

## Chapter 1 : Effects of Anesthesia on Brain & Body - When Seconds Count

*Michael Schmidt, MD, professor of anesthesiology at Dalhousie University in Germany, has developed a device that could prevent post-operative cognitive decline. The device is designed for the removal of carbon dioxide in the anesthesia circuit, which could make anesthesia safer and prevent patient memory loss and other forms of cognitive dysfunction, according to the report.*

Biological hazards Ever lurking dangers of infectious diseases In day to day practice anesthesiologists are exposed to numerous pathogens that include bacteria, viruses, etc. The incidence of such hazards varies from hospital to hospital and from country to country and results in clinically asymptomatic carrier state to overt fatal infection. Besides the current epidemics such as swine flu and dengue as well as the prevalence of airborne pathogens like tuberculosis is equally threatening. Airborne infections are commonly contracted at congestive places either by direct droplet infection or may be inhaling infected droplet nuclei while blood borne infections are contracted during securing of intravenous lines, central venous catheters, and exposures to number of body fluids from the patient. The blood borne infections are most commonly contracted during invasive procedures such as securing of intravenous lines, central venous catheters, and exposures to number of body fluids from the patient. The needle stick injury, injury during suturing of central venous catheter, injury during local infiltration and regional anesthesia, accidental falls of sharp objects on the legs and feet, exposure to infected CSF, oro-pharyngeal secretions, infected wounds, administration of anesthesia in infected burns and wounds are all possible mechanisms by which an anesthesiologist can contract these infections. The operation theatre functioning should be strictly based on the institutional policies framed by the infection control committee. The sterilization of all operation theatre equipment and anesthetic apparatus should be carried out on a regular basis as per the recommendations of the universal protocols and guidelines. There should be strict measures to dispose of the onetime usable equipment as it can be a potential source of infection from patient to patient and to anesthesiologist and this include the bacterial filter also. The anesthetic association of Great Britain and Ireland AAGBI recommends the changing of anesthetic circuits on a daily basis in line with universal protocols. The anesthetic procedures, particularly the invasive procedures should ensure complete sterilization and adoption of barrier precautions especially during performance of such procedures in high risk patients. Tuberculosis The incidence and prevalence is much higher in developing nations like India as compared to the west and as such anesthesiologists in these countries are invariably exposed to surgical patients suffering from a clinically carrier state to severe symptomatic TB. Swine flu Many patients of swine flu got admitted in emergency surgical wards and the intensive care units at the peak of the epidemic period. Besides a high probability of contracting infection from the potential source patient, anesthesiologist had to manage the compromised pulmonary function, hyper-reactive airway; systemic hypotension and multi-organ dysfunction in these patients. The role of protective clothing and specially designed face masks N95 is of immense significance in providing adequate protection. Closed loop circuits should be used to avoid contamination and infection of other operation theater personals. In case of exposure, a 5-day course of oseltamivir is sufficient besides vaccination for swine flu virus. Acquired Immunodeficiency syndrome virus The prevalence of HIV in surgical patients and consequent risks to anesthesiologists have continuously increased though it still remains much lower than other viral infections. The exact incidence is difficult to ascertain for abraded and intact skin but studies have observed an incidence of 0. The recommended postexposure prophylaxis insists on immediate washing of the exposed site with plain water and soap. Antiviral drugs should be administered within an hour and include tenofovir, emtricitabine, zidovudine, lamivudine, and lopinavir and zalcitabine. Infectious hepatitis The incidence of hepatitis B carrier state is estimated at 1 in persons in general population that is a potential risk factor as majority of these patients will be asymptomatic. In nonimmunized healthcare workers and also in whom no antibodies can be demonstrated should be treated with hepatitis B-immunoglobulin along with three injections of hepatitis B vaccine. However, in case of hepatitis C infection, no vaccine available till date and nor the postexposure prophylaxis is of much significance. These can range from simple collisions with equipment and objects in a confined and

