



The Sensor

Alternative Uses and Effects of Ketamine

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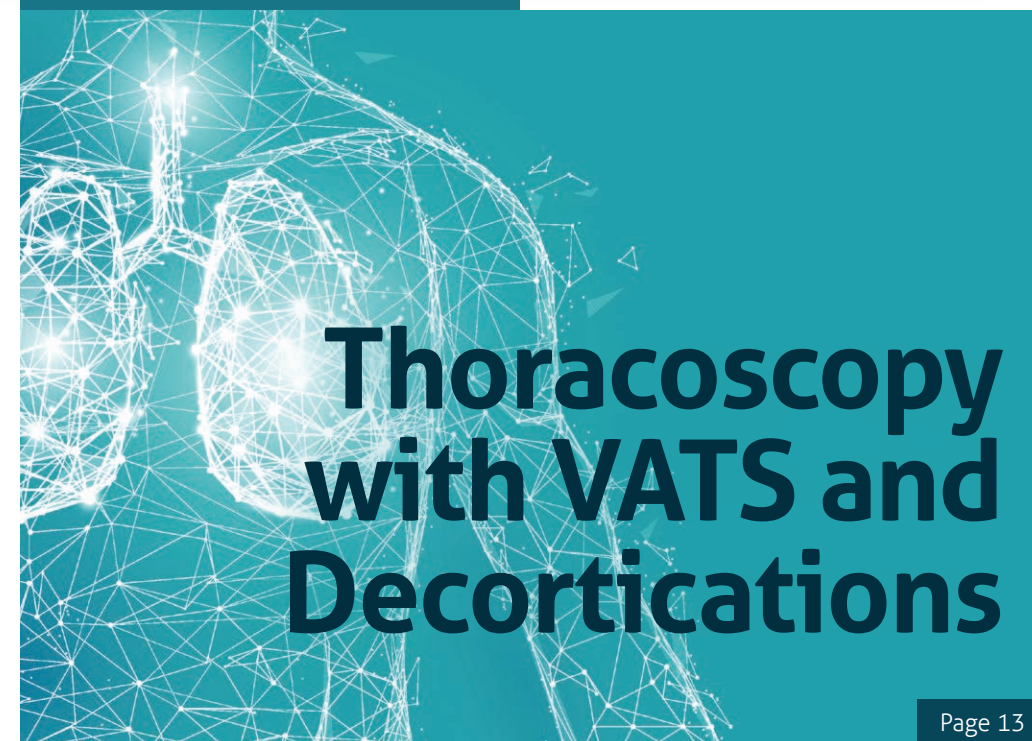
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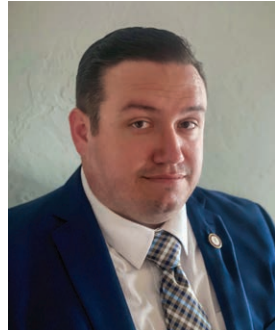
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Perspective

PRESIDENT'S LETTER



Greetings ASATT Members!

As this is my first address to you all as President of ASATT, I want to share my gratitude for the opportunity to serve you all and the profession over the next year. I have been in this profession since 2010. I began my career in Jackson, Mississippi, and to say

Anesthesia technology changed my life is an understatement. This profession has been the catalyst that drove me to California and provided me the opportunity to start a program in Oklahoma City; I am eternally grateful to this profession and those whom I have had the pleasure to call colleagues. I am incredibly passionate about this profession, and colleagues from across the country who pursue this profession with grit, determination, and passion. To the broader anesthesia technology community, I want to say thank you for the hard work and love you bring to operating rooms across the United States.

We have exciting plans ahead for the organization and profession. As a board member since 2020, I have seen the organization transform and grow. My goal and vision for the next 12 months are to develop this profession's imprint nationally. The plan will take a lot of work and dedication, but it is work that the board and I are ready to tackle.

As you get to know me over the next year, you will see that I am a task-driven person who lays out plans and works to execute those plans. The way I seek to build the profession up for the next year is multifaceted.

1. **Increase the number of ASATT State component Societies.** At the national conference, I spoke about this process, and I am happy to say we are making progress on four component societies as I write to you all today. Building up our local networks across the country is vital to building a professional voice.

2. **Increase the number of programs in the country.** We currently have ten fully accredited programs the across the United States, and given the relative youth of our academic sector, this is something to praise. Additionally, with the Practical pathway to certification beginning in January, I feel this will only encourage higher education institutions to pursue formalized educational programs.
3. **Increasing ASATT's outreach with hospitals, legislatures, and State & Federal agencies.** ASATT has fostered a meaningful collaboration with the CoA-ATE and other organizations. This year we fully intend to maximize our outreach. I look forward to updating you on our progress in those areas. My goal is to lay the groundwork and build momentum so that the board can continue this work into the future.
4. **Growing our committees and making them dynamic.** ASATT is nothing without its members. My goal is to see our committees become dynamic vessels of change. So I am asking you, the reader of this letter, to consider joining a committee and being involved in the work of growing this profession. We need your passion, ideas, and innovations to see this profession develop.

This time for the profession is crucial, we have accomplished a lot in 2022, and I am determined to make 2023 an even more pivotal year for the profession and ASATT.


Bryan Fulton, Cer.A.T.T.
ASATT President 

Highlights

SOCIETY NEWS

Next Educational Webinar coming soon.

Mark your calendars now and join us for ASATT's 4th quarter webinar on Saturday, November 12, 2022, 12pm – 4pm CDT. You'll gain valuable information with four outstanding opportunities to enhance your skills within the anesthesia technology field.

Confirmed speakers are Dr. Joe Answine, Dr. Kerry Kreidel and Gary West, Cer.A.T.T. Registration will open soon! 

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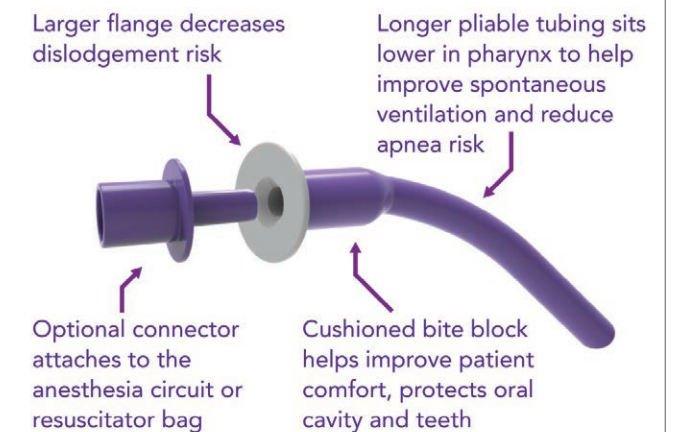
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Spotlights

MEMBER HIGHLIGHT



Sara Paraspolo, AS, Cert.A.T.T.

