defendant supports this argument by pointing out that the ultrasound and CT scans of Allan's neck revealed a mass that extended beyond the thyroid capsule and into the surrounding soft tissue in precisely the location where the right recurrent laryngeal nerve is typically found. That imaging alone put Allan's doctors on notice that the right nerve was potentially impacted by the cancer and that removing the cancerous cells outside the thyroid capsule would endanger the right nerve. The laryngoscopy would have further confirmed those reasons to tread lightly but was not strictly necessary in that sense. That Allan's doctors knew or should have known the same information that the laryngoscopy would have provided disrupts the necessary but-for causal connection between Dr. Kolb's breach of the standard of care and any resulting damages. Defendant's argument is correct. Without proof that the breach of the standard of care was a proximate, but-for cause of plaintiff's injury, her malpractice claim based on Dr. Kolb's failure to perform a preoperative laryngoscopy fails; however, this is a Pyrrhic victory, as it merely establishes that Dr. Kolb should have been very

concerned about Allan's right recurrent laryngeal nerve before beginning the surgery and that particular care should have been taken to protect the left nerve from injury.

2. Recommendation of a Total Thyroidectomy

Of the many issues in this litigation, none is more hotly contested than Allan's doctors' decision to perform a total thyroidectomy. Defendant argues that the applicable standard of care as of July 2015—as principally reflected in the 2009 revised guidelines of the American Thyroid Association (the "ATA Guidelines")[25]—recommended a total thyroidectomy in cases of extracapsular papillary thyroid carcinoma. Plaintiff responds that the ATA Guidelines, and the standard of care more generally, recognized that in cases such as Allan's that involved heightened vulnerability of one of the recurrent laryngeal nerves, the more appropriate course of action was a subtotal thyroidectomy, leaving behind a sliver of thyroid tissue on the contralateral side to protect the other nerve. Defendant responds that plaintiff cannot show that a subtotal thyroidectomy would have been any less risky for Allan or that had such a procedure been undertaken, Allan would not have been injured in the same way. The evidence supports plaintiff on this issue.

All the expert witnesses agreed that when faced with a case of papillary thyroid carcinoma, physicians must remove as much thyroid tissue as can be safely excised without endangering other vital structures of the neck. As compared to other forms of cancer, papillary thyroid cancer is highly sensitive to radioactive iodine treatment, meaning that microscopic remnants of papillary thyroid cancer can be successfully destroyed after surgery. To be most

[25] See David S. Cooper et al., Am. Thyroid Ass'n Guidelines Taskforce on Thyroid Nodules & Differentiated Thyroid Cancer, Revised American Thyroid Association Management Guidelines for Patients with Thyroid Nodules and Differentiated Thyroid Cancer, 19 Thyroid 1167 (2009) (included in DEX 162).

effective, there must not be an excess of remaining healthy thyroid tissue. If too much thyroid tissue is left behind, the radioactive iodine will also be absorbed by healthy as well cancerous thyroid cells, and the thyroglobulin assay used to determine whether there are any thyroid cells remaining after treatment will be rendered less useful.

Defendant argues that Allan's doctors' decision to move forward with a total thyroidectomy was perfectly consistent with the ATA Guidelines. Both parties agree that although the ATA Guidelines are a valuable source of information, they do not independently establish the applicable standard of care. See Tr. 209 (Dr. Rodbard: "[T]here are guidelines, but guidelines are just tools. They are not rules."); id. at 508, 523 (Dr. Bianchi: "Do I consider them to be reliable? They are guidelines, and guidelines help us to go in the right direction. . . . Standard of care is not set by the ATA guidelines."). The parties further agree that the ATA Guidelines state that total thyroidectomy is an appropriate procedure at least for some instances of papillary thyroid carcinoma.

Defendant attempts to take this agreement one step further, arguing that total thyroidectomy is the only appropriate treatment—or at least that performing a total thyroidectomy is always consistent with the standard of care. This argument is unpersuasive. Defendant relies on Recommendation 10 of the ATA Guidelines, which provides that if preoperative studies indicate papillary carcinoma, "either lobectomy or total thyroidectomy is recommended, depending on the legion's size and other risk factors." ATA Guidelines 1174-75. During his testimony, Dr. Bianchi interpreted Recommendation 10 to mean "that for any nodule with suspicious indices or pathology indicating papillary carcinoma, . . . total thyroidectomy is the preferred treatment methodology." Tr. 522; see also id. at 424 (Dr. Kolb testifying that the recommendation in the event of a large cancerous mass with a "large degree of extrathyroidal

extension" was "always . . . a total thyroidectomy"). That is plainly not what Recommendation 10 says because it includes the qualifications that less invasive procedures may be appropriate and that "other risk factors" must be considered in selecting among the available surgical options. Dr. Bianchi's overreading of Recommendation 10 undercuts his reliability as an expert. The same is true for how defendant relies on Recommendation 26, which provides that "[f]or patients with thyroid cancer >1 cm, the initial surgical procedure should be a near-total or total thyroidectomy unless there are contraindications to the surgery." ATA Guidelines 1179. Dr. Bianchi concluded that based on Recommendation 26, "Drs. Kolb and George followed th[e] national guideline by performing a total thyroidectomy." Tr. 523. Yet Recommendation 26 clearly states that a near-total thyroidectomy may be a viable option, and it further cautions physicians to be attuned to patient-specific "contraindications to the surgery." As Dr. Larsen explained, Allan did have contraindications to total thyroidectomy, namely the "cancer involving her nerve and [the] impaired right recurrent laryngeal nerve function." Id. at 66. Plaintiff's view of the ATA Guidelines and applicable standard of care—that total thyroidectomy may be an appropriate procedure in cases of papillary carcinoma unless other risk factors counsel a more conservative approach—is more credible than defendant's across-the-board position.[26] Indeed, plaintiff's view is fully consistent with defendant's other expert,

[26] Defendant relies heavily on Dr. Bianchi in establishing the applicable standard of care. Although Dr. Bianchi is a qualified and experienced physician, at various points in the trial he displayed a lack of neutrality that undermined his credibility. His aggressive overreading of several of the ATA Guidelines is but one example. Another was his willingness to opine on pulmonological issues. During Dr. Bianchi's direct examination, defense counsel asked him two basic questions about chronic obstructive pulmonary disease ("COPD"). Dr. Bianchi made clear he was uncomfortable with the line of questioning: "I am not a pulmonologist, and I am probably not the best one to be [answering] that question." Tr. 616. Things changed on cross-examination when plaintiff's counsel referred to Dr. Sherner's September 2017 examination of Allan and asked if Dr. Bianchi would "defer to a pulmonologist" on the issue of whether Allan had COPD. Id. at 632. Dr. Bianchi immediately challenged plaintiff's view of Dr. Sherner's

Dr. Wartofsky's, observation that whether a patient should receive "a subtotal thyroidectomy or a total thyroidectomy . . . [is] based on the given clinical individual circumstances of the patient," making it "difficult to generalize" as to a single approach. Wartofsky Dep. 32-33. And it is equally consistent with foundational principles applicable to all specialized professionals, who must rely on individualized determinations and pay careful attention to the facts of each individual they serve.

