

Beaumont Hospitals, Department of Anesthesiology Didactics

- CA1 residents will receive a group of educational sessions (simulator and/or lecture) each day during lunch for their first month. This makes 20 daily sessions dedicated solely to the basics of anesthesia.
- CA1 didactics are primarily in a lecture format. Note that for many of the explanations given below we provide a list of questions...an excellent stepping-off point for an interactive discussion with (hopefully prepared) residents.
- CA2 didactics are primarily in a case discussion/PBLD format. There are examples given for each topic (by way of example for prospective educators), but we expect discussions to include multiple cases.
- CA3 didactics are primarily in a PBLD or oral boards format

CA1 Didactics

Didactic Session: The first 20 days	Rationale
Substance Abuse/Addiction	Outlined elsewhere in the application, this serves as part of the new resident orientation program.
Drown-proofing simulator session 1: Routine induction	<p>The first week of lectures are simulator sessions. The idea is to "drownproof" the new residents such that they gain a basic level of comfort and safety in the operating room. We feel that approaching these topics early-on in a simulator/discussion setting is a fine way of building their confidence, creating esprit-de-corps, and teaching them the most basic anesthesia problems quickly.</p> <p>The first topic is routine induction. What are the standard ASA monitors? Which one do you put on first? Why do we preoxygenate? How do you attach the syringe to the stopcock? Just how quickly can you push the drug? Are bubbles in the IV line really bad? When do you turn on the anesthetic gas? When do you turn down your fresh-gas-flows? Basically run through an induction step-by-step. We do the exact same induction for each of the new residents with all of the residents watching each other. After they've seen it 6-10 times they'll get the rhythm and pattern down.</p>
Drown-proofing simulator session 2: Hypoxia	It's the middle of the case and the saturation drops precipitously. How about if it drops slowly? This session focuses on drilling troubleshooting into the new residents' minds...100% oxygen, turn off the ventilator, squeeze the bag to feel for compliance, check delivered FiO2, check for disconnect, auscultate...again each resident performs this check in front of his/her peers, and by the end of the session it should hopefully be as routine as can be.
Drown-proofing simulator session 3: Hypotension	Every new resident has faced the same question: do I call my attending for this blood pressure, or do I give some phenylephrine? How low is too low? Why does the cuff keep cycling over and over again? Frequent causes of hypotension (not that many, really...anesthesia

imperfecta and hypovolemia being the most likely culprits) are covered over and over again with each resident until the evaluation and treatment is second nature.

Drown-proofing simulator session 4: Movement

Ah movement. The patient moves and the surgeon shouts "the patient's awake!". True or not? If there are 3 hours left in the case, the patient is moving, and there are no twitches is it a crime to give more paralytic? If the patient is moving and there are 5 minutes left, do you give more paralytic? A dose of succinylcholine after the neostigmine has already been given? This allows for a great discussion about what MAC really means, and the differences between immobility and amnesia/hypnosis.

Drown-proofing simulator session 5: Airway management

By the end of the first week the residents should hopefully know which hand to hold the laryngoscope in. This session allows for a discussion about different routine airway management tools (curved/straight blades, LMA, oral/nasal airways), indications for rapid sequence induction, and an introduction into approach of the difficult airway.

Preoperative evaluation

Fresh from internship, a typical preoperative evaluation can take over 30 minutes and focus on prior allergies to shellfish, patterns of facial rashes, and frequency of loose stools. This session is meant to focus the residents on drilling down to the key elements needed on a focused anesthetic history and physical, including lab work, Xray studies, PFTs, etc.

The anesthesia machine

We typically give this session in a free operating room where the residents can put their hands on the machine, disassemble/reassemble the standard parts, and run through a machine check under supervision. Although this is a standard new resident lecture, it's become more and more complicated lately as the old "simple" anesthesia machines are replaced by their electronic gadget-y counterparts.

