

SENTINEL

President's Message

When I was originally nominated to be President of PSA over two years ago, the advice I received reminded me of the common adage about boat ownership: "The second-happiest day of your Presidency will be the day you are elected. The happiest day will be when your successor is elected." When I got this advice, I chuckled, knowing that I was excited for the two years to come and for what they would bring.

What a "two years" they have been.

It began with us hiring a new Government Relations firm and immediately addressing a change in Department of Health regulations that were an existential threat to Physician-led Anesthesia Care in Pennsylvania. We also continued our charge to codify physician supervision into Pennsylvania law, oppose an attempt by PANA to provide legal title to CRNAs (and move one step closer to independent practice), and work with other specialty groups to ensure a fair and equitable solution to Balance Billing.

In addition to a busy legislative agenda, PSA was full speed ahead with an ambitious new educational agenda, starting with our first in-person educational meeting in over a decade: an ultrasound regional anesthesia workshop in Philadelphia in March. We had a wonderful turnout and, listening to feedback from that meeting, began to plan a two-day in-person educational meeting for 2020, building on the success of our ultrasound workshop.

Also, we completed a major change in our governance structure – our President and President-Elect began their first two-year terms, and committee structure was firmly overhauled. By the end of 2019, we were excited for what 2020 would bring.

Little did we know.

2020 brought us something we could never have imagined – the 21st century's first (and hopefully only) pandemic. Anesthesiologists, for better or worse, had a front row view of the effect of COVID-19 on hospitals. ICUs filled. Operating rooms stopped. Quarantines. Social distancing. Severe illness. And, yes, death. With all of these things came significant challenges, whether they be logistical (how to get PPE and what PPE we needed), clinical (how do we best care for these patients – often a moving target), personal (how do I keep myself and my family safe while providing the best possible care for my patients), and financial

continued on page 3



**Richard Month,
MD, FASA**

PSA PRESIDENT

**...Quarantines.
Social distancing.
Severe illness.
And, yes, death**

Table of Contents | FALL 2020

- 3** | Meet Your PSA President
- 5** | Legal Update
- 8** | Legislative Update
- 9** | Z-Pac Update
- 10** | Resident's Column
- 12** | Know Your Equipment: PPE
- 17** | Training Program to Start in Kenya
- 19** | Virtual Versus Face-to-Face, An Old Guy's Opinion

2020-2021 Officers

President

Shailesh Patel, MD

President-Elect

Gordon Morewood, MD

Immediate Past President

Richard Month, MD

VP Financial Affairs/Treasurer:

Bhaskar Deb, MD

Asst. Treasurer:

Josh Atkins, MD, PhD

VP Admin. Affairs/Secretary:

Andrew Boryan, MD, FASA

Asst. Secretary:

Aysha Hasan, MD

VP of Professional Affairs

Shannon Grap, MD

VP of Scientific & Educational Affairs

Joseph Answine, MD

District Director to the ASA

Erin Sullivan, MD

Alternate District Director to the ASA

Joseph F. Answine, MD, FASA

Delegates to the ASA House of Delegates

Joshua Atkins, MD, PhD

Andrew Boryan, MD

Aysha Hasan, MD

Mark Shulkosky, MD

Thomas Witkowski, MD

Alternate Delegates to the ASA House of Delegates

Eric Bernstein, MD

Robert Campbell, MD

Adam Childers, MD

Shazia Choudry, MD

Jeffrey Derham, MD

William Ehrman, DO

Michael Green, DO

Denise Hall-Burton MD

Michael He, MD

Craig Muetterties, MD

Benjamin Park, DO

Jason Pawlowsky, DO

Patrick Vlahos, DO

Dennis Warfield, MD

Scott Winikoff, MD

Anasuya Vasudevan MD

Delegate, Pennsylvania Medical Society House & Specialty Leadership Cabinet

Shannon Grap, MD

Alternate Delegate

Selina Read, MD

Carrier Advisory Representative

Gordon Morewood, MD

Carrier Advisory Alternate Representative

Shailesh Patel, MD

Resident Component President

Chinyere Archie, MD



PENNSYLVANIA
society of
ANESTHESIOLOGISTS

SENTINEL NEWSLETTER

Editor

Richard P. O'Flynn, MD, FASA

Executive

Jennifer Redmond

President

Richard Month, MD, FASA

The PSA Newsletter is an official publication of the Pennsylvania Society of Anesthesiologists Inc. Opinions expressed in this newsletter do not necessarily reflect the Society's point of view. All correspondence should be directed to:

PSA Newsletter
777 East Park Drive
P.O. Box 8820
Harrisburg, PA 17105-8820
717-558-7750 ext. 1596

www.psan.es.org

President's Message

continued from page 1

(with cases dwindling, how can I continue to keep my practice open and pay our employees, let alone myself). We quickly shifted gears, hosting several well-attended COVID-19 Town Halls and publishing the constantly changing information to our website and to the Sentinel. We did all of this while fighting against those in Harrisburg and Washington who chose to use the crisis to their political advantage. Some fights we won, some fights we lost, but we will never stop pursuing what is best for our patients.

As I leave the presidency and hand the reins over to my esteemed colleague and friend, Dr. Shailesh Patel, I do so with equal measures of relief, pride, and sadness: relief... that should be self-explanatory, pride for the work we've done and for the organization we lead, and sadness that it's over. But most of all, I am thankful for the opportunity to lead this outstanding organization and the trust that our members have put in me. I thank you for that opportunity and that trust, and I look forward to continuing to serve the PSA for many years to come.

Meet your PSA President



SHAILESH D. PATEL, M.D., FASA, MHA

ANESTHESIA ASSOCIATES OF WILLIAMSPORT

WILLIAMSPORT, PA

Dr. Shailesh Patel was installed as PSA President at the annual membership meeting. He will serve a 2 year term.

Dr. Patel has been the Chairman and Medical Director of the Department of Anesthesiology and Vice-President of Anesthesia Associates of Williamsport since 2000. He also served as President of the Medical Staff for UPMC Susquehanna from July 1, 2016 to July 1, 2020. During these four years, Dr. Patel was a member of UPMC Susquehanna Board of Directors and continues to serve on the Lycoming Hospitals Board of Directors.

After completing his Bachelor of Science in Chemistry in 1984 from the State University of New York in Albany, Dr. Patel worked on Wall Street for three years, as an administrator in the housing sector. After Wall Street, Dr. Patel completed his Doctor of Medicine from Jefferson Medical College in 1991, Medical Internship in Internal Medicine from Bryn Mawr Hospital in 1992, and Residency in Anesthesiology from Thomas Jefferson University Hospital in 1995. In December of 2015, he completed his Master's in Healthcare Administration.

OPEN



LEGAL UPDATE

Medical Practice HIPAA violations Hacker/Access Denials \$10.8 million Penalties Imposed



Charles I. Artz, Esq.
PSA General Counsel

Between September 15, 2020 and September 25, 2020, the U.S. Department of Health and Human Services Office for Civil Rights (“OCR”) published eight separate cases in which OCR recovered \$10,786,500 in fines involving three cases of improper “disclosures” of ePHI caused by criminal hackers, three physician groups and two other health care providers’ failure or refusal to grant patients timely access to their medical records. Each case and compliance recommendations will be summarized briefly.

FAILURE TO PROVIDE PATIENTS TIMELY ACCESS TO PHI - HIPAA RIGHT OF ACCESS INITIATIVE

On September 15, 2020, OCR resolved five investigations under its HIPAA Right of Access Initiative. Three involved medical practices. One was a mental health provider. One was a non-profit organization.

In *In re All Inclusive Medical Services*, the provider was a multi-specialty family medicine clinic providing internal medicine, pain management and rehabilitation services. Here’s what happened:

- AIMS refused to give a patient access to her medical records when it denied her requests to inspect and receive a copy of her records;
- AIMS did not produce the records of the patients for eight months;

- OCR provided no opportunity to correct the situation; and
- OCR imposed a \$15,000 penalty for the single offense.

In *In re Beth Israel Lahey Health Behavioral Services*, the provider is a large mental health and substance use disorder provider. Here’s what happened:

- BILHBS failed to provide a personal representative seeking access to her father’s medical records;
- It took 2 months, instead of 30 days for BILHBS to provide access to the medical records;
- OCR imposed a fine of \$70,000 for the single offense; and
- OCR provided no technical assistance, warning or opportunity before imposing the fine.