congested space of operation theater, slips and falls in the operation theater, falls on the pointed objects and broken pieces of glass, falls due to entanglement with various cables of the monitoring gadgets, etc. The sustained injury mechanisms can vary in the form of crushing, cutting, fracture, abrasions, shearing, and puncture. Preventive measures and precautions The simple measures to reduce injury from such hazards include covering of all wires and cables of monitoring gadgets and workstation in one sheet that should come from one side only, measures to keep the OT area less congested as far as possible, cutting of drug ampoules with cutting knife and use of snap off ampoules, use of dustbins and cleaning of blood or fluid from floor as quickly as possible. Physical hazards These hazards can be from various sources such as noise pollution of various alarms and monitoring gadgets, sounds of cautery and harmonic, vibrations of various equipment and suction apparatus, bright lights, electrical hazards from various electrical and electronic appliances and temperature changes in the operation theater. Radiation and nuclear hazards Both the ionizing and nonionizing radiation has been implicated as the potential hazard to the anesthesiologists at their workplace. Preventive measures and precautions The use of protective lead jackets and thyroid covering collars should be compulsory for all the personals; badges and radiation dose measuring meter should be analyzed on monthly basis to calculate cumulative exposure to radiation; keeping a distance from the patient as the patient is potential source of scatter radiation. These hazards can simply be avoided by the use of special glasses meant to protect from the lasers as well as notifying on the door of the operation theatre by a danger sign during the ongoing procedure so as to limit the unnecessary entry of individuals and accidental laser injuries to them. Radiology suite Pediatric, non-cooperative and patients on mechanical ventilation require the services of anesthesiologists during radiologic diagnostic interventions either in the form of procedural sedation or general anesthesia. Preventive measures and precautions Anesthesiologist with these implanted devices should refrain from entering such areas and should be vigilant when they take such patients for the requisite interventions. The vibrations and the acoustic noise can be equally harmful resulting in severe vertigo, nausea, and vomiting and should be prevented with the use of special ear plugs. The modern technology has provided various monitoring gadgets to help the anesthesiologist during the surgical procedure, but at the same time exposes him to various potential hazards of such electrical equipment. Though, there are no established reports but it is generally postulated that exposure to the electromagnetic fields of such monitoring gadgets can result in the possible carcinomatous changes in the brain, breast, and hematopoietic system. These concerns definitely require large meta-analytical studies in future. Orthopedic and soft tissue injuries Abrasions, lacerations, and cut injuries from glass are common during the snapping of drug ampoules. One of the most common neglected aspect during administration of general and neuraxial anesthesia is the positioning of anesthesiologist. Though the exact incidence is not known but such wrong positioning during airway securing and administration of neuraxial anesthesia is harmful for the back muscles and can potentially lead to disc problems in certain high risk individuals. The introduction of laryngeal mask airway LMA has virtually eliminated the risk of first metacarpo-phalyngeal joint injury due to prolonged holding of the face mask during short duration anesthesia for day care procedures. Preventive measures and precautions As far as possible, use of definite methods of airway securing with LMA in cases anesthesia is required for short duration. Positioning should be comfortable while administering general anesthesia, neuraxial blockade, or during laryngoscopy and intubation. Chemical hazards Noxious pollutants from diathermy and laser use The wearing of ordinary surgical face masks are not protective enough and exposes anesthesiologists to inhalation of toxic fumes, vapors, and gasses during the use of diathermy and laser. The size of pores in the surgical face mask cannot prevent inhalation of particles lesser than 0. Though no human studies have been published till date but data from various animal studies have established that inhalation of such fumes can be carcinogenic and damaging to eyes and skin and can potentially cause renal, hepatic and central nervous system toxicity. Anesthetic gasses Nitrous oxide and various halogenated anesthetics such as halothane, isoflurane, and enflurane have been implicated in various harmful biological effects after absorption through alveolar-capillary membrane. The exposure of anesthetist to inhalational anesthetics is higher as compared to other operation theater personals and may even cross the limits of environmental tolerance. Though, issues have been raised from time to time about the teratogenic effects of anesthetic gasses and the resultant

congenital abnormalities in the newborn as well as a higher rate of spontaneous abortion among female anesthesiologists but nothing conclusive has been established as yet. Preventive measures and precautions Various health agencies have provided a regulation for technical limit of N<sub>2</sub>O in operation theatre to a limit equal to 50 ppm but till date there are no limits set for halogenated anesthetics. Control of substances hazardous to health COSHH has established regulations about the permissible levels of these anesthetics in Fire and explosion hazards Fires and explosions in operation theatres can cause severe form of burn injury and inhalational trauma to the pulmonary tissue. The oxygen enriched atmosphere of operation theatre along with presence of inflammable substances and ignition sources such as diathermy and lasers are potential factors that can cause fire or explosion in the operation theatre. Good house keeping, maintenance, and discipline help prevent such mishaps. Allergic risks Latex allergy is one of the common allergies observed in the surgical suite often with the use of latex containing surgical gloves. It can occur as contact dermatitis or delayed type IV reaction or can result in serious anaphylactic shock. One can elicit past history of allergy to certain compounds especially to certain food items. The repeated exposure to allergens can make one prone to develop some serious form of allergy. Preventive measures and precautions Special gloves are available that have minimal latex content. Washing of the hand immediately after the use of gloves can prevent though cannot eliminate the incidence of allergy Personal hazards Drug abuse and addiction Substance abuse and dependence has acquired an important dimension in the present day anesthesiology practice. Multiple risk factors, individual susceptibility, long monotonous working hours, fatigable work shifts, personal problems in the family and marital discord, easy availability of the sedative and potent psychoactive drugs predispose the anesthesiologist to substance abuse that can prove harmful not only to himself but can be devastating for the patient as well. Data from various developed nations like US and UK indicate that general incidence of alcohol or drug abuse is estimated at 1 in 15 doctors. The drug dependent anesthesiologist can be harmful not only to himself but his habits can prove equally fatal to the patient as well. There are however no provision in our system which freely allows an a anesthesiologist to confess his drug addiction and substance abuse habit to a responsible and concerned authority so that an appropriate and timely action can be instituted to prevent undesirable consequences. Rather more helpful will be establishing universal protocols and guidelines that allow easy confession, rehabilitation and safe practice of anesthesiology. Preventive measures and precautions Rehabilitation and resumption of professional duties require a lot of co-operation from the colleagues. The factors leading to the present situation should be identified and an effort should be made with the help of psychologist to eliminate whatever are the possible causative factors. Inexperienced trainee anesthesiologists are even more exposed to stress at work and run a greater risk of burnout. They sometimes experience very demanding situations and may feel lonely and inadequate at work. Such a situation can make anesthesia unattractive and may explain why some young doctors have been reluctant to choose it as a career.