Further, plaintiff demonstrated by a preponderance of the evidence not only that a total thyroidectomy is inappropriate in some cases, but also that a subtotal thyroidectomy was a more appropriate treatment modality for a patient in her position. Dr. Larsen testified that given the likelihood that plaintiff's right recurrent laryngeal nerve was already at risk, a subtotal thyroidectomy offered essentially the same disease-related benefits as a total thyroidectomy with

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report, asserting that although he was not a pulmonologist, he "do[es] look at pulmonary function tests with regularity" and opining that Dr. Sherner's test results were "noninterpretable" at best. See id. at 632-33. Setting aside whether Dr. Bianchi's opinion was medically correct, his eagerness to undercut plaintiff's interpretation of a medical report outside his area of expertise undermines his credibility.

Another example of Dr. Bianchi's apparent partisanship occurred when counsel for plaintiff asked him about Allan's emergency hospitalization on March 13, 2016, the day before her cordotomy was scheduled. In response to a question about Allan's "emergent episode of severe shortness of breath which led to the need for a cordotomy and the replacement of her tracheostomy," Dr. Bianchi replied that the cordotomy and tracheostomy had already been scheduled by Dr. Orestes and thus did not qualify as "emergency procedure[s]." Id. at 623. But Dr. Bianchi went much further than that clarification, refusing to squarely acknowledge that Allan had "presented to the emergency room" that day with shortness of breath, instead speculating—without any apparent basis—that her symptoms were caused by her "being anxious about the surgery that was upcoming." Id. at 623-24. Once again, Dr. Bianchi's testimony smacks more of advocacy than of neutral expertise.

Finally, as discussed in greater detail below, without having conducted a rigorous exercise test and without discussing the extensive evidence in the record indicating that Allan needs her tracheostomy to sleep, Dr. Bianchi nonetheless opined without qualification that she is not tracheostomy dependent. Taken together, these episodes convince the Court that Dr. Bianchi's testimony was not fully reliable.

the major advantage of better protecting Allan's left nerve. As defendant concedes, Allan's doctors had reason to know even before the operation that her right nerve was highly vulnerable if not already compromised. By leaving a thin sliver or sheath of thyroid tissue behind on the left side, the surgeons could have avoided dissecting the posterior side of the thyroid capsule where the left nerve sits. In Dr. Larsen's view, this "more conservative surgery on the contralateral left side" was the best option to avoid the potentially "catastrophic" consequences of bilateral recurrent laryngeal nerve injuries. See Tr. 41. Although Dr. Larsen acknowledged the need to remove as much thyroid tissue as can be safely excised from a patient with papillary carcinoma, he also opined that the small portion of thyroid tissue that would be left behind after a subtotal thyroidectomy would not significantly interfere with radioactive iodine treatment or otherwise reduce Allan's long-term prospects for survival, which (given her age and cancer type) were excellent.

Several types of evidence support Dr. Larsen's view. One is a 1998 peer-reviewed study "conducted to evaluate the effect of total thyroidectomy compared with lesser procedures," including both subtotal thyroidectomies and lobectomies, "in patients with high-risk thyroid cancer." See Harold Wanebo et al., Total Thyroidectomy Does Not Enhance Disease Control or Survival Even in High-Risk Patients with Differentiated Thyroid Cancer, 227 Annals Surgery 912, 913 (1998) (PLEX 151). The study concluded that "in most cases, there is no benefit from the performance of total thyroidectomy and, thus, surgeons should not feel pressured to perform this procedure[,] which still carries a defined risk for hypoparathyroidism and rare recurrent nerve injury, even in the hands of experienced surgeons." Id. at 917 (emphasis added). Although the study did not entirely rule out total thyroidectomies, it emphasized that "[p]atient

selection . . . still should be based on findings at surgery and patient risk factors." Id.[27] Dr. Larsen's opinion was also bolstered by the testimony of Dr. Rodbard, who agreed that a subtotal thyroidectomy would better protect the vital left recurrent laryngeal nerve without affecting Allan's chances for long-term survival. See, e.g., Tr. 191 (opining that a diagnosis of papillary thyroid carcinoma is "about as good as it can be" as compared to other types of cancer); id. at 194-95 (stating that due to the effectiveness of radioactive iodine treatment and recombinant thyroid stimulating hormone, it is "perfectly okay to leave a rim . . . of thyroid tissue behind" to protect "the recurrent laryngeal nerve and the parathyroid glands" located behind the thyroid capsule, thereby relying on the iodine treatment "to further destroy whatever tissue the surgeon could not have safely . . . removed at the time of the operation"); id. at 197 ("If it's a papillary thyroid carcinoma, we all know that the surgeon should not go overboard and risk damaging critical structures in the neck. . . . In particular, we worry about [the] recurrent laryngeal nerve[s] and we worry about the parathyroid glands.").[28] In fact, Dr. Kolb did exactly

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[27] Dr. Larsen also relied on a 2004 study finding "little difference in survival within each risk group whether patients were treated with a partial or a total thyroidectomy." See Philip I. Haigh et al., Extent of Thyroidectomy Is Not a Major Determinant of Survival in Low- or High-Risk Papillary Thyroid Cancer, 12 Annals Surgical Oncology 81, 84 (2004) (PLEX 150). As defendant pointed out, this study does not shed much light on the issue in Allan's case because of the way in which the authors divided the universe of surgical procedures, defining "total" thyroidectomies to include near- and subtotal thyroidectomies and using the term "partial thyroidectomy" to refer only to hemithyroidectomies or lobectomies. See id. at 82; see also Tr. 653-64 (Dr. Bianchi making this point). Although this study does not support Dr. Larsen, it also does not support defendant's position as to the standard of care.

[28] Defendant attempted to undercut this opinion by eliciting testimony from Dr. Bianchi that Dr. Rodbard had referred patients with tumors roughly the size of Allan's to Dr. Bianchi's group and had recommended a total thyroidectomy for those patients. See Tr. 524-25. But Dr. Bianchi did not testify, and defendant provided no evidence indicating, that Dr. Rodbard made such a recommendation for any patient who, like Allan, had evidence of extrathyroidal involvement of one of the recurrent laryngeal nerves. Moreover, the Court found Dr. Rodbard to be a credible and reliable expert witness.

what plaintiff's experts describe: She left some cancerous thyroid tissue on Allan's right recurrent laryngeal nerve to protect it from becoming nonfunctional.

Defendant responds that a subtotal thyroidectomy would have been inconsistent with the standard of care because leaving thyroid tissue behind on the left side would have undercut the effectiveness of radioactive iodine treatment and rendered Allan vulnerable to a future recurrence of cancer. The evidence to which defendant points is not convincing. First, defendant highlights Recommendation 30 of the ATA Guidelines, which reads: "Ablation of the remaining lobe with radioactive iodine has been used as an alternative to completion thyroidectomy. It is unknown whether this approach results in similar long-term outcomes. Consequently, routine radioactive iodine ablation in lieu of completion thyroidectomy is not recommended." ATA Guidelines 1180 (endnote omitted). That recommendation is of minimal probative value. As the guidelines make clear, the term "completion thyroidectomy" refers to an additional procedure "when [a] diagnosis of malignancy is made following lobectomy." Id. (emphasis added); see also id. ("Completion thyroidectomy should be offered to those patients for whom a near-total or total thyroidectomy would have been recommended had the diagnosis been available before the initial surgery."). For that reason, defendant's reliance on Recommendation 30 is an apples-to-oranges comparison offering no evidence on the success of radioactive iodine treatment in the wake of a subtotal thyroidectomy.