Fluid and blood therapy

This is where the classic 4:2:1 rule is taught along with colloids vs. crystalloids, triggers for blood component therapy, measuring urine output, etc.

Airway evaluation and management

Yes this was already covered in the simulator session, but we are airway experts, and one can never have enough exposure to this topic. The 11-point airway evaluation is discussed as is the ASA difficult airway algorithm.

Intraoperative monitoring

What are the "standard" ASA monitors? Why aren't temperature and continuous CO2 monitoring required? How exactly do arterial lines and central lines work, and who needs them? Does anyone need a PA catheter anymore? This is also a good place to introduce TEE, although the details are way beyond the scope of this initial lecture series.

Emergence from

Anesthesia does not end once the tube is taped, nor does it end with the

anesthesia	last skin staple. Providing a smooth return to the land of the living (remember, our specialty is called "anesthesiologie et reanimation" in France) can be a tricky prospect to new and experienced anesthesia providers alike. Just how does one keep a patient from bucking and coughing? What is meant by "Stage 2"? How does "open your eyes" correlate with ability to extubate? Who is a candidate for "deep extubation"? Is this any different for patients with LMAs?
Volatile anesthetic uptake and distribution	Fa/Fi, uptake into vessel rich/vessel poor tissues, blood:gas partition coefficients, solubility, 2 nd gas effect, diffusion hypoxia, MAC, and the significance of each us taught here.
Pharmacokinetics and dynamics	This one SHOULD be a review of medical school pharmacology, but focuses specifically on anesthetic agents. This is an excellent forum for discussing context-sensitive half-lives, dosing for obese and elderly patients, enzyme induction, and effects of hepatic/renal dysfunction on medication titration.
Induction agents	This is the topic that you have your brand new attending present (ditto for the next 3). Propofol, etomidate, ketamine, barbiturates and benzodiazepines. Onset time, duration of action (depending on dose!), dose, cost, unique positives and unique negatives.
Paralytics and reversal agents	Onset time, duration, ED95 vs. intubating "overdose", choice of appropriate paralytic (cost, patient population, comorbidities). What exactly is a train-of-four? How good are we at assessing TOF%? What are DBS, sustained tetanus, and post-tetanic potentiation? Can anyone really do a 5 second head-lift? What is post-operative residual curarization and should we care? What do you do with type-2 block with succinylcholine? Are there any new agents on the horizon that might change the way we practice?
Opiates	Another opportunity to talk about pharmacologic principles...is the half-life of fentanyl really short or really long? Should you use a short acting agent during the case, and transition to a longer acting agent at the end of the case or vice versa? How can you use opiates to ensure a smooth emergence? Do patients under general anesthesia experience 'pain'?
Local anesthetics	Local anesthetics are great...they work topically, locally, regionally and generally. They make dysrhythmias stop, and they cause dysrhythmias. They blunt sympathetic responses which can be very good or very bad. A discussion of the perioperative stress response fits in perfectly here, and it should be covered many times during residency, as this is one of the "hot topics" in our field right now.
Regional anesthesia & acute pain management	An overview lecture touching on the points of indications, contraindications, side effects/complications, and techniques. Management of the chronic pain patient undergoing surgery is also discussed. Chronic pain is discussed elsewhere.

EKG analysis

Honestly now, do we all remember everything we were taught during medical school about reading EKGs? Since every patient the resident will see for the next three years will have a continuously monitored EKG rhythm displayed on the monitor, it makes sense to review the basic and not-so-basic rhythms and abnormalities in a formalized setting above and beyond ACLS (which all of our residents will be certified in per hospital GME policy).

Applied physiology, putting it all together

This is the final "putting it all together" lecture that the new residents will receive, and will test their ability to understand why we do what we do, and why we do it how we do it. The lecturer will point out how the autonomic nervous system is intricately interwoven into every decision we make, and how choice of any medication results in positive and negative effects.