What is your current job title?

Clinical Director and Faculty at the Kaiser Permanente School of Anesthesia Technology

How many years have you been in the Anesthesia Technology profession?

I have been in the anesthesia profession for 11 years.

What do you find most challenging about your job?

The transition from being in the OR full-time to full-time education. The transition has been wonderful due to the support I have, but I miss patient care.

How many years have you been an ASATT member?

I have been a member of ASATT for 10 years now.

What is your fondest memory of ASATT?

Taking my newborn daughter (at the time) to a national conference. Thankfully my husband was there to help as well.

What has been your proudest accomplishment? (Personal life, professional life, or both.)

Doing the ministry my husband & I do with the youth of our community & being a part of so many surgical emergencies that saved lives.

What is your favorite food?

Anything my husband makes...and Cuban food.

People would be very surprised to know that...

I sing & play a few instruments

What do you enjoy doing in your spare time?

Camping in the wilderness

What is your favorite type of music?

All genres of Christian music

What is your favorite movie?

Forrest Gump

What would you like to get around to doing one of these days?

See more of the world. 

SCIENCE AND TECHNOLOGY

Alternative Uses and Effects of Ketamine



TIFFANY BRUNO

ANESTHESIA TECHNOLOGY PROGRAM,
OKLAHOMA CITY COMMUNITY COLLEGE

While ketamine is usually seen in operating rooms, it has also proven to be of more significant value than many researchers would think. It has evolved from both IV use to intranasal use. Ketamine has been used anywhere from postoperative analgesia to treating bipolar depression, treatment-resistant depression, and post-traumatic stress disorder in veterans. While there is not much research from a psychological standpoint, the research that has been done has proved the significance that ketamine has made on common issues that should be addressed on a more severe level. With increased suicides over the past ten years, ketamine could help those at a higher risk because of their depression.

HISTORY

Ketamine has had a long-standing history of use on the battlefield, helping wounded soldiers be able to live while having limited resources. Because ketamine was said to produce what is known as a dissociative form of analgesia, the patients could endure surgeries in the field with little to no anesthetic. It has also gone through both intravenous and intranasal stages to help veterans with treatment-resistant depression and post-traumatic stress disorder to figure out which has the better response.

The discovery of ketamine started with the search for an ideal anesthetic agent with analgesic properties among cyclohexylamines (Mion, 2017, p.571). This led to the first synthesis of phencyclidine or PCP in 1956 (Wei et al., 2020). During human trials to investigate the potential of PCP as an anesthetic, it was noted that it caused increases in blood pressure, respiratory rate, and minute volume, conserving the laryngeal and corneal reflexes (Mion, 2017, p.571). PCP also caused nystagmus (involuntary eye movement) and an increase in salivation. There was some success in the trials conducted with the drug because it did not cause depression in cardiovascular or respiratory functions (Mion, 2017, p.571). However, it did cause severe excitation in some patients, sometimes lasting over 12 hours on a single dose, making PCPs use extremely limited. Eticyclidine, or PCE, was then discovered in the late 1950s as an alternative; however, it was not extensively used in clinical practice with the hallucinations and discovery of ketamine shortly after (Li & Vlisides, 2016). There was further synthesis of the related compound in the hopes that it would reduce the side effects of PCP (Mion, 2017, p. 572). It was then that the laboratories decided to synthesize a unique series of phencyclidine derivatives, using animals to screen these drugs, especially monkeys. One of the agents was synthesized in 1962 that produced an excellent short-acting anesthetic and was selected for human trials as CI-581 (Mion 2017, p. 572). Because it was a ketone together with an amine, it was named ketamine (Mion, 2017, p.572). It was later described in 1965 as a

"...ketamine was officially coined as a 'dissociative anesthetic' due to the apparent disconnect in the patients."
(Butterworth, 2021, p.171)

compound with cataleptic, analgesic, and anesthetic actions without hypnotic properties (Wei et al., 2020).

After being patented in Belgium in 1963, ketamine began as a veterinary anesthetic (Li & Vlisides, 2016). The first human administration was conducted in 1964 to volunteer prisoners at the Jackson Prison in the state of Michigan, with the incidence of adverse effects in one of three. Patients described their feeling as floating in outer space and having no feeling in their limbs, and the researchers published their first clinical studies in 1965 (Li & Vlisides, 2016). Thus, ketamine was officially coined as a 'dissociative anesthetic' due to the apparent disconnect in the patients (Butterworth, 2021, p.171). It was then formally patented for both animal and human use in 1966, becoming available by prescription in 1969 in the form of ketamine hydrochloride under the name Ketalar (Mion 573).

It was officially approved for human consumption by the FDA in 1970 (Pardo & Miller, 2017, p.115). Its sympathomimetic properties and wide safety margin started as a field anesthetic for soldiers in Vietnam (Mion, 2017, p.573).

During a conflict between the Palestine Liberation Army and the Jordanian Army in 1970, many casualties started to overwhelm the hospitals, most of which were children (Mercer, 2009, p.146). A medical team was called from the UK to Cyprus to assist with the overwhelming number of patients, and the surgical team recorded their use of ketamine (Mercer, 2009, p.146). Due to their demographic, many patients were frightened and found the procedures painful (Mercer, 2009, p.146). A dose of 10 mg/kg treatment

of ketamine allowed a procedural time of 30-50 minutes before signs of discomfort (Mercer, 2009, p.146). The nurses could give doses of ketamine to the children to keep them in a trance-like state for 20 minutes at a time to change the dressing on burns (Mercer, 2009, p.146). In this aspect, it has shown to excel in situations with little access to complete medical supplies and to assist patients that might otherwise be difficult to work on.

The value and safety of ketamine as an anesthetic and analgesic continue to demonstrate its effect on the patient population. While there are other drug options on today's market, ketamine has still been used in the operating room in situations that might otherwise impede the healing process. Its uses have also extended to manage treatment-resistant depression in lower dosages (Mion, 2017, p.573). Evolution can be seen from when it started to what it has become today.