Next, defendant points to a portion of the ATA Guidelines that reads, "Subtotal thyroidectomy, leaving >1 g of tissue with the posterior capsule on the uninvolved side, is an inappropriate operation for thyroid cancer." ATA Guidelines 1178. Dr. Kolb referred to this one-gram limitation in her direct testimony, see Tr. 427, and defendant relied on that limitation in arguing that leaving anything more than a gram behind would be inconsistent with the

standard of care. Here, too, defendant is quoting selectively. As plaintiff pointed out, the section of the ATA Guidelines containing that statement was responding to an inquiry about "the appropriate operation for indeterminate thyroid nodules" in the event of "a nondiagnostic or indeterminate biopsy." See ATA Guidelines 1177-78. After Dr. Larsen explained that the quoted language was "not applicable to the . . . issues in this case," Tr. 173, defendant never again referred to that language. Nor did defendant present evidence that performing a subtotal thyroidectomy would necessarily result in more than 1 gram of thyroid tissue being left behind.

Defendants next point to the expert testimony of Drs. Bianchi and Wartofsky, both of whom opined that a total rather than a subtotal thyroidectomy was more appropriate given the size and extracapsular extent of Allan's tumor. Although Dr. Wartofsky is a well-qualified expert on thyroid issues, his role in this litigation is, at best, odd. In October 2016, after her surgery, Allan's doctors at Fort Belvoir referred her to Dr. Wartofsky for a second opinion on whether a second course of radioactive iodine treatment was appropriate. See DEX 92, at 1452, 1454. Although Dr. Wartofsky reviewed Allan's medical records, it is unclear how carefully he did so; for example, his notes incorrectly state that her right recurrent laryngeal nerve was "surgical[ly] remov[ed]" during her thyroidectomy, id. at 1452, apparently confusing the transection of her left nerve and the small surgical excisions made to the right nerve. He also performed a "brief focussed [sic] examination" of Allan that did not include a laryngoscopy, bloodwork, or any other involved form of physical test. Id. at 1453. In his brief, four-page report, Dr. Wartofsky opined that it would be "prudent to withhold more radioiodine at th[at] time and rather continue to monitor for structural evidence of residual disease that might be addressed with approaches to therapy other than radioiodine." Id. at 1454. But Dr. Wartofsky's report did not conclude with his views on the issue for which he had been consulted. Instead,

and apparently without having been prompted by Allan or her other doctors, Dr. Wartofsky ended the report with the following unsolicited evaluation of her treatment:

> The patient was advised that her care up until this time, both at Fort Belvoir and at the Walter Reed National Military Medical Center[,] has been fully in accord with all standards of practice for the medical and surgical management of thyroid cancer, although it is highly unfortunate that she has suffered the rare complications of thyroid surgery (recurrent laryngeal nerve transection and hypoparathyroidism) presumed to be the result of her extremely highly aggressive,[29] locally invasive variant of papillary thyroid cancer.

Id. at 1453. Dr. Wartofsky's opinion was not only unsolicited; it was also inconsistent with his subsequent testimony that he did not claim any particular expertise "on the surgical aspects of thyroid disease." Wartofsky Dep. 26. Dr. Wartofsky—who himself worked at Walter Reed for nearly 25 years, see Wartofsky Dep. 10—simply had no reason or basis to offer that opinion, and his decision to do so calls into question his status as a credible, unbiased expert.[30]

Defendant's final argument is based on causation. Neither Dr. George nor Dr. Kolb could identify the precise moment at which Allan's left recurrent laryngeal nerve was transected. In defendant's view, that creates a fatal break in plaintiff's causal chain because she cannot show how or why a subtotal thyroidectomy would have avoided the transection of her left nerve. At

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[29] The parties spent a fair amount of time at trial arguing about whether Allan's cancer was "aggressive." Their dispute was essentially semantic: Plaintiff and her expert Dr. Rodbard used the term "aggressive" as a synonym for "fast-moving," see Tr. 212 (opining that Allan's cancer was not aggressive because it was "very indolent"), whereas defendant and its expert witnesses essentially used "aggressive" as a synonym for "expansive," see id. at 399 (Dr. Shakir); id. at 424, 426 (Dr. Kolb); id. at 518 (Dr. Bianchi).

[30] Nor did Dr. Wartofsky provide a cogent explanation for his decision to volunteer that opinion. During his de bene esse deposition, he explained that he wrote the final sentence of his report to "reassure" Allan "that she was in good hands" with her military doctors. Wartofsky Dep. 74. Even assuming his intent was to reassure plaintiff—rather than, for instance, to make her less likely to file a lawsuit against her doctors—that does not justify his overbroad and unsupported assertion that every single aspect of her cancer management and surgery had been consistent with all applicable standards of care.

the outset, it bears observing that this argument places defendant in the odd posture of arguing that Drs. George and Kolb were so uncertain with respect to how they transected Allan's nerve that they likely would have transected the nerve again even if they had performed a different surgical procedure. In any event, defendant's argument gives short shrift to the evidence. When Dr. George first identified what he believed to be the left recurrent laryngeal nerve, he had just begun to lift the left thyroid lobe up and away from its position in the neck. The structure he believed to be the true nerve responded when stimulated at low amperage with a Prass probe. The successful stimulation is highly relevant because it shows both that Dr. George had most likely identified a branch or offshoot of the nerve, see, e.g., Tr. 636 (Dr. Bianchi explaining that a branch of a recurrent laryngeal nerve may stimulate like the true nerve), and that the nerve had not yet been transected. Obviously believing he had identified the true nerve, Dr. George began to dissect the left lobe so that it could be pulled up and out, meaning that he was dissecting the lobe on the posterior side where the left recurrent laryngeal nerve is located. It was during this dissection that Dr. Kolb noticed the transected nerve. See id. at 476 (Dr. Kolb: "[T]he injury occurred while we were dissecting the nerve out . . . ."). Further, evidence at trial established that during a subtotal thyroidectomy, the operating otolaryngologist can leave a sliver of thyroid tissue behind, thus entirely avoiding the posterior side of the capsule on which the nerve rests.[31] When combined, these two factual findings yield the conclusion that a subtotal thyroidectomy

[31] Dr. Bianchi suggested that it may be more dangerous to cut through the thyroid capsule rather than dissecting the entire capsule because "it is much better to see the anatomy when you're operating in the neck [rather] than cutting in areas where you don't see the anatomy," particularly in light of the fact that "nerves and parathyroid glands can reside within the thyroid gland." Tr. 520. That suggestion does not undermine Allan's argument on causation, as uncontroverted testimony indicated that neither of her recurrent laryngeal nerves was inside the corresponding thyroid lobe.

procedure would have avoided the type of complete dissection on the posterior side of the thyroid capsule that led to the transection of Allan's left nerve.[32]

In sum, plaintiff has established, by a preponderance of the evidence, the following: A total thyroidectomy was inconsistent with the standard of care given Allan's cancer diagnosis and prognosis and the vulnerability of her right recurrent laryngeal nerve. A subtotal thyroidectomy was an available, well-established procedure that would have complied with the standard of care and would have avoided the risks, and attendant catastrophic consequences, of injury to the left nerve. Had Allan's doctors proceeded with a subtotal thyroidectomy, they could have avoided the posterior surface of the thyroid capsule where the left nerve sits, and Allan's nerve would not have been severed. This would have left her with one functional vocal fold without compromising her chances for long-term survival considering the effectiveness of radioiodine treatment. For these reasons, Allan has demonstrated that her doctors breached the standard of care in selecting a total thyroidectomy and that this breach was the proximate cause of the injury to her left recurrent laryngeal nerve, which resulted in the paralysis of her left vocal fold, her permanent dependence on a tracheostomy, and the other medical problems previously discussed.