In *In re King MD*, a small psychiatric service practice:

- King MD failed to respond to an individual’s request for access to her medical records;
- The patient complained to OCR;
- OCR would have let the provider off the hook because OCR gave technical assistance;
- The provider ignored OCR’s directive and did not provide the records for 10 months;
- After a 10-month delay, the records were finally provided; and
- OCR imposed a fine of \$3,500 for the single violation.

In *In re Wise Psychiatry, P.C.*, a small psychiatric practice:

- The practice failed to provide a personal representative with access to his minor’s psychiatric medical records;
- OCR provided technical assistance with advice to disclose the medical records, which the provider ignored;
- OCR received the second complaint that access to his minor son’s medical records was still not provided;
- After seven months, the records were finally disclosed; and
- OCR imposed a fine of \$10,000.

continued on page 6

Medical Practice HIPAA violations Hacker/Access Denials \$10.8 million Penalties Imposed

continued from page 5

In re Housing Works, Inc., a non-profit organization that provides health care and a variety of social services for people with HIV/AIDS:

- The provider failed to provide the patient with a copy of his medical records;
- OCR granted an opportunity for technical assistance, which the provider ignored, triggering a second complaint;
- The records were provided five months later; and
- OCR imposed a \$38,000 penalty.

OCR's enforcement actions are designed to send a message to the health care industry about the importance and necessity of compliance with the HIPAA Access rules. The wide disparity of the fines, ranging from \$3,500 to \$70,000, is based on a variety of factors, including the nature and extent of the harm resulting from the HIPAA violation; the entity's history with respect to HIPAA compliance; the financial condition of the entity, including its size and the impact of COVID-19; and other factors "as justice may require." OCR is dead serious about empowering patients and holding health care providers accountable for failing to take their HIPAA obligations seriously.

Each provider was required to undertake a Corrective Action Plan to develop and implement accurate patient access and disclosure requirements, training and other obligations. The policies and procedures must explain patients' right of access; timely action; fees that can be imposed; documentation; and training of providers and staff.

These decisions serve as important training tools to ensure patients are given timely access to their medical records and protected health information without delay consistent with the HIPAA Privacy regulations. It is remarkable that some providers continue to disregard this unequivocal obligation.

CYBER HACKERS' ATTACKS ON PATIENT DATABASES AND INFORMATION TECHNOLOGY SYSTEMS

On September 21, 2020, in re Athens Orthopedic Clinic, P.A., the medical practice agreed to pay a \$1,500,000 fine based on a criminal cyber-attack.

Here's what happened:

A person from "www.databreaches.net" notified Athens Orthopedic that a database of patient records belonging to the medical practice was posted online for sale. Two days later, a hacker group known as "The Dark Overlord" contacted the medical practice by email and demanded money in return for a complete copy of the database it stole without sale or further disclosure. Computer forensic analysis determined that The Dark Overlord obtained a vendor's credentials to the medical practice's system and used them to gain access two weeks before that. AOC terminated the compromised credentials one day after receiving notice, but The Dark Overlord's continued intrusion was not effectively blocked until three weeks later. A total of 208,557 individuals were affected by the breach. A variety of PHI was exposed, including patient demographic information (name, date of birth, social security number), clinical information (reason for visit, social history, medications, test results, medical procedures) and financial/billing information (health insurance information and payment history).

OCR determined the medical practice violated the following HIPAA regulations:

- The requirement to prevent unauthorized access to the ePHI of its patients maintained in the information system;
- The requirement to maintain copies of its HIPAA policies and procedures;
- The requirement to implement sufficient hardware, software and/or procedural mechanisms that record and examine activity in information systems that contain or use ePHI;
- The requirement to enter into Business Associate Agreements with three of its BAs;
- The requirement to provide training to its entire workforce;
- The requirement to conduct an accurate and thorough assessment of the potential risks and vulnerabilities to the confidentiality, integrity and availability of ePHI it held; and

continued on page 7

Medical Practice HIPAA violations Hacker/Access Denials \$10.8 million Penalties Imposed

continued from page 6

- The requirement to implement security measures sufficient to reduce risks and vulnerabilities.

The Corrective Action Plan was extensive and included the following:

- Conduct and complete an accurate, thorough, enterprise-wide analysis of security risks and vulnerabilities that incorporates all electronic equipment, data systems, programs and applications controlled, administered, owned or shared by the practice;
- Develop an enterprise-wide risk management plan to address and mitigate any security risks and vulnerabilities identified in its risk analysis; and
- Annually conduct the risk analysis and mitigation plan.

Extensive policies, procedures and training obligations were also imposed.

On September 23, 2020, in *In re CHSPSC, LLC*, a Business Associate was fined \$2,300,000 because a cyber-hacking group accessed and stole PHI of over six million individuals, securing a variety of PHI.

On September 25, 2020, in *In re Premera Blue Cross*, the insurance company was fined \$6,850,000 based

upon cyber-attackers' unauthorized access to its information technology system. The cyber-attack went undetected, resulting in the disclosure of more than 10.4 million individuals' PHI, including names, addresses, birth dates, email addresses, social security numbers, bank account information and health plan clinical information.

Corrective Action Plans were imposed on the Business Associate and Premera Blue Cross similar to the Athens Orthopedic case.

The compliance take-home points from these cases resulting in massive penalties is to conduct the necessary enterprise-wide risk analysis on all electronic equipment (described above), implement mitigation plans, and to continue testing for vulnerabilities.

The government continues to impose multiple million-dollar fines against medical groups and other covered entities based upon third party criminal behavior. In no other area of law is a health care provider liable for the criminal conduct of third parties. Therefore, significant resources should be devoted to protecting all ePHI with the appropriate risk analyses, mitigation and security efforts.



LEGISLATIVE UPDATE

The 2019-2020 Pennsylvania legislative session is quickly coming to an end. The Pennsylvania Society of Anesthesiologists has been incredibly engaged this session and would like to give you an update about what is going on in Harrisburg.

November 3rd is election day! While the Presidential election has been the center of attention, there are many down-ballot races that are extremely important. Who controls the Pennsylvania House and Senate is on the line in this election. Currently, in the House, Republicans hold the majority -- 109 Republicans to 93 Democrats with 1 vacancy. Republicans also hold control in the Senate -- 29 Republicans to 21 Democrats. On November 3rd there will be 138 elections for the Pennsylvania House of Representatives and 18 elections for the Pennsylvania Senate. The PSA will update you on election results as they occur.

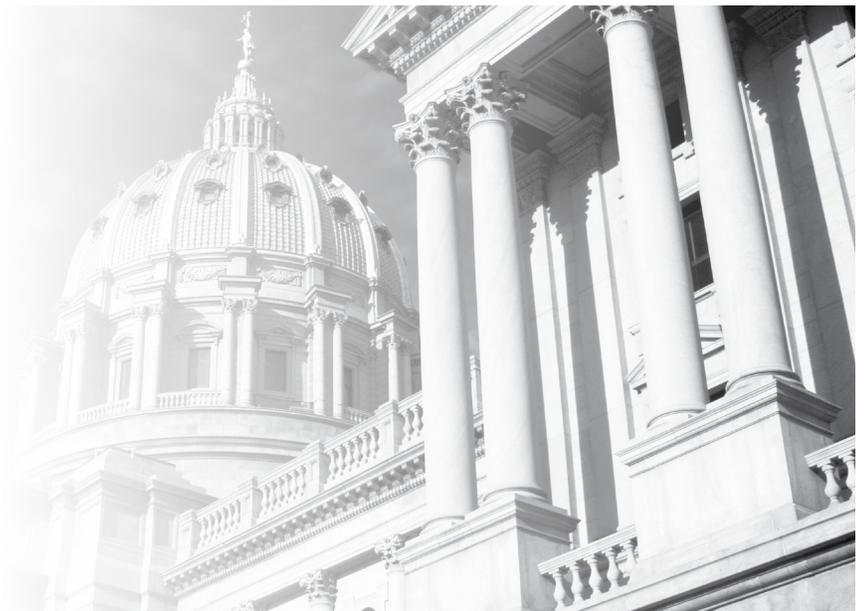
In May, the Governor and the General Assembly passed a 5-month interim budget that provided level funding based on fiscal year 2019-2020 numbers. This 5-month budget was put in place because of the COVID-19 pandemic and the effect that it had on revenue. Pennsylvania finished fiscal year 2019-2020 \$3.2 billion below estimate. The Legislature will need to negotiate and appropriate the final 7 months of this fiscal year later in 2020. We anticipate the legislature to take up the budget for the remainder of the year in November. We will continue to update you regarding the budget as the situation unfolds.