PHARMACOKINETICS AND PHARMACODYNAMICS

Ketamine is highly lipid soluble, meaning that it can dissolve in fatty tissues, so it undergoes a rapid breakdown and redistribution to the peripheral tissues in the body (Butterworth et al., 2021, p.171). Ketamine then gets metabolized by the liver using N-demethylation (removing the methyl group from a molecule) and ring hydroxylation pathways (converting the lipid-soluble into water-soluble), making it easier to excrete it from the body (Kurdi et al., 2014). It is then excreted through urine and feces as norketamine and hydroxylated derivatives, norketamine being the primary metabolite for ketamine and being one-third to one-fifth as potent as an anesthetic (Kurdi et al., 2014).

Since ketamine stimulates the cardiovascular system, it does increase heart rate, blood pressure, and cardiac output mediated mainly through the sympathetic nervous system (Butterworth et al., 2021, p.172). It does, however, have minimal effects on the central respiratory drive, producing airway relaxation by acting on various receptors, inflammatory cascades, and bronchial smooth muscles (Pardo & Miller, 2014, p.116). Ketamine increases salivation and muscle tone and creates catalepsy, amnesia, analgesia, and some anesthetic actions (Kurdi et al., 2014). Catalepsy created by ketamine is a unique dissociative state where the patient appears awake with their eyes open but is detached from their surroundings (Kurdi et al., 2014).

"Even though ketamine went through the phase of what they called the 'nightclub' drug during the 1970s, it has gone from abuse to therapeutic in the effects that it causes."
~ Tiffany Bruno ~

USES ON PAIN

The first documentation of ketamine's usage was that of pediatric patients undergoing ophthalmologic procedures and adults and children undergoing wound dressing changes (Subramanian, 2022, p.6). It was chosen for such surgeries because it preserves airway and respiratory function while providing sedation and local anesthesia (Butterworth et al., 2021, p.174). The use of ketamine has been used as an adjunct with opioids to help minimize opioid side effects and reduce opioid analgesic requirements (Pardo & Miller, 2017, p. 116). It has been shown in pre-clinical studies to diminish immediate hyperalgesia while improving the analgesic effect of fentanyl (Subramanian, 2022, p.6). Ketamine has also helped reduce the need for morphine in patients with cancer-related pain, especially those with a neuropathic element (Subramanian, 2022, p.7). The onset and severity of chronic pain have been reduced up to a month after perioperative ketamine administration; however, for sustained chronic pain relief, the patient may require more frequent

or extended periods of administration (Pardo & Miller, 2017, p.116). With how variable pain control is in clinical trials, there is no consensus on IV ketamine dosage or duration (Subramanian, 2022, p.7). As an alternative to IV ketamine, intranasal has shown success as a breakthrough pain relief, with an onset of around 10 minutes lasting up to an hour (Butterworth et al., 2021, p.172).

USES ON DEPRESSION

Though its original uses were to find an alternative anesthetic agent, ketamine has become much more than that over the years. It has become the thing that has helped mental illness in those suffering from depression, post-traumatic stress disorder (PTSD), and even those with suicidal thoughts. It has even been successful as an adjunct to drugs like lamotrigine in treating unipolar and bipolar treatment-resistant depression. Even though ketamine went through the phase of what they called the 'nightclub' drug during the 1970s, it has gone from abuse to therapeutic in the effects that it causes.

Future studies should be done on the effects that ketamine has in conjunction with other drugs. However, the studies that have been posted have only shown positive results. The study of ketamine and lamotrigine aimed to find any scientific ground for combining the two in treating mood disorders (Wilkowska 1). Lamotrigine is a first-line agent used for bipolar depression as a monotherapy and adjunctive treatment for resistant cases (Wilkowska 3). It is approved by the FDA for the long-term treatment of bipolar disorder to prevent relapse in adult patients who suffer predominantly from depressive states (Wilkowska 3). Though little is known about the interactions between ketamine and other drugs, the studies for treatment-resistant depression are piling up (Wilkowska 3). During these studies with the simultaneous use of ketamine and lamotrigine, no serious adverse events were observed, showing relative safety (Wilkowska, 2022, p.4). Though information from the studies is limited, we can conclude that preclinical suggests a possible synergistic antidepressant effect of lamotrigine and ketamine (Wilkowska, 2022, p.1). Because one of the possible side effects of ketamine is seizures, there is evidence that lamotrigine could reduce those effects (Wilkowska, 2022, p.1). Lamotrigine can be used alone or with other medications to prevent and control seizures (National Center, 2022).

In a study done with cancer patients experiencing severe depression and suicidal ideation, 26 hours into a ketamine infusion, the patient was observed to have a euthymic effect and no suicidal ideation (Subramanian 7). A couple of things were recorded in a clinical trial observing IV ketamine as a depression and pain agent (Subramanian 7). The researchers provided all the treatment-resistant depressed patients with six subanesthetic ketamine infusions over two weeks. They found that those with pain and depression had higher responses and remission than those that started with no pain symptoms (Subramanian 7). A headache also occurred in around 19% of ketamine infusions and resolved after the administration (Subramanian 7).

Mental disorders are a growing problem in the world, coinciding with the increase in disease and economic costs, while also maintaining studies that show suicide becoming

an increasing problem (Coelho da Costa 15). It has become a major problem in the middle to low-income countries among people aged 15-29 and has become the second leading cause of death in that age group (Coelho da Costa 16). It should be addressed to make treatment accessible to those who usually have problems affording it.

USES IN THE OR

Like on the battlefield, ketamine is used in the operating room on higher-risk patients. It has been utilized in patients that are in shock or are hypotensive, as it can help to raise their blood pressure (Kurdi et al., 2014). It has been shown to work advantageously on hemodynamically compromised patients during a rapid sequence induction used in emergent cases when the patient has not undergone proper pre-

operation checks (Kurdi et al., 2014). A study also showed ketamine as a safe alternative to etomidate (a short-acting anesthetic agent that creates a stable hemodynamic profile) for intubation in critically ill patients with sepsis (Kurdi et al., 2014). It is also effective in patients with brain injury, as it creates a neuroprotective effect against cerebral ischemia

and anticonvulsant activity and has the potential to limit hypotension and hypotension-related secondary brain injury (Kurdi et al., 2014).