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[32] In attempting to undercut this conclusion, defendant highlights a finding from the Wanebo et al. study that among the subset of patients who had experienced complications, "patients having less than total thyroidectomy had . . . no difference in nerve injury or vocal cord impairment." See PLEX 151, at 915. This statement has relatively little weight. That study was focused on long-term survival and cancer management rates, not nerve injury. The sentence quoted by defendant does not provide any detail on how nerve injury rates were compared; whether there was any differentiation between injuries as a result of cancer removal, accidental transection, or any other cause; whether any patient's thyroidectomy was subtotal as to only one of his thyroid lobes; and so on. Without additional details, this statement does not undercut the persuasive expert testimony provided by Drs. Larsen and Rodbard that a subtotal thyroidectomy is a valuable option precisely because it helps to avoid injury to the recurrent laryngeal nerves as well as the parathyroid glands.

3. Issues with the Performance of the Total Thyroidectomy

Plaintiff identifies several independent as well as interrelated issues with the manner in which Drs. Kolb and George performed the total thyroidectomy, only two of which will be addressed: the role Dr. George played in the surgery and the accidental removal of and injury to Allan's parathyroid glands.[33]

a. Dr. George's Role

Plaintiff offers both a broad and a narrow theory as to why Dr. George's involvement in her surgery breached the standard of care. The broader theory is that a resident such as Dr. George simply should not have been involved in the total thyroidectomy procedure. That argument fails because the evidence shows that chief residents are highly trained and are frequently used to assist the attending physicians in many surgeries in the neck area, including thyroidectomies. See Tr. 25-26 (Dr. Larsen stating that he uses residents to assist him in thyroid and parathyroid surgeries); id. at 511 (Dr. Bianchi: "Every thyroid that I do, I have a resident with me."); see also id. at 161 (Dr. Larsen agreeing that it is "quite rare for a patient to refuse a thyroid surgery just because a resident will be involved"). Indeed, as Dr. Bianchi explained, a reasonable attending otolaryngologist performing a thyroidectomy would much rather be assisted by a fifth-year resident such as Dr. George than by a physician's assistant or a surgical first assistant. See id. at 590-91. Accordingly, Dr. Kolb's decision to have Dr. George work with her, at least as a general matter, was consistent with the standard of care.

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[33] Plaintiff also suggested that the misidentification and transection of her left recurrent laryngeal nerve constituted per se violations of the standard of care. Defendant argues that these theories are inconsistent with state-law principles holding that "[t]he mere fact that the . . . treatment ha[s] been detrimental to the patient's health does not raise a presumption of negligence." Bryan, 486 S.E.2d at 539. In light of the Court's factual findings that Allan's doctors committed specific negligent acts that proximately caused her left recurrent laryngeal nerve injury, there is no need to address plaintiff's alternative arguments.

Plaintiff's narrower theory is more successful. Plaintiff argues that even assuming it was appropriate for Dr. Kolb to rely on Dr. George during the procedure, it was inappropriate to assign him the lead role during the most perilous portion of the surgery: the dissection around Allan's left nerve. By that point in the surgery, there was no doubt that Allan's right nerve had been grossly involved with cancer and that Dr. Kolb had actually cut portions of the nerve in an effort to remove as many of the cancerous cells encasing it as possible. The likely injury to the right nerve would have been an immediate red flag to any reasonable otolaryngologist to proceed with extreme caution on the left side. As Dr. Larsen put it at trial, "The most experienced surgeon in the room should be performing this critical dissection because the patient's long-term tracheostomy dependence is essentially at risk." Tr. 56. It was not only plaintiff's expert witness who recognized this dynamic. Dr. Wartofsky, defendant's witness, also explained that it has been "well documented in the surgical literature that the more thyroidectomies a given surgeon does, the less common will be" transection of a recurrent laryngeal nerve. Wartofsky Dep. 86. Simply put, this was not an appropriate time to test Dr. George's facility with a scalpel or his ability to identify and dissect around a recurrent laryngeal nerve. Allan's airway was too vulnerable, and the consequences of a mistake far too grave. Dr. Kolb was the more experienced otolaryngologist and surgeon, and she should have taken the reins during the most critical aspect of the surgery. The Court finds that had Dr. Kolb done so, she would have proceeded with greater caution and could have avoided the accidental transection that has caused so many negative consequences for Allan. Accordingly, Dr. Kolb's decision to let the less experienced resident handle the dissection of Allan's left thyroid lobe around the critical left recurrent laryngeal nerve breached the standard of care and was the proximate cause of Allan's nerve injury.

b. Parathyroid Issues

The final aspect of plaintiff's medical malpractice claim relates to the effects of her surgery on her parathyroid functioning. Plaintiff argues that due to her doctors' inattention to issues with her parathyroid glands, she has been left permanently hypoparathyroidal and consequently is dependent on calcium and vitamin D supplements and is vulnerable to an increased risk of serious medical problems. For the reasons set out below, plaintiff has made the necessary showings, and the Court finds that her doctors breached the standard of care and caused her hypoparathyroidism.

The evidence in the record related to plaintiff's parathyroid glands is as follows. During the total thyroidectomy procedure, Drs. Kolb and George noticed that Allan's right inferior parathyroid gland "was grossly involved with tumor." PLEX 9, at 16. They decided to remove the gland altogether. That decision was unquestionably reasonable: It would have been impossible to reimplant all or some of the gland without risking reintroduction of cancerous cells, and humans do not need all four parathyroid glands to maintain normal calcium and phosphorus levels. Drs. Kolb and George did not intend to remove any additional parathyroid glands and, in their operative report, they wrote that "the remaining parathyroid glands were identified and intact." Id. Yet once the tissues removed during Allan's thyroidectomy were analyzed, it was revealed that the doctors had accidentally removed a second parathyroid gland. It remains unknown from where that gland came or during what point in the procedure it was removed. Moreover, although Allan's PTH levels had registered as normal before the surgery, they quickly plummeted after the surgery to dangerously low levels.

The parties largely agree on the standard of care applicable to parathyroid management. A surgeon performing a thyroidectomy should locate and observe the parathyroid glands to

ensure they are not involved with cancer and will continue functioning once the surgery is complete. It is not uncommon for a parathyroid gland to be accidentally removed during surgery because the glands are small and are located either behind the thyroid capsules or, in rare instances, inside the thyroid capsules themselves; however, the standard of care calls for surgeons to examine all tissue removed during a thyroidectomy to identify any accidentally removed parathyroid glands. In the event that a parathyroid gland is accidentally removed during surgery, it may be in part or in whole surgically reimplanted into a bed of muscular tissue, at which point the parathyroid tissue will reconnect with a blood supply and regain functionality. It is also not uncommon for a parathyroid gland to be accidentally cut off from its blood supply during surgery. If such devascularization is discovered in a timely fashion, the damaged gland can also be saved through reimplantation. Of course, that remedy is only possible if the surgeon promptly discovers the accidental removal of or injury to the gland. In addition to visual examination, physicians can use intraoperative blood testing to ensure that the patient's parathyroid glands are working properly, as measurable PTH levels will respond to removal or devascularization of the parathyroid glands in a matter of minutes.