As you know, the COVID-19 Pandemic has had a massive impact on the Commonwealth. During the height of the pandemic, Governor Wolf signed multiple Executive Orders to help combat the pandemic. In an Executive Order dated May 6, 2020, Governor Wolf suspended 28 Pa. Code §123.5. This section of the PA code is the physician supervision requirement for the administration of anesthesia. This means Governor Wolf suspended the physician supervision requirement for the remainder of the COVID-19 emergency declaration. The PSA has engaged the Governor multiple times asking him to rescind his suspension of the physician supervision requirement.

The PSA is also engaging on House Bill 2779, which would extend the suspension of the physician supervision requirement and other administrative flexibilities that were granted under the COVID-19 disaster declaration for an additional 3 months following the end of the Governor's declaration of emergency. This legislation is currently on the House floor for a vote.

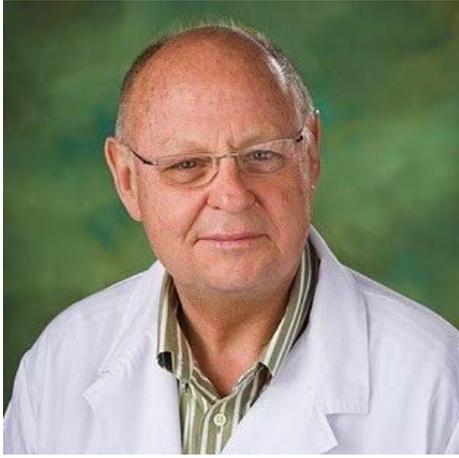
The PSA continues to monitor Senate Bill 325 which would create CRNA titling in Pennsylvania. This legislation passed the Senate in June of 2019 and is currently in the House Professional Licensure Committee. We will continue to engage and update you on the status of this legislation.

Are you willing to advocate for patient safety? Do you want to be a champion of our profession? If the answer to either of these questions is yes, then you should sign up for the PSA Legislative Champions Network. This network is a group of PSA member advocates who are willing to go out and advocate for not only our profession but our patients. If you would like to join please fill out the form that can be found online at <https://www.psanes.org/> or simply email tyler@millirongoodman.com.



Z-PAC Update

Stairway to nowhere



Craig Muetterties, MD

Z-PAC Treasurer

I pass by this stairway every day on my way to the OR. The chain and sign are always in the same position. Each day as I pass the sign my mind wanders to the possible scenarios involving the stairway. I finally stopped at the security desk and inquired about the stairway. I told her it seemed like an easy way for me to get to the second floor without passing it and going to the end of the hall to get to the next stairway. "That stairway has never been used doctor, it leads to an area that we don't want people to go to," explained the guard.

I wondered to myself why anyone would build a beautiful staircase never to be used. I learned a lot about stairways from my son. After graduating college, my oldest son got a job working for a company that sold stairways. Apparently there's a lot more to building the stairway than meets the eye. The total rise of the stairway has to be a calculated and then the rise per step needs to be put into the equation. The stairs need to be equal in height and depth so as not to cause tripping. A stairway is indeed a work of art. My son was able to fix some of the problems that builders had after they bought stairs from his employer. This became a problem since he was hired as a salesman and not a troubleshooter. The clients were quite satisfied that their problems were easily addressed by him since a significant amount of skill was involved in making the stairs correctly.

My mind wandered back to the unused staircase. Why was all the effort and expense put into this staircase if it was not needed or even intended to be used. I believe I have the answer. The staircase was built without appropriate input from the people who would be using it.



The builder and the client were parallel playing. The result was a perfect, beautiful staircase with no use! The side rails functioned only to hold the sign and chain blocking entry.

The same things can happen in the legislature. Rules can be made with a lack of input from the people most closely involved with their implementation. That's exactly the function of Z-PAC. anesthesiologists can become involved with legislators as they try to make appropriate rules with proper function. A political action group is the mechanism for sharing this information. With proper input, rules are made that have a real function and are not merely made just so that they can be made.

We have recently seen decisions made by lawmakers in Pennsylvania that were made in a knee-jerk response to a situation without adequate input. They can result in harm both to patients and the practice of anesthesiology. We need your participation in the process and support of Z-PAC in order to assure lawmakers have the input they need.

**Take a moment to write a check to support our PAC.
Checks can be made out to "Z-PAC" and sent to:**

**Z-PAC
P.O. Box 325
Media, PA 19063**

Credit card payments can also be made by accessing the PSA website and clicking the "DONATE TO Z-PAC" tab:

www.psanes.org

Resident's Column

Reflections of a PGY1 during the pandemic



Boris Anyama

UPMC Anesthesia PGY-1

My first awareness of Coronavirus was during the interview trail. As I travelled from airport to airport, I noticed individuals wearing mask and gloves. The gravity of the situation had not been made clear, and I perceived the contagion as a threat similar to a “flu-like virus” ---something to be conscious of but would ultimately pass. Time passed but the virus did not. Businesses closed, events cancelled, and quarantine was in full effect. Match day celebrations were converted to social media posts, and graduation ceremonies were replaced with virtual meeting links from home. Busy cities became ghost towns and “Stay Home” was the message as this “flu-like virus” grew to become a worldwide Pandemic.

My co-interns and I navigated the process of moving to new cities in lockdown, meeting masked senior residents and faculty. Along with orientation to the electronic medical record system, we were oriented to the use of personal protective equipment and importance of when to use them. As with other hospitals, UPMC implemented new policies around Coronavirus. Our senior residents shared with us their experiences of working during the pandemic, and we listened with reverence and anxiety knowing we were joining their ranks.

One of the biggest challenges that my colleagues and I face with patients is effectively communicating without the aid of facial expressions because regardless of the language someone speaks or where they are from, a simple smile is universal--now that is lost behind a mask.

It can be scary, to be honest, to walk into a space or care for a person who has or is suspected to have Coronavirus. We combat these fears by remembering the oaths we recited to become physicians. I've found support in my colleagues and friends, who face the uncertainties with me. Bolstered by their bravery and selflessness, I don the PPE (a luxury that I am grateful for) and approach each patient as though they were family, hoping they will be able to return home to their

Member Benefit!

Have a job you need to fill? Advertise on PSA's Job Bank!



Go to www.psanes.org/job-bank for details

Resident's Column

A Brief Reflection: Anesthesiologists During a Respiratory Viral Pandemic



Chinyere Archie, MD

Chief Resident, Anesthesiology,
Temple University Hospital

As we entered the year of two-thousand and twenty, many typical horizons came into view, some closer than others... the first job, new fellowship revelations, moving to another state, and for some... retirement. However, a mere ten weeks into the year, it became apparent that our professional roles would take on new meaning. A novel respiratory virus had emerged in Asia months earlier and quickly gained notoriety as it surged to pandemic status by March. Here began a new era for anesthesiologists, other physicians, and the public at large. The unfolding healthcare demands of the next several months brought to light the invaluable role of the anesthesiologist, and where we fit in on the roadmap to defeating the viral invasion. This may very well be the largest pandemic you experience during your lifetime.

Anesthesiologists have long been thought of as unstated heroes by those who intimately know and appreciate our conscientious work. While perioperative patient care was our former expertise, the advent of the COVID-19 pandemic called for our reach to extend beyond the operating room. Our vast skillset lends to our specialists being extremely valuable to healthcare teams. Early on, we were recognized as important stakeholders in the planning and implementation of changes to improve workflow, develop and staff new patient care sites, manage non-OR ventilator needs, determine optimal use for scarce resources and ultimately, to lead the way in airway management strategies. Our unique perspective of caring for patients during the full gamut of stages of medical

and surgical cardiopulmonary disease put us at the forefront of 'essential service' and danger, as the unknown unfolded.

Every day, anesthesiologists across the nation showed up to work, literally placing themselves in the direct line of viral exposure. We didn't have the luxury of working from the cocoons of our homes, shielded with loved ones. We made necessary sacrifices to protect our families, while remaining steadfast in our duties. Many chose alternate living arrangements and even took the extra steps of volunteering to assume additional duties. The selflessness was both appreciated and undoubtedly necessary, for healthcare systems to remain functional, amidst the all-time high patient numbers. The humility, bravery and calm composure of anesthesiologists is worthy of mention.

Our professional anesthesia societies rose to the occasion, sharing novel strategies on how to mitigate the potential perils of work. Furnished with frequently updated epidemiological data for covid-19, evolving guidelines on donning and doffing of personal protective equipment, alternatives to mechanical ventilation, triaging of patients in respiratory failure, medications in various stages of investigation and sheer willpower we faced the patients we were meant to serve. We each felt personally responsible for remaining well-informed, for the safety of our patients, our teammates, our families and ourselves. Nightly journal reading, podcast reviews, webinar replays, lectures and national newscasts became familiar reservoirs from which we drew new information to share and dissect at work. As anesthesiologists, we depended on each other and interestingly, the flow of information was more bidirectional than we were used to, as both junior and senior staff discovered together.