Didactic Sessions: The rest of the year**Rationale****A review of respiratory physiology**

This and the next topic take up a significant amount of real estate in our textbooks for a reason: they're important and it's what we deal with everyday. This lecture should focus on the differences between spontaneous and mechanical ventilation, the benefits (or lack thereof) of PEEP/CPAP in the perioperative period, the benefits (or lack thereof) of using high or low FiO₂ settings during surgery, and respiratory challenges that occur in sick, elderly, obese, or pediatric patients.

A review of cardiac physiology

As with respiratory physiology, the nuances of cardiac physiology are vital to the safe management of patients at the extremes of the spectrum: elderly, frail, obese, and pediatric patients. Note, the clinical aspects of this discussion should NOT focus on the management of the cardiac surgery patient...that comes later.

Basics of anesthesia for general surgery

This is the beginning of our "Basics of..." series. Too often first year lectures are deep treatises on some obscure topic that's near and dear to the lecturer's heart. So we have designed a series of sessions that start with an hour lecture on the basics of a subspecialty, followed by a series of case discussions wherein the residents are encouraged to design all aspects of a patient's perioperative care. Anesthesia for general surgery discusses the challenges of bariatrics, oncology, geriatric, and trauma procedures. Yes, elderly and obese patients can present elsewhere (vascular, for instance), but an extensive abdominal procedure in an obese and elderly patient can yield a treasure trove of educational opportunities.

Basics of GU/GYN anesthesia

The first of the true subspecialty "Basics of..." sessions. In a similar format as mentioned above, a lecture on urine output, TURP syndrome, prostatectomy (and blood loss), kidney transplants, pelvic exenterations, and cystoscopies is followed by a series of interactive case discussions.

Basics of orthopedic anesthesia

We include a mini-positioning workshop with this session. It's interesting how uncomfortable it is to lie on an operating table for a few minutes with arms > 90 degrees, or prone without appropriate padding. Using a good-humored resident as a guinea pig, it's worthwhile demonstrating how to position patients for a variety of procedures, with an emphasis on preventing nerve and compression injury. The lecture and case discussion portions cover blood loss, methyl methacrylate cement, trauma, and spine procedures (lumbar and cervical, anterior and posterior).

Basics of pediatric anesthesia

Again, a basic lecture followed by case discussions. Are kids just small adults? Is laryngospasm a cause for panic? At what age can we consider them to be adult-like? Why are some pediatric anesthesiologists now advocating cuffed tubes for kids? Should succinylcholine be avoided no matter what in children? IV vs. inhalation induction? Nitrous or 100% oxygen for volatile induction? Is emergence delirium due to sevoflurane specifically or are there other factors at play?

Basics of vascular anesthesia

Probably the most rapidly evolving field of surgery! What we used to do with PA catheters and buckets of blood loss is now done with a little propofol sedation and a 22 gauge IV. This session focuses on the differences between open and minimally invasive procedures, all of the dreadful things that can still go wrong during a "simple" endovascular operation, and how to perform a safe anesthetic when miles away from the operating room in the vascular or radiology lab. This is also an excellent opportunity to discuss preoperative preparation of patients...eg, what work-up does a vasculopath with CAD, DM, HTN (and all of the other abbreviations) undergoing AV graft revision really need? What about heparin/Plavix/LMWH and regional anesthesia for these patients?

Basics of neuroanesthesia

This is a field that sometimes seems much more complicated than it really is. It's all about pressure, blood flow, and oxygen, and if you can point out that everything's happening in a rigid box, things start to fall into place pretty quickly. Case discussions focus on the trauma patient with subdural hematoma, managing increasing ICP, aneurysm clippings, and anesthetic management of neuro-radiology procedures such as aneurysm coilings.

Basics of ambulatory anesthesia

Although we prepare our residents well for the train-wreck patient having a massively invasive procedure, the truth of the matter is that most procedures are performed on an outpatient basis, and these procedures carry their own risks and challenges. This is the time to discuss the "big little problem" of PONV, efficiency and room turnover, opiate-sparing analgesia regimens, sleep apnea, LMAs, and age/weight limits for ambulatory centers.