Ketamine's bronchodilation properties make it great for intubating patients with reactive airway diseases (Kurdi et al., 2014). It can also help to protect against the precipitation of asthma and bronchospasms (Kurdi et al., 2014). Ketamine has been the bronchodilator of choice in the ICU as rescue therapy for refractory bronchospasm (Kurdi et al., 2014).


Finally, ketamine is widely used in the burn unit to provide analgesia during dressing changes, excision, grafting, and sedation (Kurdi et al., 2014). The significant advantage over other agents is that it helps preserve the airway and spontaneous respiratory function while providing sedoanalgesia (Kurdi et al., 2014). It is especially desirable for intramuscular injection when finding a suitable vein proves difficult (Kurdi et al., 2014). Ketamine therapy studies have shown significant improvement in survival in rats with

severe burn injuries (Kurdi et al., 2014). This is estimated to be due to eliciting heat-shock response due to the evidence by the expression of the heat-shock protein 70 in myocardial cells and cerebral tissue (Kurdi et al., 2014).

ADVERSE EFFECTS

The scientific community was hesitant to use ketamine as a treatment option for mental disorders and pain for three reasons: first, it had the potential for abuse; second, it was thought that the NMDA antagonism would exacerbate underlying mental illnesses; third, ketamine has the potential to lead to psychotomimetic effects like catatonia, hallucinations, delusions, and maniacal excitation, especially at higher doses (Subramanian 5). Psychotomimetic side effects can show within 10 minutes of infusion and subside within 40 minutes (Subramanian 5). It can cause acute psychotic reactions at higher concentrations, with reports of subjects experiencing a feeling of 'well-being' (Subramanian 5). It has also shown that a co-administration of oral clonidine has helped to decrease these effects (Subramanian 5). Ketamine can cause impairment even with subanesthetic doses given over 40-120 minutes in healthy volunteers (Subramanian 5). Hemodynamic changes have also been reported as increases in heart rate and blood pressure that reverts to baseline after 10-30 minutes (Subramanian 5). Chronic recreational use has led to urinary urgency, dysuria, and hematuria, as well as an association with the thickening of the bladder wall and peri-vesical inflammation (Subramanian 5). There have been increases in exposure for recreational uses to ketamine which has had some linked seizure effects. However, it is still uncommon (Palamar 2046)

CONCLUSION

Though ketamine is seen as a dissociative drug used in the field of war or the operating room, it has shown that it has more capability than many researchers would come to realize. It has the possibility of helping mentally ill patients that feel like they have no other options. This could be the start of a future to help reduce the number of suicides that happen daily. More research should be done to showcase what ketamine can handle, and it should be made more available to those who genuinely need it. 

"This could be the start of a future to help reduce the number of suicides that happen daily."

~ Tiffany Bruno ~

References

- Butterworth, J. O. H. N. F. (2022). *Morgan and Mikhail's clinical anesthesiology*. McGraw Hill Education.
- Coelho da Costa, Bruno Filipe, et al. "Suicide Mortality Rate as a Sustainable Development Goal (SDG): A Bibliometric Analysis." *Psychiatric Quarterly*, vol. 93, no. 1, Mar. 2022, pp. 15-26. EBSCOhost, <https://doi-org.occc.idm.oclc.org/10.1007/s11226-020-09858-8>.
- Kurdi, M. S., Theerth, K. A., & Deva, R. S. (2014). Ketamine: Current applications in anesthesia, pain, and critical care. *Anesthesia, Essays and Researches*, 8(3), 283-290. <https://doi.org/10.4103/0259-1162.143110>.
- Mercer, S J. "The Drug of War' - a Historical Review of the Use of Ketamine in Military Conflicts." *Journal of The Royal Naval Medical Service*, vol. 95, no. 3, 2009, pp. 145-150., <https://doi.org/10.1136/jrnms-95-145>.
- Mion, Georges. "History of Anaesthesia." *European Journal of Anaesthesiology*, vol. 34, no. 9, 2017, pp. 571-575., <https://doi.org/10.1097/eja.0000000000000638>.
- National Center for Biotechnology Information. "PubChem Compound Summary for CID 3878, Lamotrigine" *PubChem*, Oct. 2022, <https://pubchem.ncbi.nlm.nih.gov/compound/Lamotrigine>. Accessed 3 October 2022. Jr, P. M. C. (2018). *Basics of anesthesia*. Elsevier.
- Palamar, Joseph J., et al. "Trends in Ketamine Use, Exposures, and Seizures in the United States up to 2019." *American Journal of Public Health*, vol. 111, no. 11, Nov. 2021, pp. 2046-2049., <https://doi.org/10.2105/ajph.2021.306486>.
- Subramanian, Subha, et al. "Ketamine as a Therapeutic Agent for Depression and Pain: Mechanisms and Evidence." *Journal of the Neurological Sciences*, vol. 434, 8 Jan. 2022, p. 120152., <https://doi.org/10.1016/j.jns.2022.120152>.
- Wilkowska, Alina, et al. "Ketamine and Lamotrigine Combination in Psychopharmacology: Systematic Review." *Cells*, vol. 11, no. 4, 12 Feb. 2022, p. 645., <https://doi.org/10.3390/cells11040645>.

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QUIZ
Click here for a copy of the quiz.

Outlook

PROGRAM DIRECTOR INSIGHTS



TANVEER KHAN, Cert.A.T.
CLINICAL DIRECTOR AT
TARRANT COUNTY COLLEGE

Tarrant County College was established by a countywide election on July 31, 1965, as Tarrant County Junior College, the name change coming in 1999. The South Campus opened in 1967, followed by Northeast (1968), Northwest (1976), Southeast (1996), Trinity River Campus (2009) and TCC Connect Campus (2015). The Erma C. Johnson Hadley Northwest Center of Excellence for Aviation, Transportation and Logistics opened in Fall 2014 at Alliance Airport as part of the Northwest Campus. The College District is governed by a seven-member Board of Trustees elected for staggered six-year terms in single member districts.

Enrollment growth has been steady throughout recent years. The South Campus, at 4,772, had the largest opening-day enrollment of any community college in the nation up to that time. Overall credit student enrollment passed the 20,000

mark in 1980 and exceeded 50,000 in the fall of 2011. Recently, TCC was named the seventh-largest college or university in Texas.

TCC celebrated its Golden Jubilee in 2015, by recognizing 50 years since the college was established.

Tarrant County College District provides affordable and open access to quality teaching and learning.