Even before elective surgeries ground to a screeching halt, we were needed elsewhere. 'Anesthesia stat!' and 'Code blue!' announcements echoed through the hallways of our hospital's buildings like never before. The demands of the emerging patient population called for our skills elsewhere, throughout the hospitals. On an almost weekly basis, new teams were being developed and deployed to makeshift intensive care units, high dependency units, triage floors, and an

continued on back page

Know Your Equipment: Personal Protective Equipment



**Vergheese T. Cherian, MD,
FFARCSI**

Associate Professor, Department of
Anesthesiology & Perioperative Medicine
Penn State Health
Milton S Hershey Medical Center
<mailto:vcherian@pennstatehealth.psu.edu>

Abstract

The COVID-19 pandemic has claimed over a million lives worldwide. The causative virus, SARS-CoV2 is transmitted by respiratory droplets, aerosol, contaminated surfaces and close contact with a patient. All healthcare personnel need to understand the effectiveness and limitations of the personal protective equipment that they use to protect themselves and the non-infected patients under their care.

SARS-CoV-2, the causative virus of the current pandemic, has a lipid bilayer enveloping a chain of nucleocapsid protein attached to a single-stranded RNA. This 0.12 μm virus, with spikes of structural protein inserted into the envelop, belongs to the family of corona viruses that caused SARS (Severe Acute Respiratory Syndrome) in 2002 and MERS (Middle Eastern Respiratory Syndrome) in 2012. Although the case fatality rate for COVID-19 is lower (2%) compared to SARS (10%) or MERS (37%), it is more transmissible. [1, 2, 3, 4] The modes of transmission of SARS-CoV-2 are by respiratory droplets, aerosol, contaminated surfaces, and close contact with a patient. SARS-CoV-2 was detectable in aerosols for up to 3 hours, on copper surfaces for

4h, on cardboard for 24h and on plastic and steel surfaces for 2-3 days. An additional problem is that a COVID patient could be transmitting the virus even before they become symptomatic. Physical distancing, wearing a facemask and washing and disinfecting of hands regularly are the basic tenets to prevent transmission. The health care personnel (HCP) managing a COVID-19 patient is at a higher risk of being infected by the virus [4, 5] and needs to have a good understanding of the efficacy of the equipment available to protect themselves.

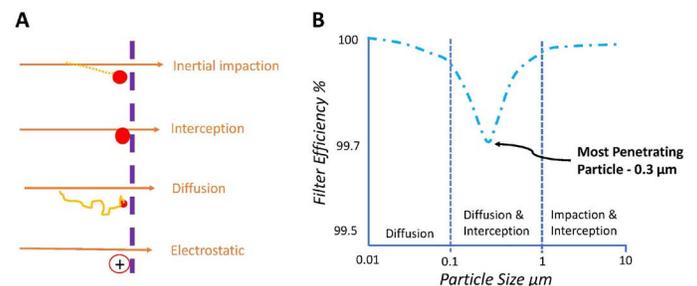
Facemasks / Respirators

Facemasks have always been a standard method to provide respiratory protection from a variety of pollutants such as dust, allergens, pathogens, gas, and corrosives. Although, face mask mainly prevents the transmission of droplets from the wearer to the by-standers, it also does provide protection to the wearer.

Filter Performance:

The 'filters' used in surgical masks and respirators are non-woven polypropylene fabric, which is created by extruding melted plastic on to a conveyor that cools to form a fine web. The mechanisms by which the particles are filtered are shown in Figure 1A. [6]

Figure 1: Filter performance. (Refer to the text for explanation)



1. Inertial impaction: Relatively larger particles, due to their inertia fall off the air stream and are diverted on to the filter fiber.
2. Interception: As larger particles pass close to the fibers they are intercepted.
3. Diffusion: Small particles move around in random zigzag patterns, known as 'Brownian motion', and deviate from the air stream and get stuck to the fiber.

continued on page 13

Know Your Equipment: Personal Protective Equipment

continued from page 12

4. Electrostatic attraction: Particles that are charged get attracted to the charged fibers of the filters.

One of the most misunderstood concepts about filters is that they do not function as a simple sieve. It appears that particles of around 0.3µm size are the hardest to be filtered, as these are not large enough to be filtered by 'interception' or 'inertial impaction' yet not small enough to have Brownian motion and be filtered by 'diffusion'. (Figure 1B) Therefore, the best test of a filter's performance is its efficiency to filter out 'particulate matter' (PM) of 0.3 µm. The 'high-efficiency particulate air' (HEPA) filters have an efficiency of ≥ 99.97% for PM of 0.3 µm. The commonly encountered PM in the air are pollens (≥10 µm), allergens (≥ 2.5µm), bacteria (≥ 1µm) and virus (0.1µm).

Cloth mask: A cloth mask with 2 or 3 layers of fabric can stop dispersal of droplets generated by the wearer while talking, coughing, or sneezing. It is currently recommended that every person should wear a cloth mask while going out and even inside their home and workplace to protect the others in the vicinity, especially if they have cough or other respiratory symptoms. When it gets soiled or wet, it should be cleaned with hot water and detergent. All visitors to a healthcare facility should be mandated to wear this.

Surgical mask: Depending on the level of protection offered, surgical masks are made of three (Level 1) or four (Level 3) layers of non-woven polypropylene fabric to achieve a balance between pollutant filtering, fluid repelling and breathability. However, these masks have gaps between the mask and the face and does not provide protection against aerosolized infectious particles. These masks have an outer, fluid repellent side, which is usually colored and a softer, fluid absorbent inner side that is usually white. These masks should be worn with the colored side outside.

The current standard F2100-07, recommended by the American Society of Testing and Materials (ASTM) specifies the performance requirements for surgical face masks on five basic criteria. [7] (Table 1)

Table 1: Comparing the performance of masks based on American Society of Testing and Materials (ASTM) criteria. Although, the cloth mask is not under the purview of ASTM, it does prevent the transmission of droplets generated during speaking, coughing and sneezing, depending on the type and the number of layers of fabric.

ASTM criteria for performance	Cloth facemask	Surgical facemask		N95 Respirator
		Level 1	Level 3	
BFE (3-µm)	X	≥95%	≥98%	≥98%
PFE (0.3-µm)	X	≥95%	≥98%	≥95%
Fluid resistance	X	80 mmHg	160 mmHg	160 mmHg
Delta P- mmH ₂ O/cm ²	X	< 4	< 5	< 5
Flammability	X	Class I	Class I	Class I

1. BFE (bacterial filtration efficiency) measures the ability of the mask to filter out bacteria when challenged with a bacteria-containing aerosol. This is tested using a droplet size of 3.0 microns containing Staphylococcus aureus (average size 0.6-0.8 microns). A level 1 mask should filter out 95% while a level 3 mask should filter out 98% of the bacterial load.
2. PFE (particulate filtration efficiency) measures the ability of the mask to filter out sub-micron particles including viruses. This is tested using particle of 0.1-micron size. A level 1 and 3 masks are required to filter out 95% and 98% of the particles, respectively.
3. Fluid Resistance reflects the mask's ability to protect the wearer from a splash or spray of fluid. It is tested using synthetic blood at pressures of 80, 120, or 160 mm Hg to simulate the venous pressure, the arterial pressure and the pressure that may be encountered during powered irrigation.
4. Delta P (pressure differential) measures the air flow resistance of the mask and is an objective measure of breathability. A controlled flow of air is driven through a mask and the difference in pressure on either side of the mask divided by the surface area of the mask should be < 5 cmH₂O/cm².
5. Flammability: An operating room has all the ingredients for a fire hazard, namely oxygen and the anesthetic gases as oxidizing agents, the drapes and the plastic material as fuel and the electrosurgical cautery or the laser as the source of ignition. Therefore, all products used within the operating room, including face masks, are tested for flame resistance. The masks must withstand exposure to a burning flame (within a specified distance) for three seconds.

continued on page 14

Know Your Equipment: Personal Protective Equipment

continued from page 13

In addition to the above tests, all materials used in construction of the face mask must be tested for skin sensitivity and cytotoxicity.