Basics of perioperative

Are there benefits of adjunctive pain procedures, or should everyone

pain management

simply receive 250mcg of fentanyl (hey, that's what comes in the bottle afterall)? The use of intrathecal and epidural narcotics, nerve catheters, ultrasound guidance of needle placement, and management of inadvertent intravascular injections can all be covered here, again with a preliminary lecture followed by a series of case discussions.

CA2 Didactics

Didactic Sessions	Rationale
Obstetric PBLD	<p><i>A 30yo G1P0 parturient presents at 37 weeks with ruptured membranes and cervical dilation of 2cm. She requests an epidural for pain control. Her PMHx is significant for a VSD repair as a child, and she has had no significant symptoms or work-up in decades. Her BP is 150/100, HR is 85 with a faint holosystolic murmur, and she weighs 275 pounds.</i></p> <p>Participants should be prepared to discuss indications and timing of epidural placement, pre-eclampsia (including severe), implications of coexisting cardiac disease, issues in the obese including airway management and unique obstetric challenges, and appropriate diagnosis/management of common procedural complications.</p>
Cardiac PBLD	<p><i>A 35yo man with a history of IV drug abuse and HIV now presents for aortic valve replacement for moderate AI. Chest Xray, EKG, preoperative vital signs and laboratory workup are unremarkable, and his HIV is well controlled.</i></p> <p>Participants should be prepared to discuss the risk and benefits of PA catheters, TEE, and CVP monitoring in this patient, and in cardiac patients in general. Special concerns with TEE monitoring in HIV patients should be covered. Choice of induction agent, maintenance agents, and risks of recall should be discussed, as should challenges of "coming off of bypass" in a critically ill patient.</p>
Neuro PBLD	<p><i>A 70yo patient with PICA aneurysm is scheduled first for neuroradiological coiling (which turns out to be unsuccessful) followed by urgent surgical clipping. Her past history is significant for poorly controlled hypertension, diabetes, and hyperlipidemia. A dobutamine stress echo reveals an EF of 40%, no signs of wall motion abnormalities, and no inducible ischemia.</i></p> <p>Participants should be prepared to discuss the anesthetic management of cerebral aneurysms both in the radiology suite and in the operating room, to include monitoring, anesthetic technique, brain protection, CBF/ICP/CMRO2 management (especially during clipping), moderate hypothermia, and burst suppression. Furthermore, fluid and pressor management should be discussed as should techniques for smooth emergence and PACU management.</p>

Ethics PBLD

A 15yo child is brought emergently to the OR for exploratory laparotomy following an MVA. As you meet the parents in the holding area they mention that they are Jehovah's Witnesses, and do not want ANY blood products given whatsoever no matter what. The child's BP is 70/40, HR is 130, and HCT from the ER was 30%.

Participants should be prepared to discuss the legalities of this case including repercussions from the family's point of view if blood products are and are not given, and from the hospital's point of view if they are or are not given. And since it should be covered, we're giving you a 2nd case below for this session:

On 2 occasions you notice one of your colleagues heading straight from the Pixis machine to the restroom, and return with no drugs in hand. In addition you note that that colleague has been coming to work before everyone else lately, and leaving later than he normally should. You and your spouse have socialized with this person in the past, and as far as you know all is good in his private life.

Participants should be prepared to discuss the risks, signs, and symptoms of drug abuse and addiction, and should be prepared to formulate a plan for either doing nothing, observing, or confronting the suspected offender, his family, or his boss.

Pediatric PBLD

A 7yo child with no prior medical or surgical history experiences trismus during inhalation induction with sevoflurane in nitrous oxide and oxygen. A new resident, confusing this for laryngospasm, administers succinylcholine through the newly placed IV which does indeed break the trismus. Following successful intubation and initiation of surgery, the child is noted to be tachycardic and hypertensive, and end-tidal carbon dioxide level slowly starts to rise.