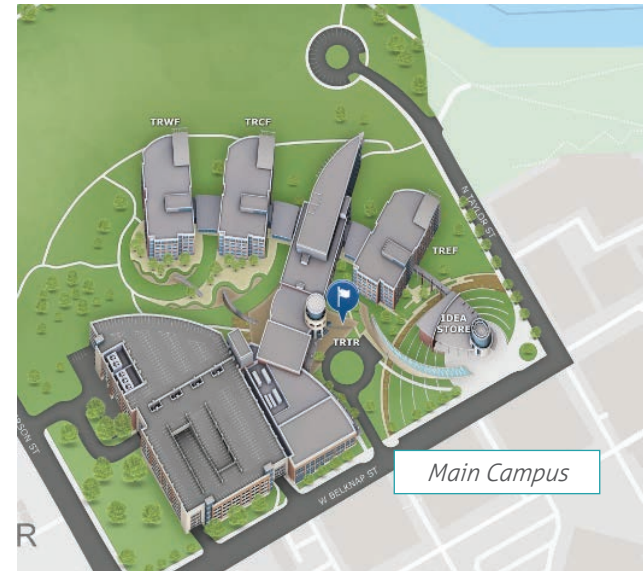
The College carries forward its values from the Vision 2015 Strategic Plan:

- **Student Success:** Belief in providing quality instruction, resources, and support services to assist our students in achieving their lifelong goals
- **Access:** Belief in providing educational opportunities for all members of the community
- **Excellence:** Belief in providing outstanding quality in educational programs, administrative support, and services to its students, faculty, and staff
- **Diversity:** Beliefs that the College should reflect the diversity of the community
- **Innovation and Creativity:** Belief in cultivating a learning environment that evaluates and incorporates emerging technologies and methodologies to enhance the quality of instruction and administrative support for our students, faculty, and staff.

The College has adopted the following goals to support students and the community:

- **One College:** TCC will function as One College to provide a consistent and successful student experience.
- **Student Ready College:** TCC will put students at the core of all programs and services, so that they are welcomed, engaged, and supported inside and outside the classroom.
- **Serve the Community:** TCC will serve the community and be its first choice for partnership.

Trinity River Campus is located in downtown Fort Worth, the heart of Tarrant County. The campus has two sections, the Main campus, and the Trinity River East campus, which houses the Allied Healthcare programs, including the Anesthesia Technology Program.



The Anesthesia Technology Program at TCC has completed the initial Letter of Review process with CAAHEP. We are looking forward to becoming the next accredited program with ASATT and the only Anesthesia Technology program as of writing this article in the State of Texas. If interested in contacting or learning more about Tarrant County College or the Anesthesia Technology Program, please visit our website. <https://www.tccd.edu/academics/courses-and-programs/programs-a-z/credit/anesthesia-technology/>

The Trinity River Campus East Center for Health Care Professions offers a variety of programs that support the health care services industry—one of the fastest growing segments of the Tarrant County economy. Our fully accredited programs produce licensed professionals who are ready to enter the workforce. There are currently 15 active programs including the Anesthesia Technology Program with 2 new programs currently under development.

The Tarrant County College mission is to graduate highly qualified Health Care Professionals that exhibit a desire to serve and advocate for patient safety with a spirit of excellence and an aspiration for lifelong learning.

Trinity River Campus East features and advantages include:

- Simulation hospital offering real world experience to students
- Multiple learning opportunities with varied and complex conditions
- Reduced impact on clinical sites
- Increased exposure to bedside care situations
- Increased opportunities for collaborations and internship



Left to right: Mr. Tanveer Khan, Cer. A.T., Clinical Director at TCC; Mr. Bob Reno, Cer. A.T. at UT Southwestern Clements Hospital; Mrs. Catherine Reidy, CRNA, Interim Program Director at TCC



Left to right: Mr. Mohamed Tlass, Assistant Dean of Health Sciences at Tarrant County College; Mrs. Catherine Reidy, CRNA, Interim Program Director at TCC; Mr. Tanveer Khan, Cer. A.T., Clinical Director at TCC

Learnings

STUDENT CORNER



Melissa Woodward


My experience started when I got accepted into the Anesthesia Technologist Program at TCCD in Fort Worth Texas. Opening the email, I immediately had tears and started gasping for joy!

When the program started, I was overwhelmed with a whole new terminology, machines and a new environment. I went to a seminar over the summer and got to see what the different aspects of the operating room system has for the Anesthesia Care Team and participated in it. I knew I was going into the right program. When I walked into the laboratory for class it was different now, it was my time to troubleshoot,

disinfect and get tools ready for the next "surgery". Going on field trips to the actual hospital and seeing an operating room in a different perspective (not being a patient), I was like a little girl on Christmas day.

Challenges that I have faced is that I am a hands-on type of person, waiting for clinicals to start and not be able to do what is being taught. Just doing the book work can be repetitive but learning the pharmacology part and what they do to the body and mind is very interesting.

I feel a disadvantage that I have is I have never been in a medical working environment, getting used

to the jargon, and being responsible for helping a life get to their highest level of health. Even though these are challenges I still feel that this is the reason why I will excel. I love over coming my challenges and making them a positive. The program has taught me to speak up for when something needs improvement and to feel comfortable with the aspects of class and being in the setting of a career instead of a job. I can't wait to be able to come back to the beginning to help future students to get to the next level of a Certified Anesthesia Technologists, Cert. A.T.T. 

BEST PRACTICES IN HEALTHCARE

Thoracoscopy with VATS and Decortications



CAITLIN LASSITER
ANESTHESIA TECHNOLOGY PROGRAM,
OKLAHOMA CITY COMMUNITY COLLEGE

Introduction

A 29-year-old male weighing 79 kilograms and 73 inches in height came into the emergency room as a trauma patient involved in a motor vehicle collision. The patient initially presented with a traumatic brain injury with agitation, renal failure, multiple right rib fractures, pulmonary lacerations, right hydropneumothorax, and pulmonary contusion. A tracheostomy was performed to secure the airway, and a blood transfusion was initiated to maintain homeostasis.

Before the thoracoscopy, an open reduction internal fracture procedure was performed on the mandible and maxilla, along with gingival closure, upon presentation to the operating room for the proposed thoracoscopy with possible VATS and decortations. During the review of the patient's MRN, it was established that the patient had a peanut allergy; his ASA status was category three. Additionally, it was determined that the patient would be a difficult airway due to the concomitant trauma processes.