Respirators: Respirators are designed to reduce the wearer from exposure to airborne contaminants. The first modern respirators were developed in the early 1900s, and the impetus was to protect miners from hazardous dusts and gases, soldiers from chemical warfare agents, and firefighters from smoke and carbon monoxide. It was only in 1990s, when its use was advocated for HCP managing patients with drug-resistant tuberculosis. Its use surged again in the 2000s to combat infectious respiratory diseases such as SARS and Ebola. There are essentially three types of respirators. [8] (Figure 2)

Figure 2: Respirators protect the wearer from inhaling hazardous atmospheres, including fumes, vapors, gases and particulate matter such as dusts and airborne microorganisms.



Filtering Face-piece Respirators (FFR): These respirators are made of nonwoven polypropylene fabric and fit closely around the nose and mouth. Depending on its resistance to oil aerosols, FFR are rated "N" if they are not resistant to oil, "R" if somewhat resistant to oil, and "P" if strongly resistant (oil proof), and each of these are graded according to the ability to filter out 0.3 micron particles. The most popular FFR, the N95 respirator filters 95% of the 0.3-micron airborne particles. The National Institute for Occupational Safety and Health (NIOSH) have granted N95 an assigned protection factor (APF) of 10 which means that it reduces the aerosol concentration to 1/10 of that in the ambient air, or it blocks 90% of airborne particles from crossing the respirator. The FFR should be fit-tested for effectiveness for each individual user. The tight seal makes it harder to breathe even though the pressure differential is <math><5 \text{ cmH}_2\text{O}/\text{cm}^2</math>.

N95 respirators are called by different names across the world. It is known as FFP2 in the European Union, KN95 in China and P2 in Australia. The N95

comes in two shapes: the cone and the duckbill. N95 respirators with exhalation valves are available, but these should not be used while doing sterile procedures as the unfiltered exhaled air would escape onto the sterile field.

N95 respirator is disposable and not designed for extended use. However, during this pandemic when resources are limited, the infectious disease society in their guidelines and the Center for Disease Control (CDC) have suggested extended use or reuse of N95 respirators. [9] The common decontamination methods such as high temperature steam sterilization, 70% propyl alcohol, soap and water and bleach washing have been shown to degrade these types of respirators. The disinfection method that caused the least degradation of mask integrity is the use of vaporous hydrogen peroxide (VHP), ultraviolet (UV) radiation and microwave generated steam. [9, 10] A paper envelope may be used to store the mask between uses.

Elastomeric respirators: The tight-fitting face-piece of an elastomeric respirator is made of viscoelastic material such as rubber or medical grade silicon with nylon straps and has a replaceable filter cartridge housed in a polypropylene casing. These are available as half face-piece which covers the nose and mouth and the full face-piece that also covers the eyes. Like FFR, these respirators require fit testing. The APF of a half face-piece is 10, while that of a full face-piece is 50.

The elastomeric respirators are designed to be reused after cleaning the face-piece with water and detergent and disinfected by soaking in bleach. The filters should not be soaked in bleach and must be detached and cleaned with disinfectant wipes before reuse or replaced if these are clogged. Like the FFR, these filters are classified as N, R or P, depending on its resistance to degradation by oil-based aerosols.

The challenges to the use of elastomeric respirators are lack of familiarity, constrains on communication due to muffling of voice of the wearer and the limitation to downward gaze.

Powered air purifying respirator (PAPR): These battery-powered respirators blow filtered air into a helmet with a disposable face-piece. The blower may be fitted with a mechanical filter to block out particulate matter or even a chemical filter to protect the wearer from toxic fumes. Depending on the filter and the face-piece, the APF of a PAPR can range from

continued on page 15

Know Your Equipment: Personal Protective Equipment

continued from page 14

25 to 1000. The PAPR is the only option if the HCP fails a fit test with a FFR or an elastomeric respirator. The challenges to use of PAPR are they are bulky and has physiological and ergonomic impact on the operator.

The use of PAPR in the operating room has not been recommended as the wearer's exhaled, unfiltered air could contaminate the surgical field.

Respirators and MRI safety

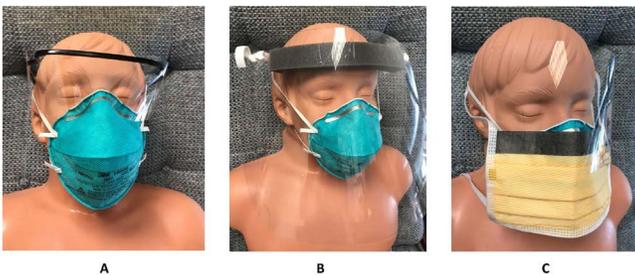
In a recently published study [11], that compared different respirators for use within a MRI suite, it was found that the cone-shaped N95 respirators, which has ferro-magnetic staples to hold the straps, underwent torque because of the magnetic field and could get lifted off the face of the wearer. This made them ineffective in providing a tight fit. The 'duckbill' shaped respirator provided the best seal in an MRI suite and should be used by the HCP. Patients with COVID undergoing MRI should wear surgical masks and it is not necessary to remove the metal nose piece as it is not ferromagnetic.

The battery powered PAPR cannot be used within the magnetic gauss line of the MRI, but the elastomeric mask may be safe as it is made of medical grade silicon or natural rubber.

Eye protection

It is crucial to protect all mucosal surfaces from contaminated aerosols, including the eye. Ideal eye shields should not impair vision and protect the eyes both from the front and sides. (Figure 3)

Figure 3: The eye protection should be impervious and clear. These could be a pair of spectacles resting over the bridge of the nose (A), a visor with a head band (B) or a transparent plastic sheet incorporated on to the face mask (C).



Gown, hood, gloves, and shoe cover

While performing procedures that are aerosol generating, such as endotracheal intubation, tracheostomy, mask ventilation and resuscitation, it is strongly recommended that all HCP in the proximity should wear a water-repellant gown, gloves, eye protection and a head cover along with a N95 respirator. It is also equally important that the correct

technique of donning and doffing of the protective gear should be practiced. [12]

A level 4 surgical gown should meet the following criteria

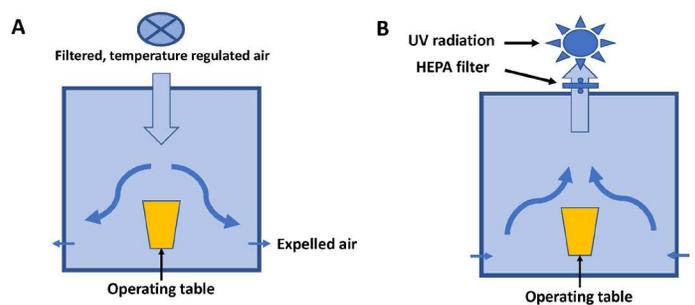
- Prevent all fluid penetration for up to 1 hour
- May prevent virus penetration for up to 1 hour
- Barrier level performance is tested with a simulated blood containing a virus, and no viral transmission should be detected.

Positive and Negative pressure rooms

The pressure within a modern operating room is maintained positive by blowing filtered air onto the sterile field which then flows, carrying the contaminated air out of the room through the vents located close to the floor. This has shown to reduce airborne contamination of the surgical field.

However, when managing a patient with an aerosol-generating infectious disease such as COVID-19, it is important to contain the virus-laden contaminated air and suction it out in a controlled manner, in order to protect the healthcare personal within the room. The air within the negative pressure room is suctioned out and passed through a high-efficiency particulate air (HEPA) filter to reduce the viral load. An additional level of safety can be incorporated by subjecting the expelled air to UV radiation to kill the viruses that do pass through. (Figure 4)

Figure 4: Schematic of a Positive pressure (A) and a Negative pressure (B) operating room.



However, a positive pressure operating room with a negative pressure anteroom could provide the advantages of both systems.

continued on page 16

Know Your Equipment: Personal Protective Equipment

continued from page 15

After an aerosol generating procedure, the rate at which the airborne viral contamination is removed depends on the air changes per hour (ACH) in the procedure room. The normal recommended 20 ACH is efficient in removing 99% of contaminants in 14 minutes and 99.9% in 21 minutes. [13] This is true for both positive and negative pressure rooms.

Filters for breathing circuit

The best strategy for protecting the anesthesia machine from contamination by a potentially infected patient is placing a high quality viral filter between the breathing circuit and the patient's airway with the capability to sample gas for analysis from the machine side of the filter. [14] A heat and moisture exchange filter (HMEF) help to preserve humidification. The viral filtration efficiency (VFE) is 99.99% for most commercially available HMEF. A second filter between the expiratory limb of the breathing circuit and the anesthesia machine will provide additional safety.