Participants should be prepared to discuss the implications of trismus during induction, diagnosis and treatment of malignant hyperthermia, and the expected perioperative course of this child, including ICU management. A discussion of succinylcholine use in children should be discussed, and this might also be a reasonable time to discuss the future of nitrous oxide (that is, will we be using it in 5 years?)

Vascular PBLD

A 65yo male is scheduled for endovascular AAA repair. His history, as expected, is significant for hypertension, diabetes, and CAD, with preoperative testing revealing an EF of 35%, with no evidence of inducible ischemia or wall motion abnormality. He weighs 250 pounds and has chronic back pain due to degenerative lumbar disk disease.

Participants should be prepared to discuss the anesthetic management of endovascular AAA repair, and specifically differentiate that management from that of a patient undergoing open repair. Anticipated hemodynamic derangements for both open and endovascular repair should be discussed, with an emphasis on appropriate prophylaxis and management. Type of anesthesia (sedation/regional/general) should be covered at length for

endovascular cases, and levels of monitoring and vascular access should be discussed.

**Acute Pain
Management
PBLD**

A 25yo man is scheduled for revision of his left AKA stump. He lost his leg in an MVA as a teenager, and his past history is significant only for chronic pain requiring large daily doses of Oxycontin. He skipped his morning dose on the day of surgery, and states that his pain level is 10 out of 10 in the preoperative holding unit.

Participants should be prepared to discuss the perioperative acute pain challenges in a patient with chronic pain issues. Choice of regional versus general technique can be discussed, as can the advantages of leaving an indwelling femoral (or epidural) catheter (including the idea of discharge home with a pain catheter). Assuming the regional technique/catheter fails, discussion should focus on the benefits of the various opiate (and non-opiate) medications available, including the risks and benefits (if any) of ketamine, pregabalin/gabapentin, and the alpha-2 agonists.

**Chronic Pain
Management
PBLD**

An 18yo girl is referred to your pain clinic after her pain physician retired. She suffered a traumatic right leg amputation and left leg crush injury with burn five years ago, and is being treated for phantom limb pain and CRPS with high doses of daily morphine and Oxycontin. She reports that her pain is poorly controlled, she has problems sleeping, and suffers from constipation and depression.

Participants should be prepared to discuss the diagnosis and management of phantom limb pain and CRPS, with a focus on non-opiate treatment options. Specifically the use of antidepressants, anticonvulsants, and other medications should be discussed as well as non-pharmaceutical approaches, such as physical therapy and acupuncture. This would also be a good opportunity for discussing methods of weaning patients from high doses of opiates in favor of other complimentary medications.

Bariatrics PBLD

A 500 pound patient is scheduled for open gastric bypass tomorrow, and your anesthesia technicians ask how they should prepare the room for you. The patient has a history of diabetes, sleep apnea, and hypertension. He has a short thick neck, but his mouth opening is good, and you rate his airway as Mallampati class 2.

Participants should be ready to discuss the perioperative management of the very obese, to include airway management (both mask ventilation and intubation), premedication, induction/maintenance choices and dosing, mechanical ventilation challenges, monitoring challenges, vascular access challenges, and positioning difficulties. Furthermore, emergence and recovery should be covered in depth, with a focus on pain management and the implications of sleep apnea.

Geriatrics PBLD

An 85yo woman is scheduled for right hemicolectomy. Her past history is significant for CAD s/p stent placement 8 months ago, hypertension, and Parkinson's disease. She stopped her Plavix a week ago, is well beta blocked,

and took her bowel prep without difficulty.