Intraoperative

The patient's comorbidities and ASA three status required an intricate anesthetic plan. The patient's tracheostomy was also taken into consideration for the induction process. General anesthesia was the technique chosen, and an arterial line was placed for those reasons.

The proposed procedure indicated the use of a double-lumen tube. Double-lumen tubes are utilized for one-lung ventilation and lung isolation. As a technologist, it is essential to have multiple double-lumen tubes available for the induction along with the Glidescope. According to Guimaraes (2019), "Height, gender, age, body habitus, and ease of

insertion are all important considerations when choosing an appropriate size for a DLT" (Guimaraes, 2019, p. 416). When considering double-lumen tube sizes for this case, the patient's height and weight were the primary considerations. This patient's height indicated that either a left 37 french or a left 39 french would suffice without causing damage to the trachea or the carina. A 35 french and 41 french left double-lumen tube was also on standby.

Preparing the DLT for use is an essential process for the technologist. Adding lubricant to the stylet and inserting the stylet on the bronchial side will prepare the tube for seamless intubation. It is also essential to have the DLT connector assembled before the intubation. A mayo stand with a Williams airway, in case of failed DLT placement, is helpful for fiberoptic confirmation of a single lumen tube; also, having a swivel adapter prepared, a 10-cc syringe filled with local anesthetic and an LTA to numb the airway, tracheal suction catheters, an occluding device to clamp the proximal bronchial tube, and lidocaine jelly is helpful. Placing a double-lumen tube is a three-step process. The first step after inserting the tube is to ensure that bilateral ventilation is possible by inflating the tracheal side and creating a seal without causing damage to the trachea. The next step is to connect a reservoir/Ambu bag and clamp the bronchial lumen, then deliver one breath into the tracheal lumen. If bilateral breath sounds are heard, and chest rise is visible, the tracheal lumen is inflated adequately, and bilateral ventilation will be possible. The second step to verifying correct placement is to inflate the bronchial cuff, connect the Ambu bag to the tracheal lumen, and deliver a breath. If unilateral breath sounds and chest rises are heard and seen, it can be said that the double-lumen tube is correctly placed. The final step is confirming that ventilation of the downed lung is possible by having both cuffs inflated, delivering a breath from the Ambu bag, listening to the downed lung side, and hearing breath sounds. The Glidescope was set up and readily available because it was the primary way of confirming the double lumen tube placement in the trachea and bronchial, especially after repositioning the patient for the VATS procedure and

decortications. "Using fiberoptic bronchoscope through the bronchial lumen and guiding the DLT over fiber-optic scope increases the accuracy of placement" (Bora, 2020, p.4).

Once the double-lumen tube placement was confirmed, an arterial line was placed for real-time arterial blood pressure. The technologist is responsible for gathering tape, a guidewire, a tourniquet, extension tubing, chlorhexidine prep, an arterial line catheter, and the ultrasound with a linear probe. Prepping the area on the patient and taping the patient's hand in place is also helpful to the anesthesia provider for arterial line placement. Concluding arterial line placement, the patient was placed lateral, and the double lumen was checked with the fiberoptic bronchoscope ruling out tube migration and reaffirming placement confirmation.

VATS Procedure

"Video-assisted thoracic surgery refers to endoscopically assisted direct, robotic, and other minimally invasive techniques for thoracic surgery" (Jaffe, 2020, p. 309). The patient's diagnosis of pulmonary lacerations, hydropneumothorax, and pulmonary contusions indicated a VATS procedure. In order to perform the VATS procedure, several small incisions are made on the lateral aspect of the patient. The first incision is for the placement of a video thoracoscope, allowing the surgeon to view where the potential problems are inside the lung. Once the etiology is confirmed, other small incisions are made to insert instruments into the chest cavity. This case was performed under general anesthesia, and the double lumen placed successfully collapsed the operative lung. Jaffe states, "Lung collapse is slower than with thoracotomy because the chest cavity is not completely opened to atmospheric pressure" (p. 311). It is suggested to start one lung ventilation early and use a FiO₂ of 1.0 while applying suction to the unventilated lung. Carbon dioxide sufflation can be utilized to speed up this process even further, but there is a risk of a venous gas embolism. Sudden insufflation can increase intrathoracic pressure and cause hypotension, low heart rate, and hypoxemia; therefore, carbon dioxide

insufflation should be introduced slowly. For maintenance of general anesthesia, volatile gas should be maintained at 0.6 to 1.0 MAC, and it is recommended to consider analgesia infusion.

Decortications

The indications for decortication include pleural empyema, hemothorax, and pleural thickening due to inflammatory conditions. Contraindications include severely diseased lungs, bronchial stenosis, and hemodynamic instability. Pleural thickening was discovered during the VATS procedure. "VATS-decortication is usually performed via an anterior approach... A 30 degrees camera is used for visualization during the procedure" (Kumar, 2020).


According to Kumar, "The rind or the pleural peel must be removed from the lung parenchyma, including the fissures" (p. 3). After the removal, the surgeon instructs the anesthesiologist to inflate the downed lung to determine any air leaks in the pleural space. Any leaks must be sutured closed, and another leak test must be performed to ensure the lung is fully closed. After successful testing is complete, hemostasis must be insured. An intercostal drain is inserted into the thoracic space; in this case, the surgeon placed two. One anteriorly and one posteriorly, and they must "remain in place until the appearance of signs (clinical and radiological) of lung expansion" (Kumar p. 4). A layered chest wall closure is then implemented to conclude the procedure.

During the procedure, the patient consistently became bradycardic with a low MAP. As the technologist, the machine was the first thing inspected. During the diagnostic phase, it was noted that the WAG and scavenging line needed adjustments. The provider asked the surgeon to stop temporarily so that they could bilaterally ventilate the patient; during this process, phenylephrine was administered to address a transient drop in blood pressure.

Postoperative

After the completion of the procedure, we exchanged the patient's tube using a tube exchange to reintubate with a standard ETT. Once transported to the gurney, we took the patient to the ICU. We were particularly attuned to the patient's chest tubes during this process. Moving the patient to the transport bed and transportation to the ICU was slightly difficult because of the patient's chest tubes and intubation. Otherwise, the transport was uneventful, and the transfer of care was smooth.