The need for adding a filter on the gas sampling line depends on the design of the anesthesia machine. Machines that route the measured gas to the scavenging system (e.g. Dräger Fabius) do not need it, whereas it is needed in those that direct it back to the breathing circuit (e.g. Dräger Apollo & Perseus). The water-trap of the gas analyzer has a 0.2 µm hydrophobic filter downstream, to filter out the water vapor. However, when monitoring the respiration in a patient getting oxygen through a nasal cannula, it is prudent to attach a 0.2 µm filter upstream to the water trap to prevent its contamination.

This COVID pandemic has made the HCP aware of the need to understand the effectiveness and limitations of the personal protective equipment that they use to protect themselves and the non-infected patients under their care.

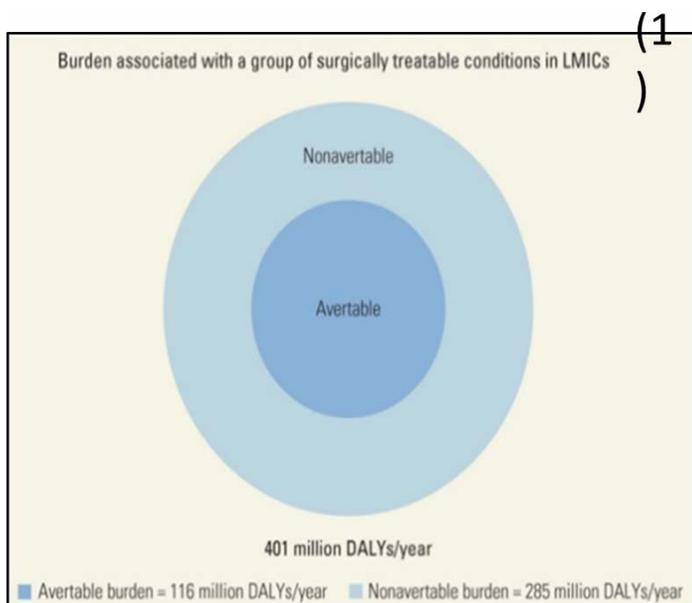
References

1. Peng PW, Ho PL, Hota SS. Outbreak of a new coronavirus: what anaesthetists should know. *Br J Anesth* 2020; DOI: <https://doi.org/10.1016/j.bja.2020.02.008>.
2. Wax RS, Christian MD. Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus (2019- nCoV) patients. *Can J Anesth* 2020; DOI: <https://doi.org/10.1007/s12630-020-01591-x>
3. World Health Organization. Coronavirus disease (COVID-2019) outbreak. Available from URL: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> (Accessed May 1st, 2020)
4. Wang D, Hu B, Hu C, et al. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus–infected pneumonia in Wuhan, China. *JAMA* 2019; DOI: <https://doi.org/10.1001/jama.2020.1585>.
5. Sim MR. *Occup Environ Med* 2020; 77:281–282
6. <https://groups.oist.jp/nnp/diy-face-mask> . Assessed 9/29/2020
7. <https://blog.gotopac.com/2020/07/31/surgical-medical-mask-astm-requirements/>
8. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/n95-other-respirators.html>
9. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html>
10. Viscusi DJ, King WP, Shaffer RE. Effect of decontamination on the filtration efficiency of two filtering facepiece respirator models. *J Int Soc Respir Prot.* 2007;24:93–107.
11. Murray OM, Bisset JM, Gilligan PJ, Hannan MM, Murray JG. Respirators and surgical facemasks for COVID-19: implications for MRI. *Clinical Radiology* 2020; 75: 405-407
12. Cook TM, El-Boghdady K, McGuire B, McNarry AF, Patel A, Higgs A. Consensus guidelines for managing the airway in patients with COVID-19: Guidelines from the Difficult Airway Society, the Association of Anaesthetists the Intensive Care Society, the Faculty of Intensive Care Medicine and the Royal College of Anaesthetists. *Anaesthesia* 2020, 75, 785–799.
13. <https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#tableb1> Assessed 4/29/2020.
14. <https://www.apsf.org/faq-on-anesthesia-machine-use-protection-and-decontamination-during-the-covid-19-pandemic/> Assessed June 10, 2020

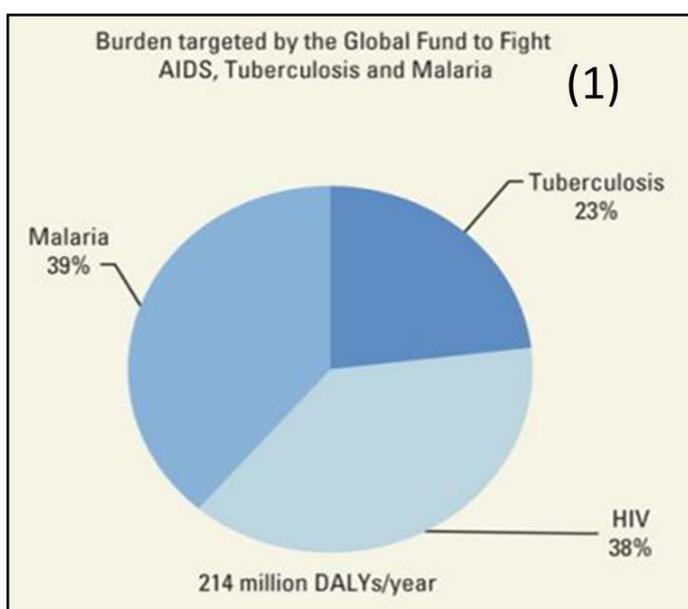
Anesthesiologist training program to start in Kenya 1/2021, Training future leaders to meet the global need for anesthesiologists.

by Donna Spratt,MD, Gregory Sund,MD

The need for surgical services in developing countries is overwhelming. Globally there are more avoidable deaths from untreated surgical emergencies than the number of people living with HIV-AIDS, tuberculosis and malaria combined (1)



It is estimated that eleven percent of the world's burden of disease comes from surgically correctable conditions (2).



The United Nations along with the World Health Organization (WHO) have recently named improved access to safe, high quality surgical, obstetric, and anesthetic care as a priority in achieving Universal Health Care (2).

The World Federation of Societies of Anaesthesiologists recommends a target of five physician anesthesiologists per 100,000 population (3). In Kenya there are 0.43/100,000 of population. In other East and Central African countries, the numbers are even lower. In Burundi, there are currently 7 anesthesiologists for a country of 11 million people. And there are currently no physician anesthesiology programs in South Sudan, Central African Republic, Eritrea, Congo, Niger, Togo, Liberia, Somalia, Chad, or Guinea. The cost of this is high.

Lack of access to safe anesthetic care costs millions of lives every year. In some parts of Sub-Saharan Africa, the mortality associated with general anesthetic is as high as 1:150 anesthetic (4). This is a problem which has a solution, which is to increase the number of high-quality training programs for physician anesthesiologists, while equipping these specialists with the skills needed to train future generations. While it is important for anesthesiology residents to learn how to provide safe and cost-effective care during their training, it is equally important that they learn leadership skills, policy and workforce development, and emerge with the capacity to start future training programs.

The Pan African Academy of Christian Surgeons (PAACS) has been training surgeons in Africa since 1996. PAACS currently has 10 training sites throughout Africa, with training in general surgery and specialty training in orthopedic surgery, cardiothoracic surgery, pediatric surgery and head and neck surgery. Every year PAACS enrolls African doctors who desire to become surgeons and serve in rural parts of the continent, often where they will be the only surgeon for millions of people. If you would like to learn more information about PAACS, additional information can be found at paacs.net.

Beginning in 2021, PAACS will begin a residency training program for physician anesthesiologists in Kenya at AIC Kijabe hospital. The training faculty are full time unpaid missionary physician anesthesiologists from the United States. Immediately, there will be an increase in the

continued on page 18

Anesthesiologist training program to start in Kenya 1/2021, Training future leaders to meet the global need for anesthesiologists.

continued from page 15

number of high-quality training programs for physician anesthesiologists in Africa. Since anesthesia residents learn to provide safe, cost-effective care in the operating room under the supervision of an attending, the clients of the hospital soon benefit from expanded services. After graduation the trainees are contracted to work for two years in hospitals with PAACS training programs. Here, they will continue to be mentored and fine tune their leadership skills as they provide care and train their successors. These anesthesiologists are also candidates to teach at future residency training programs for physician anesthesiologists as funding allows.