Participants should be prepared to discuss anesthetic management of an elderly patient in whom standard signs of anesthetic depth are blunted (due to beta blockade and hypovolemia) and in whom anesthetic requirements are unclear (what is the MAC of sevoflurane for an octogenarian, after all?). A discussion of consciousness monitoring would fit in perfectly here. Discussion should also include perioperative risks in the patient having recently undergone stent placement, the difference between bare metal and drug eluting stents, and timing of regional anesthesia and cessation of Plavix therapy. Finally, anesthetic implications of Parkinson's disease should be discussed.

ASC PBLD

A 25yo male is scheduled for outpatient knee arthroscopy in your freestanding ambulatory center. The patient has a history of sleep apnea requiring home CPAP, diabetes that is fairly well controlled (glucose 145 on the morning of surgery), and obesity, with a BMI of 32.

Participants should be prepared to discuss appropriate patient selection for both office based and ambulatory practice, with a focus on comorbidities and patient extremes (specifically age and weight). ASA physical status classification should be explored, with a discussion of what (if any) impact smoking, age, obesity, pregnancy, and cancer have on the well-defined levels. Office-based safety can also be discussed, with a focus on facility accreditation, staffing, and error reporting/QA.

Critical Care PBLD

An 18yo male is brought to the intensive care unit following an MVA wherein he suffered a closed femur fracture, crush injury to the chest, head trauma, and 3rd degree burns over 25% of his body. Chest Xray reveals diffuse infiltrates bilaterally, and pO₂ is 70mmHg on 100% oxygen.

Participants should be prepared to discuss ventilator management of patients with ARDS including diagnosis, treatment, and optimization given coexisting illness or injury. Impact on ventilator management of head injury with elevated ICP should be discussed, as should optimal fluid management for this patient.

CA3 Didactics

Didactic Sessions	Rationale
Difficult airway PBLD	<p><i>You are called to intubate a drunk and belligerent patient in the emergency room. He is the victim of an MVA with significant facial trauma, has a moderate amount of blood in his airway, and an uncleared cervical spine. He weighs 200 pounds and his medical history is unknown. His answer to all of your queries is a loud "shove it quack!"</i></p> <p>Participants should be prepared to discuss the techniques for management of the difficult airway in a patient with an uncleared cervical spine and/or airway bleeding. Means of "clearing" a cervical</p>

spine should be discussed as should indications and techniques for performance of "in-line stabilization". Furthermore, airway management in the uncooperative patient with and without an IV should be discussed, as should plans for postoperative extubation depending on sobriety or drug-screen status.

MH and myasthenia gravis PBLDs *A 40yo male with myasthenia gravis presents for sternotomy for removal of a large thymoma. He is fairly well controlled with medical management, and seems symptom free on the morning of surgery.*

Participants should be prepared to discuss the anesthetic implications of myasthenia gravis, as well as the challenges of managing a patient with an anterior mediastinal mass. The complete perioperative care of patients with myasthenia gravis should be discussed, with a focus on potential challenges to pharmacologic management with muscle relaxants, regional anesthesia, and reversal agents.

By way of review (MH is rarely covered in enough depth): *A 7yo child with no prior medical or surgical history experiences trismus during inhalation induction with sevoflurane in nitrous oxide and oxygen. A new resident, confusing this for laryngospasm, administers succinylcholine through the newly placed IV which does indeed break the trismus. Following successful intubation and initiation of surgery, the child is noted to be tachycardic and hypertensive, and end-tidal carbon dioxide level slowly starts to rise.*

Participants should be prepared to discuss the implications of trismus during induction, diagnosis and treatment of malignant hyperthermia, and the expected perioperative course of this child, including ICU management. A discussion of succinylcholine use in children should be discussed.

Pheochromocytoma and pseudochoolinesterase PBLDs *An otherwise healthy 28yo patient presents for resection of a right adrenal pheochromocytoma. The patient is alpha and beta blocked, and presents to the preoperative area with a BP of 190/100 and a HR of 70.*

Participants should be prepared to discuss the anesthetic management of pheochromocytoma including preoperative optimization and intraoperative management. Intraoperative complications should be discussed, as should management of the undiagnosed patient who manifests symptoms of a pheochromocytoma during exploratory laparotomy.