Conclusion

The VATs procedure is a multifaceted procedure used to treat various pulmonary pathologies and trauma. In this patient's case, the VATs procedure was indicated for removing fibrous tissue and continued repair of lacerated tissue resulting from trauma—the procedure required invasive hemodynamic monitoring, including arterial line placement. For patients undergoing VATs, the anesthesia care team must adequately prepare and place the double-lumen tube for one-lung ventilation. Ensuring ventilation was successful includes isolating the lung and verifying the placement of a fiberoptic bronchoscope. It is essential that the scope remains in the room to monitor for tube placement and endobronchial extubation. Ultimately the management of this patient was successful, and we transported the patient to the ICU for continued postoperative care. 

Take the
QUIZ
Click here for a copy of the quiz.

References

- Guimaraes, E.S., Davis, M., Kirsch, J.R., Woodworth, G. (2019). *The Anesthesia Technologist's Manual: Second Edition*. Philadelphia, PA: Wolters Kluwer.
- Bora V, Kritzmire SM, Arthur ME. *Double Lumen Endobronchial Tubes*. [Updated 2020 Sep 10]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK535366/>
- Jaffe, R.A., Schmiesing, C.A., Golianu, B. (2020). *Anesthesiologist's Manual of Surgical Procedures: Sixth Edition*. Philadelphia, PA: Wolters Kluwer.
- Kumar, A. (2020, November 18). *Lung Decortication*. StatPearls [Internet]. <https://www.ncbi.nlm.nih.gov/books/NBK564375/>


Partners

Notes

REGIONAL UPDATE

ASA

Coming out of ASA 2022 in New Orleans, ASATT continues to play a valuable part within the ASA Committee on Equipment and Facilities. We (ASATT representatives) had a personal discussion with the chairperson prior to the scheduled meeting of the committee. ASATT will also continue to be the voice of all anesthesia technologists and technicians within the ASA as the relationship between the two organizations grow. I will continue on as the liaison for the ASA, but others are stepping forward to take over as my time with you is approaching a decade.

Joseph F. Answine, MD, FASA
Liaison to ASATT 



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REGION 1

Happy July to you all.

Hard to believe we are getting ready for the white stuff. I would like to plan a live meeting for the April of 2023. If you are interested in hosting it, feel free to send me an email. If there are any topics that you would like, please email me.

There is a virtual meeting in November. Check out the website at www.ASATT.org Remember that you can attend ANY meeting that you want to attend. These meetings are open to EVERYONE that needs the CEU's, and the price is right. Another way to earn CEU's is to write an article, being an active committee member, do Sensor Quizzes, ACLS and BLS courses.

ASATT now has an Instagram page, please make sure you visit www.instagram.com/ASATT_OFFICIAL you can get updates and information on various topics, post pictures and even join in on some of the giveaways.

Respectfully Submitted,
Jonnalee Geddis, Cer.A.T. 



REGION 2

Hello members,

I hope this finds everyone doing well. I hope you find time to get in a vacation and spend some quality time with your family, making wonderful memories. I know with all the strains of Covid it's not been easy trying

to plan family time but remember to protect you and your family and make wise choices of your surroundings.

Remember to check out our Instagram page at www.instagram.com/ASATT_OFFICIAL to post pictures and get updates and information.

Don't forget to check the ASATT website monthly to see when the next webinar zoom meetings will be held and to see about any new changes or updates that are going on.

Have you ever thought about being more active in our society? ASATT members may want to consider writing an article for the Sensor, ASATT is always looking for members to contribute to our quarterly publication, remember you can earn CE's and may be eligible for the Science and Technology award and this could be a great way for you to get more involved. Remember you can earn CEs from the quizzes one of the perks for being a ASATT member.

Don't forget to visit our ASATT website it has very useful information and articles on Healthcare news. Please don't forget there is a discussion board where you can ask questions and share ideas.

As a reminder: Please everyone stay safe and be healthy!
Karen Patrick, Cer.A.T. 

REGION 4




Hey region 4!

Hope you all enjoyed your summer. I am a fall and winter guy so we are just starting to get into that here in Wisconsin. It was really nice to see a lot of people from our region at the national conference! Sorry

if I did not get a chance to speak with all of you. Hopefully you liked the new format. I liked being able to have options. Hopefully we can expand on that and make it even better next year.

There should still be a couple of virtual education conferences before the end of the year for the people that still need to get you CEU's. Keep checking the website for updates on that.

I was really happy to see that we had 4 people interested in the Region 4 Director position. With that, you have a new Region 4 Director starting in October, **Samantha Groshak, Cer.A.T.T.**. No worries though I will not be going away. I have accepted a different position in ASATT that will have me working on the next national conference. So thank you everyone that contacted me over this last year. Looking forward to the new growth in region 4. Again feel free to reach out with any questions or concerns or ideas you have for ASATT and region 4.

Respectfully yours,
Mike Kosanke, Cer.A.T.T. 

REGION 6



Hello Region 6!

I hope you are doing well! I would love to hear about your experience if you went to the annual conference in Fort Worth. We have been hearing such positive feedback about the structure this year. I'm

excited for what's to come with ASATT and our profession. I am thankful to be President-Elect next term. I look forward to getting to know more members and watching our members and profession grow. Don't forget to follow ASATT on instagram to stay up to date and reach out if you would like to get involved!

Please welcome your new Region 6 Director, **Otoniel Castillo, Cer.A.T.T.**!

Talk to you soon,
Lauren Luna, ASN, Cert. A.T.T. 

REGION 7



Howzit Region 7!!!

Summer is zooming by in a hurry and we will soon be into fall. This is my favorite time of the year with the MLB heading into the playoffs and football season starting (NCAA & NFL).

For many of you it's starting to cool off and before you know it, you will start getting some snow. But, some of our peers are experiencing some terrible weather, please stay safe...

Everyone must take everything in stride, move forward, but continue to stay vigilant; "Situational Awareness". Don't let your guard down and stay alert. In my opinion, continue to wear your mask, Covid is not over....

"Today, our very survival depends on our ability to stay awake, to adjust to new ideas, to remain vigilant to face the challenge of change."

~ Martin Luther King ~

If you attended the Annual Meeting in Fort Worth, TX on August 10-12, 2022, I hope that you enjoyed the new "expo" concept of the meeting. The Expo was successful event because we need to look at challenges to change and shape the future of the annual educational meeting. But, the core of the meeting will always be to help everyone with continuing education to help our peers to learn and grow. Education is a critical aspect of everyone improving our patient care skills.