The cost to train each resident is \$25,000/year, which includes a stipend of almost half of this amount. The anesthesia council of PAACS must fund the training cost of each anesthesiology resident. Expansion of this program will be in phases as funding and training faculty become available. If you would like more information about this program or have any questions, please feel free to email me at donnasprattaugust21@gmail.com

1. Bickler SN, Weiser TG, Kassebaum N, et al. Global Burden of Surgical Conditions. In: Debas HT, Donkor P, Gawande A, et al., editors. *Essential Surgery: Disease Control Priorities, Third Edition (Volume 1)*. Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2015 Apr 2. Chapter 2. Available from: https://www.ncbi.nlm.nih.gov/books/NBK333518/doi:10.1596/978-1-4648-0346-8_ch2
2. WHA Resolution 68.15. Strengthening emergency and essential surgical care and anaesthesia as a component of universal health coverage. World Health Assembly, Geneva, May 2015. Available at: <http://apps.who.int/medicinedocs/documents/s21904en/s21904en.pdf>. Accessed August 1, 2018.
3. APA Kempthorne, Peter MBChB, FANZCA*†; Morriss, Wayne W. MBChB, FANZCA†; Mellin-Olsen, Jannicke MD, DPH†§; Gore-Booth, Julian MA† The WFSA Global Anesthesia Workforce Survey, Anesthesia & Analgesia: September 2017 - Volume 125 - Issue 3 - p 981-990 doi: 10.1213/ANE.0000000000002258
4. WHO Guidelines for Safe Surgery 2009 Safe Surgery Saves Lives, Section II, p.14

NEW PSA MEMBERS!

Theophilus Abah
Denise Abdulahad
Nidhi Agrawal
Oluwanifesimi Akinwamide
Saher Ali
Anwar Ul Haque Alinani
Kingsley Anosike
Taylor Anspach
Kody Armann
Thomas Arns
Alyssa Ayala
John Barbe
Dylan Bard
Jeffrey Berwager
Musa Bilal
Bennett Bird
Matthew Brackbill
David Broadbent
Jasmine Brown
Noe Cabello
Matthew Chapman
LU Chou
Matthew Conboy
Matthew Crain
Denali Davis
Clifford Deerman
Natale Demarco

Michael Depalma
Michael DiMuzio
Andrew Dorion
Matthew Dowhower
Zachary Drennen
Thomas Dunne
Matthew Evers
Youssef Fardos
Ian Fritz
Zachary Fuller
Zachary Gandee
Ishan Garg
Mitchell Gilson
Anna Goetze
Ragini Gupta
Lauren Hammell
Devin Harkins
Christopher Heleniak
Garret Hillsdon-Smith
Ruby Holland
Lauren Holleran
Michael Hsu
Kayla Jardine
Amal Javaid
Kevin Jin
Taylor Johnson
Samuel Joseph

Nyokabi Kamau
Sara Kaskowitz
Nadeem Kazi
Danielle Lapoint
Alexis Leanza
Rosie Li
Mariusz Ligocki
Regina Linganna
Jovanna Linnen
Alice Liu
Kimberly Lu
Sanjay Madnani
Christopher Mahrous
Gilbert Marchant
Jennifer Mardini
Korey Marshall
Carlos Martinez Parra
Max Masgudov
Ilya Medved
Anuj Mehta
Jenna Meriggi
Sandra Mikhael
Haig Minassian
Rebecca Minorini
I. Neil Mukherjee
Lauren Nahourai
Jenifer Nasreen

Rohit Navlani
Louise Ngo
Daniella Ohnemus
Alexander Olson
Gavyn Ooi
Oluwasinmisola
Opeyemi
James Oshea
Tolulope Oyetunde
Dalton Paluzzi
Stuart Pasch
Payal Patel
Anish Patel
Shaun Pateman
Jacob Peterson
Matteo Petrera
Steven Pham
Jacob Pickle
Angelica Pinninti
Steven Punzell
David Quintero
Vijay Raj
Wesley Ramirez
Chandramouli
Rathnam
Kristy Reinert
Michael Roegner

Isabela Rosales
Isabella Rosales
Michael Rosenberg
Gina Russell
Cody Sacks
Jacob Saks
Mubasher Saleem
Maria Saraf
Taylor Simpson
Natasha Sinai Hede
Iman Soliman
Alexander Stavros
Joshua Stolz
Nicole Tomkowich
Maegan Tupinio
Malina Varner
Michael Velez
Sheri Wang
Matthew Weaver
David Wideman
Nicholas Willison
Jennifer Witek
Amanda Yisrael
Hsiangkuo Yuan
Brian Yuskevich
Rameez Zaman
Xijun Zhu

Virtual Versus Face-to-Face: An Old Guy's Opinion



Joseph Answine, M.D., FASA

PSA PRESIDENT

When I attended medical school in the late 80s, we recorded our lectures; with a cassette tape recorder. We paid for a note service. Each of us on a rotating basis was assigned to be a scribe for every lecture, requiring taking a front seat in the auditorium and then reviewing the recording. The notes were prepared on a word processor and likely downloaded onto a 5.25-inch floppy disc. The only individuals receiving the notes by E-mail were those with last names beginning with "E" since the paper copies were stuffed into our mailboxes which were in alphabetical order.

The virtual world developed as I progressed through my medical career, and "you can't teach an old dog new tricks" is a very appropriate statement for me when dealing with this technological advancement.

2020, however, forced us to at least attempt to adapt to virtual meetings, whether educational, board meetings, houses of delegates (HODs) and so on. I have been involved with virtual meetings having participants from all over the world and down the hall.

So, what are my thoughts about iPhones and computer screens versus mostly clean suits and face-to-face conversations?

For educational seminars such as the ASA annual meeting, I love it! I can sit back and listen, then move

on to the next with a few mouse clicks from the same recliner in my happy place; my basement. I can ask questions via a chat box or speak live with smaller groups. I surprisingly can keep my attention for the most part but if I doze off temporarily, I am not chastised for drooling on myself. And, alcohol is allowed if you so choose.

As for board meetings, reference committees and HODs; I have an opposite opinion. Nothing beats face-to-face gatherings with healthy heated debates and private attempts at "friendly" arm-twisting in the back of the room. Facial expressions and passion which commonly sway opinions are lost via chat or through a computer screen. Many decisions are made after listening to multiple opinions delivered at microphone A,B, or C; or grabbing someone by the arm as they walk back to their seat and asking for a little clarification. I cannot warm up to decisions made after collating online comments.

Studies show at least similar effectiveness when comparing online and in-person learning, and virtual education has the added benefit of listening live and/or via a recording at a later time. It would have saved me from a lot of begging and bartering for notes when I slept through a pre-med class. And, it would have made up for those scribes in medical school that spent more time drawing cartoons instead of taking even close to reasonable notes.

However, I struggle to accept virtual decision-making meetings where the lack of debate and in-your-face discussions could alter futures of groups, institutions, societies as well as regulations and laws. And, we cannot underestimate the power of in-person networking that forms strong relationships for the future.

Since I initially wrote this, the last day of the virtual ASA HOD came to a screeching halt when debate and amendments overwhelmed the system. The HOD will not be reconvened until an appropriate platform is found that can handle the online traffic. The Pa Med Society HOD, on the other hand, is not allowing debate on amendments made during the sessions. Neither of these situations is ideal or allows me to accept virtual as an appropriate alternative to in-person decision making.

Opinion on changing induction technique



Jonathan Roth, M.D.

A quick, simple, effective, and inexpensive way to reduce hypotension and redistribution hypothermia during anesthetic induction. We should all be doing this.

Sun recaps multiple studies that have shown hypotension, even if very brief, is associated with acute kidney injury.¹ Maheshwari et al found that as a result of anesthetic management, a substantial fraction of all hypotension occurred before surgical incision. This hypotension was associated with postoperative kidney injury.² Even small increases in plasma creatinine, corresponding to stage I kidney injury, are associated with renal dysfunction 1 to 2 years after surgery.³ In addition to causing hypotension, anesthetic induced vasodilation also causes redistribution hypothermia.⁴ Intraoperative hypothermia is commonplace⁵ and is associated with many adverse outcomes.^{6,7} Intravenous propofol is the most widely used technique for anesthetic induction. However, its use is associated with hypotension and redistribution hypothermia. This author proposes that a small modification in how anesthetic inductions are performed can reduce the incidence and severity of these adverse effects.