Taken together, the evidence overwhelmingly shows that Drs. Kolb and George breached the standard of care with respect to Allan's parathyroid system. Although neither their intentional removal of the right inferior gland nor their accidental removal of an additional gland, without more, breached the standard of care, the evidence demonstrates that they paid scant attention to Allan's parathyroid glands. For one thing, the operative report's statement that "the remaining glands were identified and intact" is flatly inconsistent with two pieces of evidence: the accidental removal of one of the glands and Allan's severe postoperative hypoparathyroidism. Drs. Kolb and George simply could not have appropriately identified all of

Allan's glands; had they attempted to do so, they would have noticed the additional missing gland. Further, in light of the uncontested evidence that PTH levels will remain normal with as little as one-half of one functioning parathyroid gland, it stands to reason that if Allan's doctors had merely removed two of her glands, she would have maintained normal PTH levels.[34] That her levels plummeted after the surgery is clear, if circumstantial, evidence that her remaining glands were either devascularized or removed during surgery. That defect should have been identified during surgery and quickly remedied with reimplantation. It was not. Allan's doctors also failed to measure her PTH levels, either intraoperatively or in the immediate wake of surgery, to see whether she had lost parathyroid functioning. Indeed, it appears Dr. Kolb was unaware that such testing was even an option. See Tr. 478-79. Allan's doctors' inattention to her parathyroid glands was a breach of the standard of care. It denied her the chance to have any accidentally damaged or removed glands reimplanted in a way that would have saved her from permanent postsurgical hypoparathyroidism.

In sum, plaintiff has demonstrated that her doctors breached the standard of care in several ways that proximately caused her to lose functioning in her left recurrent laryngeal nerve and parathyroid glands. Accordingly, judgment will be entered in her favor on Count I. Although plaintiff has prevailed on Count I, Count II provides an independent pathway to recovery and, for purposes of completeness, is considered below.

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[34] There is no evidence about precisely how many parathyroid glands Allan had before surgery. See, e.g., Tr. 487 (Dr. Kolb admitting that she did not "specifically know how many parathyroid glands . . . Allan had"). Yet even this lack of information cuts against defendant, as Drs. Kolb and George should have attempted to locate and catalog Allan's parathyroid glands to ensure that her surgery did not inadvertently result in hypoparathyroidism.

C. Lack of Informed Consent

In Count II, Allan seeks damages for her doctors' failure to secure her informed consent for the total thyroidectomy. "To succeed on an informed consent claim, the plaintiff must establish that the physician breached the standard of care by failing to disclose the material risks associated with the treatment or procedure, or the existence of alternatives if there are any, thereby precluding the plaintiff from making an informed decision about whether to undertake a particular procedure or course of treatment." Allison v. Brown, 801 S.E.2d 761, 768 (Va. 2017); see Dessi v. United States, 489 F. Supp. 722, 727 (E.D. Va. 1980) ("The doctrine of informed consent requires a physician to disclose to his patient the alternatives to and risks of a particular treatment, so as to enable the patient to intelligently decide whether or not to undergo such treatment." (citing Bly v. Rhoads, 222 S.E.2d 783, 785 (Va. 1976))). The plaintiff must also demonstrate that the physician's failure to secure appropriate informed consent "was a proximate cause of her injury." Allison, 801 S.E.2d at 768 (quoting Tashman v. Gibbs, 556 S.E.2d 772, 779 (Va. 2002)). Typically, this means that the plaintiff must prove by a preponderance of the evidence "that she would not have agreed to the treatment or procedure had the physician made a proper disclosure of the risks and alternatives." Id.[35]

Plaintiff does not argue that her doctors failed to inform her of the general risks associated with her procedure. Indeed, the record reflects that both Allan's endocrinologists and Dr. Kolb informed her of several potential risks of a total thyroidectomy, including vocal cord paralysis and hypoparathyroidism. DEX 71, at 853; see also DEX 70, at 844 (discussing risks

[35] The Supreme Court of Virginia has expressly reserved the question whether an objective or subjective approach is appropriate with respect to proving causation in an informed consent case. See Martin v. Lahti, 809 S.E.2d 644, 648 n.3 (Va. 2018). Because that issue is not outcome determinative here, it will not be considered.

including injury to the recurrent laryngeal nerves, hypocalcemia, and airway obstruction). Allan signed a preoperative consent form advising her of risks including "airway compromise with [a] need for [a] tracheostomy, voice changes, nerve damage, low calcium, . . . [a] need for thyroid replacement hormones and [a] need for further surgery." DEX 124. Although plaintiff has no specific memory of being advised of those risks, she does not dispute that she signed the form, and the risks included on the form are generally in line with her husband's memory of the preoperative consultation. See PLEX 173, at 65.

Instead, plaintiff advances a narrower argument: that her doctors failed to warn her about specific risks associated with a total as opposed to a subtotal thyroidectomy in light of the extracapsular extension of the mass in her right thyroid lobe and the likelihood of involvement of the right recurrent laryngeal nerve.[36] In that sense, plaintiff's lack-of-informed-consent theory is similar to her principal theory of malpractice liability.

Plaintiff has carried her burden of demonstrating that her doctors did not adhere to the standard of care when they failed to inform her of the specific risks associated with the total thyroidectomy procedure and of a viable alternative that would meaningfully reduce those risks. To be sure, every thyroidectomy carries a risk of injury to one or more of the recurrent laryngeal nerves and a corresponding compromise of the patient's airway, and Allan was warned of that general risk. But Allan's case involved a more specific risk: the substantial likelihood that her cancer had become involved with her right nerve. That degree of involvement created a genuine

[36] Plaintiff's complaint alleges another theory of liability sounding in lack of informed consent: that her doctors failed to warn her that Fort Belvoir was short-staffed and that Dr. George, a resident, would have to assist as a result. Plaintiff appears to have abandoned that line of argument before trial. See Pl.'s Pretrial Proposed Findings of Fact & Conclusions of Law [Dkt. No. 64]; cf. Tr. 161-62, 303-04 (cross-examination of plaintiff's witnesses on the short-staffing theory).

and substantial risk that the right nerve would be damaged, either as a direct consequence of the cancer or because of the surgeon's efforts to remove the cancer. Under those circumstances, the consequences that would flow from injury to plaintiff's left nerve went from serious to catastrophic, and thus the risk profile and reasons to avoid those risks changed. There is absolutely no evidence in the record that any of Allan's doctors explained those increased risks to her. Instead, by reading Allan a list of potential risks involved in every total thyroidectomy, the doctors ignored what was unique about her case. The standard of care requires more.