A 17yo girl undergoes an uneventful tonsillectomy and is found to be paralyzed at the end of the 20min procedure. She received succinylcholine for induction and mivacurium for maintenance of immobility (twitches were not checked between the administration of

the two paralytics).

Participants should be prepared to discuss the acute management of a patient with pseudocholinesterase deficiency as well as the appropriate management of a patient with a known history of this disorder. Dibucaine number should be discussed as should the appropriate methods of reversing paralysis (if any).

**Critical aortic stenosis
PBLD**

A 75yo male with critical aortic stenosis presents for repair of a fractured hip. He is a demented nursing home patient, and his family has previously refused all cardiac surgery. Although demented and with an active DNR order, the family wishes for the hip surgery to take place due to the severe pain that the patient is experiencing. Due to the patient's dementia, the family requests regional anesthesia to avoid the risks of prolonged postoperative intubation.

Participants should be prepared to discuss the anesthetic implications of critical aortic stenosis, and its effect on choice of general vs. regional anesthesia for this particular patient. The anesthetic implications of the demented patient will be discussed, as will the implications of DNR orders in the perioperative period.

**Severe pre-eclampsia
PBLD**

A 40yo parturient presents to the labor ward with signs and symptoms of severe pre-eclampsia. The obstetricians wish to perform an urgent cesarean section, and ask that you have the patient ready in 15min. The patient is obese at 150kg, has a history of pre-existing diabetes and hypertension, and has a mean streak a mile wide.

Participants should be prepared to discuss the implications of both pre-eclampsia and severe pre-eclampsia, with an emphasis on anesthetic choice (regional or general), pre and/or post-induction monitoring (A-line, CVP, PA catheter), and airway management. Management in the postoperative period should also be discussed, as should the unique challenges inherent in the management of the uncooperative patient.

**Gastroschisis and
omphalocele PBLD**

A newborn is scheduled to be brought to the operating room for staged repair of a large abdominal wall defect which was diagnosed by ultrasound while still in utero.

Participants should be prepared to discuss the anesthetic planning for gastroschisis/omphalocele repair, and should be familiar with the pharmacological and physiological challenges inherent in surgery for newborns. Coexisting disease states should be discussed, and ventilator management should be stressed, with a focus on ventilating modes and weaning parameters in this patient population.

**Office-based anesthesia
PBLD**

A 20yo woman is scheduled to undergo bilateral breast augmentation at a brand new surgeon's office. You are the sole anesthesiologist

providing care at this office, and this will represent the first procedure ever performed there. The patient is otherwise healthy.

Participants should be prepared to discuss the unique challenges faced by anesthesiologists in the office-based setting. Patient safety should be stressed, and a thorough discussion of equipment and medications that should be readily available should take place. Discussions should also include the need (or lack thereof) for office accreditation, surgeon and/or anesthesiologist board certification, and surgeon hospital admitting privileges.

Liver transplant PBLD

A 45yo patient with a history of hepatitis C with resultant liver failure has just been added onto the surgical schedule for transplantation. He is in the intensive care unit and his care has been complicated by hepatorenal syndrome, hypoglycemia, thrombocytopenia, and mild encephalopathy.

Participants should be prepared to discuss the multiple anesthetic challenges present in the patient for liver transplantation. Coagulopathy, encephalopathy, nutritional status, renal failure, pulmonary failure, and cardiac failure should all be discussed, especially in relation to the preoperative evaluation and planning for these patients. Induction and monitoring should be covered, as should anesthetic management during the pre-anhepatic, anhepatic, and reperfusion stages of the procedure. Critical care management in the perioperative period can also be discussed, as can causes of urgent/emergent reoperation.