Either intravenous induction with prophylactic phenylephrine administered immediately before propofol, or an inhalation induction with sevoflurane resulted in 0.4°C to 0.5°C less redistribution hypothermia than standard propofol alone induction, presumably because of less vasodilation.⁸ In this study, data were also collected that indicated there was less hypotension, both in frequency of occurrence and magnitude, with

these alternative induction techniques, but those results were not published as the focus of the study was on temperature. Hypotension can occur rapidly with intravenous propofol inductions. Decreases in blood pressure with inhalation inductions are usually more gradual. Such gradual decreases could be addressed earlier, or prophylactically, before there is clinically important hypotension. Thwaites also concluded that inhalation inductions were more hemodynamically stable than intravenous inductions.⁹

Vasodilation is the common fundamental cause that needs to be addressed. The vasoconstrictor phenylephrine opposes the vasodilation. Sevoflurane inductions usually cause less vasodilation than propofol inductions. Thus, with what we now know, I propose that the standard intravenous propofol induction now include prophylactic phenylephrine, particularly in hemodynamically and thermally (Table 1) higher risk patients. While the optimal phenylephrine dose may not yet be known, a fixed dose of 160 mcg has been used and was effective in adults.⁸ The cost is negligible in terms of both time and money. In the absence of a specific contraindication (e.g., risk of aneurysm bleed), the rare case of transient hypertension from the prophylactic phenylephrine is not likely to be harmful.^{8,10} Studies are needed to demonstrate improved clinical outcomes resulting from the hemodynamic and thermal benefits of these alternative induction techniques. Until then, in the absence of outcome studies, there is likely meaningful clinical benefit with little downside.

We should also consider performing inhalation inductions more often, at least in training programs. The author acknowledges the reality of production pressure for expediency. The administration of intravenous phenylephrine adds 10 seconds to the induction. A well conducted inhalation induction takes 1 to 2 minutes longer than an intravenous induction. Two of the many other potential benefits of performing an inhalation induction are as follows. First, trainees will obtain more airway experience. In current practice, after the propofol is given, either an LMA or endotracheal tube is inserted leaving limited opportunity to gain experience in managing an airway in a spontaneously breathing patient. Second, trainees will become more proficient in a technique that may be of value should there be a future propofol shortage, a patient with a propofol allergy, or the rare case where an inhalation induction is indicated. If one is not sufficiently trained in a technique, one will not be as proficient when needed and will less likely to think of it and use it in the future.

continued on page 20

Table 1 – Possible situations where patients are at increased risk of developing a greater degree of hypothermia or may have increased risk of hypothermia associated complications

Risk posed by postoperative hyperdynamic/tachycardic response to hypothermia

- Coronary artery disease
- Stenotic valvular heart disease
- Dynamic obstructive cardiomyopathies

Increased risk or consequence of infection

- Immunocompromise
- Colon surgery
- Foreign body placement (e.g., artificial joints)

Potential for large blood loss increased by hypothermia induced coagulopathy

- Spine surgery
- Liver surgery
- Prostate resection
- Large exposure of tissues that have a propensity to bleed
- Hypercarbia exacerbating hypothermia induced coagulopathy

Increased risk of hypothermia due to patient characteristics

- Elderly
- Frail

Inability or delay in warming patient or environment

- Lateral or prone positioning
- Other prolonged positioning
- Robotic surgery
- Axillary-bifemoral artery bypass
- Large surface area burn
- Remote location with inability to adjust ambient temperature
- Warming devices not available
- Risk from hypothermia induced vasoconstriction
- Vascular surgery
- Raynaud's disease or syndrome

ASA Update 2020

Erin A. Sullivan, MD, FASA

DISTRICT IX DIRECTOR

“All of us might wish at times that we lived in a more tranquil world, but we don’t. And if our times are difficult and perplexing, so are they challenging and filled with opportunity.”

— Robert Kennedy

2020 has proven to be a difficult and perplexing year on many fronts, from our professional practices to our personal lives. Yet, it has also been an opportunity to reflect on where we have been, where we want to go in the future and innovative ways and ideas to achieve our goals. COVID-19 has forever changed life as we once knew it, but our specialty adapted quickly to the new environment and evolved with a new resilience and zeal for “advancing the practice and securing the future”.

This has been the year of virtual videoconferencing, a skill that I somewhat lacked in the pre-COVID era. Now, after many months of conducting and attending meetings in the virtual platform, in many ways, I find it to be more efficient and convenient than in-person meetings. But while virtual meetings are great, I do miss the camaraderie and face-to-face contact with my friends and colleagues. Some things just can’t be substituted with technology. Still, I think that many of our professional meetings in the future will continue in a virtual or a hybrid format.

The American Society of Anesthesiologists hosted several virtual videoconferences this year including six COVID-19 Town Hall webinars, LEGISLATIVE CONFERENCE 2020, pre-August 2020 Board of Directors webinar, August 2020 Board of Directors meeting, ANESTHESIOLOGY 2020 and the 2020 ASA House of Delegates and Reference Committee meetings. The vast majority of these virtual meetings were conducted very successfully with the exception of the 2020 ASA House of Delegates Session II. The session remains in recess due to abundant technological issues that did not allow for the completion of all deliberations. During this session, and prior to the technology glitches that started during discussion of the Professional Affairs Reference Committee report, we were able to elect our new ASA Officers and approve the Administrative Affairs Reference Committee report.

Following the second session of the ASA House of Delegates and after consultation with the Speaker and Vice Speaker of the House of Delegates as well as Dr. Larry Epstein, Chair of the ASA Bylaws Committee, it was determined that Monday (October 5) night’s partial House of Delegates meeting resulted in a transition to the 2021 governance year. Therefore, the new ASA Officers, Committee Chairs and Committee members were installed. On Tuesday, October 6, the ASA Board of Directors conducted a successful special meeting called by ASA President Beverly Philip, MD, FASA. During this meeting, the 2021 Board Review Committees and budget for the coming year were approved.

continued on page 23

The ASA Officers elected for 2021 are

President- Beverly K. Philip, MD, FASA

President-Elect – Randall M. Clark, MD, FASA

First Vice President – Michael Champeau, MD, MBA, FASA

Immediate Past President – Mary Dale Peterson, MD, MBA, FASA

Vice President for Scientific Affairs – Andrew D. Rosenberg, MD, FASA

Vice President for Professional Affairs – Jeff Mueller, MD, FASA

Secretary – Kenneth Elmassian, DO, FASA

Assistant Secretary – Kraig S. de Lanzac, MD, FASA

Treasurer – Donald E. Arnold, MD, FASA

Assistant Treasurer – James Mesrobian, MD, FASA

Speaker, House of Delegates – Ronald L. Harter, MD, FASA

Vice Speaker, House of Delegates – Patrick Giam, MD, FASA

The 2020 ASA House of Delegates will reconvene at a future date before the end of the calendar year after we can implement a suitable virtual platform to allow for thorough deliberation of the remaining reference committee reports (Professional Affairs, Scientific Affairs and Finance). House of Delegates members may bring any actions taken during the House of Delegates Session II for reconsideration once the House reconvenes.

The ASA remains committed to continued advocacy for patient safety, physician-led patient care, fair payment for services rendered, solutions to drug shortages, the opioid crisis and resident debt relief. Our specialty will continue to be challenged on the legislative and regulatory fronts and we need the help of each and every anesthesiologist to meet these challenges. Thank you to those who are already engaged and to those who are not yet engaged, I would strongly encourage you to join us. We have accomplished so much with so little, but there is greater strength in numbers. Just imagine what we could achieve if more are willing to join the effort to “advance the practice and secure the future”.

It is a pleasure to serve as your District IX Director to the ASA Board of Directors along with your Alternate Director, Joe Answine, MD, FASA. Thank you for the opportunity to represent our Pennsylvania Society of Anesthesiologists members.

Congratulations and Thank You!

A Brief Reflection: Anesthesiologists During a Respiratory Viral Pandemic

continued from page 11

expanded emergency department service. Designated 'Covid buildings', 'Covid floors', 'Covid teams' were being led by anesthesiologists, among others. We worked alongside internists, emergency physicians, pulmonologists, respiratory therapists and nurses, with whom our paths would likely otherwise have never crossed.

Within my health system, both our chairman and residency program director lead by example as they volunteered to lead 'Covid ICU' and 'Covid Airway Response' teams. Our department's anesthesiologists, residents, nurse anesthetists, administrators and technicians bravely entered uncharted waters, both leading and teaching others new skills. Our additional responsibilities were anything but mundane. Admitting patients to wards, conducting daily wards rounds and moderating multidisciplinary rounds, orchestrating discharge arrangements, coordinating with social

workers, hosting regular virtual family meetings. During this time, an encouraging camaraderie was fostered among medical and surgical disciplines, while a new respect emerged for each other's work.

While we collectively hope that the worst of this COVID-19 pandemic is behind us all, we know that the challenges have strengthened and unified our specialty. We should be proud of the resilience and poise with which we carried out our duties. We are team builders and leaders. Pause, reflect a moment and think about how important your contribution has been thus far. Sing for the unsung heroes, anesthesiologists.