Allan's doctors also neglected to inform her about a viable alternative: a subtotal rather than a total thyroidectomy. Drs. Kolb and Shakir both testified that their recommendation in favor of a total thyroidectomy was practically automatic, and the record confirms that a subtotal thyroidectomy was not explained or presented to plaintiff as an alternative. Dr. Kolb's presurgical consultation notes, for instance, indicate that she talked to Allan about a "hemi"- rather than a "total" thyroidectomy. DEX 70, at 844. By focusing only on the differences between a hemithyroidectomy and a total thyroidectomy, Dr. Kolb ignored a viable alternative in the middle of the spectrum. The consulting endocrinologists' notes also leave out the subtotal thyroidectomy option altogether. See DEX 71, at 853. And when it came time for Allan to sign the presurgical consent form, Dr. Kolb struck out the words "or part" from the phrase "[r]emoval of all or part of the thyroid gland," DEX 124, emphasizing that for plaintiff, anything short of a total thyroidectomy was not a genuine option. In response, defendant argues that at least as of July 2015, the standard of care did not require Allan's doctors to recommend a subtotal thyroidectomy as an alternative. That argument has already been found to be flawed. A subtotal thyroidectomy was a well-recognized treatment option for patients in Allan's position in mid-2015. By failing to warn Allan both about the serious risks associated with a total thyroidectomy

and about an alternative procedure that could help to avoid those risks, her doctors breached the standard of care.[37]

Plaintiff has also demonstrated by a preponderance of the evidence that her doctors' failure was a proximate cause of the injuries she suffered. Both plaintiff and Mr. Allan testified that she was particularly concerned about airway compromise and, in particular, with the risk that she would be rendered dependent on a tracheostomy. See, e.g., PLEX 173, at 65 (Mr. Allan explaining that after the preoperative consultation, Allan had told him, "don't let them give me a trach"); id. at 68, 72 (reiterating that Allan "didn't want a tracheostomy" and was worried about that possibility before surgery); Tr. 259 (Allan testifying that she was "horrified" to learn that she had been given a tracheostomy in the wake of her thyroidectomy). Allan also credibly testified that she would not have consented to a procedure that put her left nerve at greater risk than necessary. She further testified, in a forthright and credible manner, that had her doctors meaningfully explained the option of a subtotal rather than a total or a hemithyroidectomy, she would have selected that option because it provided her the best chance of eliminating the cancer in her neck while at the same time preserving her vital left nerve. And as detailed above, a subtotal thyroidectomy would have avoided dissection of the posterior surface of the lobe and thus prevented transection of the left nerve (and the attendant catastrophic consequences). For these reasons, plaintiff is also entitled to judgment on her lack-of-informed-consent claim.

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[37] Dr. Shakir testified that in his estimation, a total thyroidectomy—even given the heightened risk of long-term tracheostomy dependence considering the compromised state of Allan's right recurrent laryngeal nerve—was proper because "long life is more important than saving the [left] recurrent laryngeal nerve." Tr. 398. Even if the assumptions underlying Dr. Shakir's opinion are assumed to be correct, that delicate choice was Allan's, and not her doctors', to make. Allan very well could have concluded that some minor increase in the likelihood of recurrence of her cancer would be an acceptable tradeoff for a decreased likelihood of lifelong tracheostomy dependence, and that conclusion would not be unreasonable.

D. Damages

1. Allan's Tracheostomy Dependence

Plaintiff's calculation of the quantum of damages to which she is entitled is based, among other things, on her being permanently dependent on a tracheostomy. Defendant argues that this assumption is unwarranted because plaintiff is not, in fact, permanently tracheostomy dependent. Defendant bases this argument on the following evidence. Although Allan's left vocal fold has remained totally paralyzed since her thyroidectomy, the right fold has shown signs of at least some functioning since the surgery. Her right vocal fold's abduction was "minimal" when measured in July and August of 2015, see PLEX 14, at 187; PLEX 17, at 207, but exhibited "small movements on adduction," PLEX 14, at 187. The apparent partial functioning of the right fold soon after the surgery gave Dr. Kolb hope that damage to the right nerve would be temporary in nature. Indeed, Allan was able to breathe, swallow, and speak enough in the wake of the surgery that her tracheostomy was removed in August 2015. Although Allan increasingly experienced shortness of breath and difficulty sleeping that ultimately led to her decision to undergo a cordotomy and a second tracheostomy in March 2016, defendant points out that the tracheostomy accompanying the cordotomy was intended to be temporary and that Allan currently keeps her tracheostomy capped, and breathes through her normal airway, for much of the day.

In arguing that Allan is not tracheostomy dependent, defendant relies heavily on the expert opinion of Dr. Bianchi, who reviewed the evidence in the medical record and examined Allan in January 2019. During his examination of plaintiff, Dr. Bianchi performed several tests. He first inserted a scope into Allan's stoma to view her vocal folds from below. He instructed Allan to inhale, exhale, and speak so that he could examine the functioning of the folds. The

images recorded from that tracheoscopy indicate that Allan's vocal folds have a narrow opening between them during inhalation and close during exhalation or vocalization. Based on those images, Dr. Bianchi concluded that Allan "has partial function of one of her vocal cords." Tr. 607. Dr. Bianchi also performed a limited exercise test in which he asked Allan to walk approximately 150 feet on a flat surface at a relatively brisk pace and then measured her pulse and blood oxygenation using a finger pulse oximeter. Dr. Bianchi found that Allan's oxygen content went up after the walk and that Allan was not "exhibiting signs of being overtly out of breath." Id. at 610. Dr. Bianchi opined that Allan "has better-than-average exercise tolerance for someone with bilateral vocal cord paralysis under similar circumstances." Id. Based on the evidence in the medical record and his examination of Allan, Dr. Bianchi concluded that Allan was not medically "dependent on [her] tracheostomy to breathe properly." Id. at 612. Instead, Dr. Bianchi and defendant suggest that Allan's ongoing reliance on her tracheostomy is a product of preexisting anxiety—essentially, that Allan is so nervous about any "feeling of having constriction of the airway" that she has not asked her doctors to remove the tracheostomy. See, e.g., id. at 611.

Dr. Bianchi's discussion of the adequacy of Allan's existing airway is not credible. Dr. Larsen, who reviewed Dr. Bianchi's expert report and the images captured during the tracheoscopy, acknowledged that Allan's right vocal fold demonstrates some evidence of movement. Yet Dr. Larsen also pointed out that the glottic opening displayed on those images was significantly narrower than normal. He further explained that although the "sliver" of an opening in Allan's airway allows air to pass through to the lungs, it does so in a highly restrictive way akin to "breathing through a straw." Tr. 133. Dr. Larsen's opinion is consistent with uncontested evidence about Allan's current physical condition. Although Allan often keeps her

tracheostomy capped during the day and uses her normal airway to breathe when engaged in nonstrenuous activities, any mild exertion such as sustained speaking, walking, or climbing stairs results in shortness of breath requiring her to rest and uncap her tracheostomy. Moreover, Dr. Bianchi's conclusion about Allan's exercise tolerance is seriously undercut by his own testimony that "determin[ing] tracheostomy dependence" requires "rigorous exercise testing" far beyond the short, flat, 150-foot walk he conducted with Allan. See id. at 613.[38] Dr. Bianchi's failure to qualify his findings in light of the limited nature of the test he conducted on Allan undercuts his credibility. Contrary to his testimony, the credible evidence introduced at trial showed that although Allan has some movement in her right vocal fold and a narrow airway through which to breathe, that airway is inadequate for a full range of daily activities, rendering Allan dependent on her tracheostomy.