Burns PBLD

A 5yo child is admitted to your hospital with 75% TBSA burns including burns to his face. You are initially asked to intubate the child in the emergency room, and over the ensuing weeks you are asked to provide anesthesia for burn excision and grafting, and sedation for daily dressing changes.

Participants should be prepared to discuss the perioperative challenges of anesthetizing the pediatric burn patient. Airway management in the acute setting (with and without intravenous access) should be discussed, as should challenges in procedural sedation. Intraoperative management should be discussed with a focus on monitoring challenges and fluid/blood/electrolyte replacement.

Ablations, cryotherapy and maze procedures PBLDs

An 85yo patient with recurrent SVT is scheduled to undergo ablation and AICD placement in the cardiac electrophysiology lab. She has a past history of HTN, IDDM, and ankylosing spondylitis which severely limits her neck movement. The procedure is scheduled to last 2-4 hours.

Participants should be prepared to discuss the anesthetic challenges of providing care to patients undergoing ablative cardiac procedures

(including both minimally invasive and open heart procedures). Anesthetic choice in elderly frail patients having minimally invasive procedures should be discussed as should monitoring choices for procedures in the electrophysiology lab. Furthermore, ACLS and dysrhythmia resuscitation should be covered in depth.

Jobs and contracts seminars

Most programs offer some sort of "transition to practice" conference, and we think that this is an excellent and much-needed opportunity for senior residents to learn what they've never learned about the business aspect of their upcoming careers. This may be tied into the 3 hour weekly schedule (in 1-2 installments), or will be a mandatory off-site evening or weekend program. Lecturers will include:

- Recently graduated private practice physicians that are not yet partners in their practice
- Private practice physicians that ARE partners in their practice
- Academic practice physicians that are productive academicians

Covered topics will include:

- Contracts
- Private vs. academic practice
- Partnership tracks...what to look for in a group
- Billing...what exactly is a "unit"
- Billing...what exactly is "RBRVS" and what are billing codes
- Billing...the difference between private insurance, Medicare, and Medicaid
- Malpractice...what to do when someone is negligent: from day 1 to the courtroom

Board preparation seminars

There is a huge disparity in board preparation between programs, with some offering mandatory weekly sessions, and others offering nothing whatsoever. We feel that board preparation is an important part of the senior curriculum, but it should be viewed as an intense refresher course, rather than a primary educational offering...that is, nothing new should be taught here, but test taking techniques and a focus on keywords and key topics should be highlighted. Furthermore, we feel that the senior residents themselves should be intimately involved in these seminars, and for the most part should lead the discussions for written board review.

Regional/Ultrasound Workshop

Although frequently covered during pain and regional rotations, the exposure to regional techniques and ultrasound technology can be "hit-or-miss", and we therefore provide an annual workshop including:

1. Didactic session: It's not all black and white!
 - a. Discuss the science of ultrasonography
 - b. Give examples (slides/video) of vessels/nerves, and

- ways of optimizing technique
- c. Brief description of ultrasound machines, pointing out frequently used buttons/dials/gizmos
- d. Discussion of appropriate needles and drugs
- e. Discussion of continuous infusion techniques
- 2. Hands on session
 - a. Introduction to the machine
 - b. Introduction to the probe
 - c. Hands-on identification of nerves and vessels using volunteers as subjects

Difficult Airway Workshop A well planned and organized airway workshop allows hands-on and didactic training in a variety of devices that otherwise might only be used during emergency situations. Our workshop will include:

- 1. Didactic series
 - a. The ASA difficult airway algorithm
 - b. Extubating the difficult
 - c. The pediatric difficult airway
 - d. The trauma airway
- 2. Hands-on workshop
 - a. Station 1: LMA (and related supraglottic devices)
 - b. Station 2: Fiberoptic intubation
 - c. Station 3: Lung isolation techniques
 - d. Station 4: Cricothyrotomy
 - e. Station 5: Other airway toys (Bullard, Wu, Light wand, Stylets, etc)
 - f. Station 6: The simulator disaster!