Unfortunately, I missed the meeting; it was the first annual meeting that I missed in probably 20 years. The most missed aspect was... interacting with our peers, meeting new people, and seeing our peers from across the country. It's always comforting to see old friends catching up on our lives and discussing our views and techniques on patient care. Plus it's the only time the board of directors gets to see each other face to face instead of on our computer screens and iPads.

"Make new friends, but keep the old; Those are silver, these are gold."

~ Unknown ~

There will be more virtual meeting before the end of the year, giving you other opportunities to earn CE's toward recertification. Please check the ASATT website for further details.

I'll say it again and again and again... ASATT is the society that will help our profession grow and move forward into the future. I know ASATT's plan WILL NOT make everyone happy, but you must look at the overall direction that our profession is headed. Many of you have not been around as long as I have... I remember the days before we even had the National Certification and we had nothing. This has been a long hard journey to get to where we are now, there's no short cuts. Things haven't always been smooth sailing and we are still headed through rough seas ahead. There is no easy way to get to where we want to go. There will be some extremely hard decisions to be made and they are making these decisions with careful consideration to improve our profession. There's only a small percentage of our peers

that have been in this profession >30 years like I have. As I have said before... We are laying the foundation for future generations of Anesthesia Technicians & Technologist and we MUST continue to grow and build this **together**.

"Coming together is the beginning; keeping together is progress; working together is success."

~ Edward Everett Hale ~

PLEASE BE SAFE AND PROTECT YOURSELVES...

Aloha,
Delbert Macanas, Sr., Cer.A.T.T. 

Academy

ASATT ACADEMY

A Message From the Chair for the Committee on Accreditation for Anesthesia Technology Education (CoA-ATE),



MARC MCGAFFIC, CER.A.T.T.
ASATT DIRECTOR OF ACCREDITATION

Through this year Accreditation of Educational Programs has soared from five to eleven accredited programs throughout the United States. The profession, through the eyes of an educator, is brighter today – I just wish that all educators had the same passion for growth as many of us do. Yes, the rumors are true – the profession needs more educational programs to battle the increased demand for Anesthesia Technologists and Technicians. This is not an easy task, especially with 9k+ job openings. Quite simply, it is rather difficult to start an educational program without the knowledge of whom to contact. That is why I have asked that each ASATT Regional Director contact Community Colleges throughout their regions to promote our profession and standardized education. I have dedicated time so that I may travel to these locations and help the community colleges begin the process of establishing a program.

Proven to be factual, states and cities (almost all) where Anesthesia Technology programs are developed created a growth in demand while also an upsurge in annual earnings. Some hospital systems in Michigan now require the applicant to be a graduate from a program while also holding certification. Some other hospital systems, in the US, have went backwards and eliminated the need for certification – let alone formal education. Program leadership should

promote the growth of anesthesia techs – however, this is not true of all program leaders. That is disappointing to say the least.

As I stated above – I have requested each Regional Director to obtain contact with Community Colleges. I will also request that each Program Dean / Program Director contact their local clinical sites and fight for certification and wage increases. The future of the profession lies heavily on the education provided in the classroom, lab, and clinical facilities. Program leadership serves the communities and interest of our health care profession. I challenge each Program Dean / Program Director to communicate with clinical facilities and support the Certification of Anesthesia Technologists. Again, we are promoting a safe patient care experience.

If you attended the ASATT National Meeting in Dallas Fort Worth this past August 2022, then you would have heard about my presentation and my acknowledgement of our profession. First, I asked that all Program Graduates please stand. Few, not many stood and the attendees applauded our graduates. However, when I asked the job-trained Technicians and Technologists to stand – about ¾ of the room stood. What I said next will hopefully resonate with you, the reader. When the OJT attendees rose to their feet I said “Thank you – you built the foundation of our profession and we’re here today, offering formalized education because of YOU. Each of you provide an element that an educator can NEVER replicate – learning on the job! That experience – it’s worth all the gold in the world. When you retire – who will take your place? Someone from the street with zero knowledge in health care or would you want an experienced and educated tech providing you a safe patient experience?” Believe it or not – standardized education and having a graduate continue driving the bus that OJT Techs built. That is the present, that is the now, and that is the future.


If you don’t believe me; then ask the 150+ attendees that witnessed this moment.

Multiple job-trained Technicians approached me during the ASATT National Conference. Wanting to start a program in their city or state. To name just a few – Boston, Chicago, Iowa, Houston, Louisiana, New Jersey, Philadelphia, and Montana.

Active members of ASATT that believe education is here to replace you – that is NOT true. Education is here to ensure the next generation of Anesthesia Technologists are just as knowledgeable and able to perform the duties that you perform. OJT techs of today will never hold the skills and knowledge that you possess. The technology and complex procedures of today warrant the need of formalized education. Would you feel comfortable, as a patient, knowing the Anesthesia Tech assisting the Anesthesia resident with the Swan-Ganz catheter? If the resident would happen to pull-back on the Swan with balloon still inflated – would the OJT Tech of today know the complexity of deflating the balloon or would the patient suffer a grave consequence?

Do you want to see the profession continue moving forward or would you like the profession to steer directly towards the largest iceberg with minimum life-jackets and emergency boats?

I will leave you with this – competition is great for any organization. However, when the so-called competition wants to water-down the profession and eliminate your hard-work while also vanishing the future of our profession that we LOVE – is that really competition or just a swarm of fruit gnats hovering over any piece of negativity they can locate?

Thank you for your time!
Marc McGaffic, MS, BS, Cer ATT
Chair, CoA-ATE 

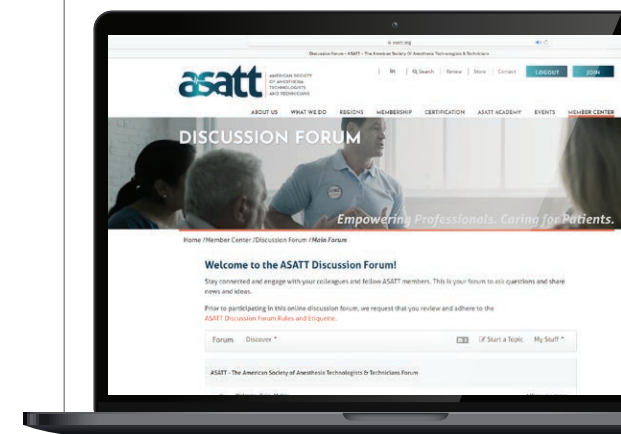


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