Dr. Bianchi suggests that Allan could further improve her airway enough to eventually remove the tracheostomy by undergoing a "revision cordotomy" procedure—essentially a second cordotomy to remove a larger section of one of her vocal folds. Cf. DEX 150, at 16 (notes from Allan's August 2018 meeting with Dr. Jaime Moore ("Dr. Moore"), a laryngologist, who discussed with Allan the possibility of a revision cordotomy procedure, among other options). There are several reasons to question Dr. Bianchi's suggestion. Dr. Bianchi is far from a cordotomy specialist, having performed only about 20 such procedures in his nearly 30-year career. See Tr. 511. And his testimony gives virtually no attention to the risks accompanying

[38] For example, Dr. Bianchi did not have Allan use a treadmill, a technique Dr. Orestes employed in assessing her breathing capacity. See Tr. 98. Nor did he ask Allan to climb a flight of stairs, something Dr. Bianchi recognized that "many pulmonologists and otolaryngologists" would do. See id. at 608-09. In fact, Dr. Bianchi recognized that Allan has not undergone the type of "rigorous exercise testing" he argued was necessary to develop a reliable view on a patient's tracheostomy dependence. See id. at 613.

such a procedure. As Dr. Larsen explained, treating a patient suffering from bilateral vocal cord paralysis requires a delicate balancing. Although a cordotomy may increase the glottic aperture and thus allow for greater airflow, it also creates a higher risk of aspirating foreign substances into the lungs if the other vocal fold cannot adduct past the midline to close the airway. Allan has personal experience with this issue, having been hospitalized with aspiration pneumonia after her cordotomy. Indeed, it was this legitimate concern that led Allan to hold off on a revision cordotomy. See DEX 150, at 16. Allan's interest in expanding her airway does not necessarily extend to putting herself at greater risk of aspiration. That Dr. Bianchi's testimony paid no attention to this well-known risk further undercuts his credibility.

Most important, defendant's and Dr. Bianchi's theory of Allan's non-tracheostomy-dependence is fundamentally incomplete because it focuses only on Allan's tracheostomy use during daytime hours. In fact, they ignore one of the principal reasons she needs the tracheostomy: to sleep. It was Allan's persistent inability to breathe while reclined, with the resulting interference with her ability to sleep, that drove her back to her doctors for the cordotomy procedure in early 2016. It is uncontested that her sleep apnea symptoms have persisted after the cordotomy and that she uncaps her tracheostomy at night to sleep. Whether Allan's airway is sufficient or insufficient for daytime purposes, the unrefuted evidence establishes that she is dependent on her tracheostomy because she cannot breathe during sleep without it.

At trial, Dr. Bianchi was asked about Allan's need for the tracheostomy during the nighttime:

> [DR. BIANCHI:] . . . Although [Allan's] experts claim she is tracheostomy dependent, there is no evidence for that conclusion. Mrs. Allan keeps her tracheostomy capped or plugged almost all day, which indicates that she has no need for the tracheostomy for the vast majority of her daily activities.

. . . .

> THE COURT: But, Doctor, let me ask you this: What if a person only needs the trach when they're sleeping[?] [I]n other words, when they're sleeping at night, they have gagging or other types of problems that, among other things, prevent them from getting a good seven or eight hours of sleep? Under that situation, wouldn't you say the person was tracheostomy dependent?
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> THE WITNESS: And that is the case in many people with sleep apnea who have tracheostomies. They only use it at nighttime.
>
> THE COURT: But they need it at nighttime.
>
> THE WITNESS: But they need it at nighttime.
>
> THE COURT: So then such a person would be considered trach dependent even though they don't need it during the day when they're doing normal activities and they're awake. They're standing upright, so they don't have the same breathing problems.
>
> THE WITNESS: That is a possibility.

Tr. 658-59 (internal quotation marks omitted). Given the unrebutted evidence that plaintiff needs her tracheostomy to sleep, Dr. Bianchi's unqualified assertion that Allan is not tracheostomy dependent is incredible and unreliable. And without Dr. Bianchi's opinion, defendant is left with no evidence to support its assertion that Allan does not require a tracheostomy. For these reasons, plaintiff has carried her burden of demonstrating that her bilateral vocal fold paralysis, which was caused by her doctors' medical negligence surrounding her total thyroidectomy, has rendered her tracheostomy dependent.

2. Allan's Life Care Plan

As part of her claim for damages, plaintiff submitted a life care plan prepared by Susan Riddick-Grisham ("Riddick-Grisham"), see PLEX 106, a qualified case manager and life care

planner who testified at trial.[39] Plaintiff also elicited testimony from Dr. Andrew Schneider ("Dr. Schneider"), an oncologist,[40] and Thomas C. Borzilleri ("Borzilleri"), an economist.[41] Riddick-Grisham's life care plan estimated a lifetime total of $3,232,828.85, comprising the following categories: $86,523.13 for psychological counseling; $28,041.14 for wheelchair-related needs; $2,702.00 for stairlift batteries; $110,791.73 for medications and vitamin supplements; $1,269,650.87 for medical supplies and equipment; $1,124,914.50 for in-home personal care, childcare, and housekeeping services; $63,934.72 for routine medical care; $18,526.00 for a scooter lift; and $527,744.76 for hospital admissions to treat complications. PLEX 106. Borzilleri calculated the present value of the life care plan, as adjusted for plaintiff's life expectancy,[42] to be approximately $3.5 million. See Tr. 380. Defendant argues that the plan's estimates, even leaving aside the question of long-term tracheostomy dependence, are grossly overstated. Plaintiff disagrees, arguing that the estimates are reasonable if not conservative estimates of what Allan will require as a result of her injuries.

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[39] For Riddick-Grisham's curriculum vitae, see PLEX 104. Plaintiff proffered Riddick-Grisham as an expert "in the fields of life care planning, medical case management, and . . . costing." Tr. 361. Defendant offered no objection.

[40] For Dr. Schneider's curriculum vitae, see PLEX 96. An oncologist is a physician who specializes in the prevention, diagnosis, and treatment of cancer. Plaintiff proffered Dr. Schneider as an expert in "general oncology, cancer staging, the AJCC Staging Manual, life expectancy for papillary cancer, hospice and palliative care, long-term care planning, cost of treatment, as well as prognosis, causation, and damages." Tr. 324. Defendant did not object to Dr. Schneider's qualifications in those areas.

[41] Plaintiff proffered Borzilleri as an expert witness on the present value of Allan's life care plan costs, Tr. 378-79, and defendant did not object.

[42] Borzilleri used Virginia's life expectancy table in calculating the present value of plaintiff's life care plan. See Tr. 380-82 (explaining that he used the state life expectancy table and was instructed to assume that Allan's life expectancy would be normal); see also Va. Code Ann. § 8.01-419 (setting forth the life expectancy table).

Defendant successfully identifies a few ways in which the plan is imperfect. Because medical care provided through the TRICARE system does not result in medical bills, Riddick-Grisham had to rely on other sources of data in estimating plaintiff's future medical expenses. As is customary for life care planners, Riddick-Grisham's pricing estimates are based on full retail prices for medical supplies, even though hospitals or insurance companies can often provide those supplies for less than full market value. The life care plan also included a few items—such as saline bullets, a tracheostomy tube holder, and a nebulizer—that Allan either no longer uses or has never used. And the life care plan sets out $2,702.00 for stairlift batteries, which fails to reflect that Allan has since moved into a single-story home and no longer needs either a stairlift or batteries. Finally, although some portion of Allan's future medical costs assumes that she has COPD, that diagnosis is somewhat uncertain.[43] In these respects, therefore, plaintiff's life care plan is overinclusive.

Nonetheless, defendant's arguments do not sufficiently undercut the evidence in the record so as to push plaintiff's claim for damages below the statutory cap. To begin, it is black-letter law in Virginia that although a plaintiff "must show the amount of [her] damages with

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[43] In arguing that she has COPD, plaintiff relies on Dr. Sherner's finding that her airway was "severe[ly] obstruct[ed]." PLEX 48, at 629. As defendant points out, Dr. Sherner's report does not definitively diagnose Allan with COPD, must be "interpret[ed] with caution," and in fact states that plaintiff's pulmonary function is "suggestive of a peripheral airway obstruction," id., which may indicate an obstruction outside of the lungs, see Tr. 633. In the end, the Court did not hear expert testimony from any pulmonologist and so cannot definitively conclude that Allan currently has COPD. Nonetheless, the evidence supports the conclusion that Allan is certainly highly vulnerable to COPD, along with its negative health consequences, given the high degree of stress on her airway. See, e.g., Tr. 117 ("[W]ith every infection and aspiration or airway inflammation event, lung tissue is replaced by scar tissue, such that [the] patient's alveoli, which is the distal organ in the lungs, are unable to exchange oxygen and carbon dioxide in an adequate fashion."). And in any event, even if the Court excludes the COPD-related expenses from the life care plan, plaintiff's reasonably certain damages remain far above the statutory damages cap.

reasonable certainty[, p]roof with mathematical precision is not required." Hailes v. Gonzales, 151 S.E.2d 388, 390 (Va. 1966). Many of defendant's arguments—for instance, that plaintiff's medical care cost estimates are imprecise because they are not based on previous medical bills, which are not issued under TRICARE, see Tr. 369—take issue only with the exactitude of plaintiff's measures, not with their reasonableness. Those arguments are of no value. Further, many of defendant's arguments miss the point entirely. For instance, defendant contends that since plaintiff's July 2015 thyroidectomy, she has not relied on any in-home personal care aides, live-in nannies, or housekeepers, all of whom are provided for in the life care plan. Allan responds that she has not been able to afford that care and has instead relied on her husband, an extended circle of family and friends, and in some cases her young children to shoulder those burdens. The pertinent question is not what Allan has done in the wake of her surgery, but rather what care and services she will require, at least to a reasonable degree of medical certainty, as a result of her injuries.[44] The same is true for defendant's argument that Riddick-Grisham should not have included costs for one five-day hospital admission every other year going forward because Allan has not been admitted to a hospital since 2016. Riddick-Grisham's task was to create a life care plan that reasonably projected Allan's costs into the future, see Tr. 355 ("[T]he life care plan identifies what we can reasonably anticipate a patient is going to need in the

[44] In another variation of the same argument, defendants dispute Riddick-Grisham's price estimate for a psychiatrist or a psychologist by pointing out that Allan has occasionally seen a less expensive social worker since her surgery. There is no requirement under state law that injured plaintiffs select the cheapest available treatment; rather, as with all matters involving damages, the question is whether the care is reasonable and sufficiently causally connected to remedying the plaintiff's injury caused by the negligent defendant. Based on the evidence in the record, the Court has no difficulty concluding that Allan is entitled to treatment from a mental healthcare professional. Such treatment is a necessary consequence of the severe mental anguish, embarrassment, and anxiety Allan has experienced because of her doctors' negligence.

future."), and defendant did not effectively rebut Dr. Schneider's testimony that the biennial hospital admission estimate was conservative given plaintiff's health conditions. Likewise, defendant protests that Riddick-Grisham included a higher number of hours of daily childcare than Allan herself had estimated she would require. Although an injured plaintiff's own assessments of her needs are relevant, it is the responsibility of life care planning professionals—and ultimately this Court—to perform a reasonable assessment of her actual needs going forward. Cf. id. at 376 (Riddick Grisham: "I have p[atients] that overexaggerate their care needs, and I have patients that underestimate their care needs."). In sum, defendant's attempts to highlight certain imperfections in the life care plan do not alter the Court's conclusion that Riddick-Grisham was a credible expert witness who carefully put together a plan based on reliable evidence and who estimated Allan's future costs in a reasonable and conservative way.

Finally, defendant wholly ignores several ways in which the life care plan substantially underestimates Allan's recoverable damages. As Allan explained at trial, nearly all of the estimates she provided to Riddick-Grisham were made before she and her husband decided to separate and file for divorce. Without assistance from her husband, who testified as to the amount of household duties he had been handling, plaintiff will have to care for herself and her four children alone. As plaintiff persuasively testified at trial, many of those figures could effectively be "double[d]" given the couple's impending divorce. See Tr. 293. She will also be without medical insurance through TRICARE. More important, apart from a provision for mental health treatment, the life care plan addresses only future costs for the medical and physical aspects of plaintiff's injuries. The plan accordingly does not account for any of plaintiff's recoverable damages for physical pain, Murphy v. Va. Carolina Freight Lines, Inc., 213 S.E.2d 769, 773 (Va. 1975), and suffering, which includes "the mental anguish resulting

from the loss of enjoyment of life," Bulala v. Boyd, 389 S.E.2d 670, 677 (Va. 1990); see Bell v. Kirby, 311 S.E.2d 799, 802 (Va. 1984) (recognizing the propriety of a damages award for both "physical pain and mental anguish"); see also Murphy v. United States, 833 F. Supp. 1199, 1210 (E.D. Va. 1993) (holding that under Virginia law, a personal injury plaintiff is entitled to recover not only for bodily injuries, physical pain, and mental anguish but also for "any disfigurement or deformity resulting to [the plaintiff] and any humiliation or embarrassment associated therewith" as well as "any inconvenience and discomfort caused in the past and any which will probably be caused in the future"). The record clearly shows that Allan has experienced tremendous pain and psychological distress as a consequence of her injuries and that she lives with that pain, anxiety, and anguish on a daily basis. Her injuries limit the way she breathes, speaks, and sleeps. They drastically affect the ways in which she experiences the world, interacts with her children, and plans for the future. Although it can be difficult to affix a monetary amount to such unquantifiable experiences, the Court concludes that any proper measure of plaintiff's pain and suffering would be at least $500,000.

For these reasons, plaintiff has shown, by a preponderance of the evidence and with an appropriate degree of certainty, that she is entitled to well over Virginia's $2.2 million damages cap. Even if plaintiff's life care plan estimate of $3.5 million were reduced by one-half to $1.75 million, she would remain entitled to at least $500,000 as a result of the pain, suffering, and diminution in the enjoyment of life that the evidence clearly supports. That element pushes her recoverable damages above $ 2.2 million. And although defendant attempted to undercut the estimates included in the life care plan, it did not come close to a showing that the estimates

should be cut by one-half or more.[45] For these reasons, the Court finds that plaintiff is entitled to recover $2.2 million from defendant.

III. CONCLUSION

For the reasons stated above, judgment will be granted in favor of plaintiff against defendant in a total amount of $2.2 million, with postjudgment interest at the federal rate, by an appropriate Order to be issued with this Memorandum Opinion.

Entered this 23rd day of July, 2019.

Alexandria, Virginia

/s/
Leonie M. Brinkema
United States District Judge

[45] As an illustration, assume arguendo that defendant has successfully demonstrated that the life care plan estimates should be adjusted by removing the stairlift battery expense, halving the estimated cost for psychological counseling, and applying 75% reductions to the estimates for medical supplies and equipment, in-home personal care, childcare, and housekeeping services, and hospital admissions. Those findings would reduce the life care plan by approximately $775,000—leaving the total well above the applicable $2.2 million gap even before pain and suffering damages are considered.