## Chapter 2 : 5 Issues in the CRNA Supervision Debate: Anesthesiologists Weigh in

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This problem is not uncommon in the field of anesthesiology. Most anesthesiologists continue to be unaware of the circumstances under which this occurs. None of the material which follows is taught in Anesthesiology training programs but needs to be. Burton Report presents two basic areas of concern which have become evident, not through, continuing education, but through medical malpractice suits. Severe sudden neurologic impairment following standard epidural anesthesia. Progressive patient impairment following attempted blind needle technique injection of epidural steroid. First Case Scenario It is typically not appreciated that a minor event can tip a precarious balance when underlying and unrecognized serious pathology exists with no associated clinical signs or symptoms. When insult to the nervous system occurs slowly over a long period of time the ability of this system to continually accommodate to this problem is legend. If the insult continues or if the fine existing balance is upset clinical problems then become evident. A classic example of this is the individual with a large benign intracranial or spinal tumor which has been continually increasing in size over many decades. Because the change has been gradual the brain and spinal cord has progressively decreased in volume but the person has remained without any symptoms until this balance is compromised. The event can be minor such as being struck in the head by a basketball during a game, etc. In a situation such as this there is little doubt as to the cause of death. In the Burton Experience many cases of asymptomatic lumbo-sacral adhesive arachnoiditis are converted into being clinically disabled by an aggravating factor such as trauma i. The following case is typical: Following delivery urinary incontinence and perineal numbness were noted. The patient developed permanent sacral problems with some peripheral weakness. Post-delivery MRI studies showed lower thoracic pathology consisting of cystic cavitation of the conus medullaris and extensive thick scar tissue surrounding the spinal cord in the subarachnoid space. The cystic cavitation of the conus medullaris is shown with the red dot and the spinal cord surrounded with scar tissue is shown with the green dot. Typically, the etiology of the FAS is a congenital arterio-venous malformation. In the case noted above angiography of the spinal cord, which was not performed, would have clarified the diagnosis. Biopsy only of the surrounding dense adhesive arachnoiditis was performed. Despite the fact that the anesthesiologist was blameless the case was settled out of court. Other, similar cases of FAS have also involved medical-legal claims against blameless anesthesiologists performing epidural or combined spinal-epidural anesthesia using atraumatic needles. Paraplegia, paraparesis and sacral syndromes bowel and bladder dysfunction, etc. Rarely is the existence of underlying, long-standing neuropathology suspected and the appropriate diagnostic studies other than MRI imaging are typically not carried out. This is not to say that direct intra-spinal injections do not occur. These are well documented in the literature but not usually as the result of anesthetic procedures. Second Case Scenario The Burton Experience in Forensic Medicine indicates that the overwhelming majority of medical-legal cases in regard to ill-advised epidural steroid injection ESI involve anesthesiologists and this area represents an increasingly large part of all spine-related suits. Anesthesiologists actively seek activities that place them in direct patient care. Procedurist reimbursement is relatively high. Anesthesiologists are not trained in the utilization of x-ray monitoring equipment and tend not to use it. Many Anesthesiologists know little about spine care in general or the chemistry of steroid suspensions containing ethylene glycols. Ignorance of consequences is not an excuse when the medical and scientific community have clearly identified the patient risks. Burton Report is an independent and non-commercial internet journal which was first published on January 1, and is dedicated to the principle that health care and the health care process MUST reflect truth and integrity as well as the best interests of the patient. The information presented in Burton Report is intended for dissemination without alteration.

### Chapter 3 : The Anesthesiologist's Dilemma - The Burton Report

*Current Problems in Anesthesia and Critical Care Medicine* You will receive an email whenever this article is corrected, updated, or cited in the literature. You can manage this and all other alerts in My Account.

What are the types of anesthesia and their side effects? While anesthesia is very safe, it can cause side effects both during and after the procedure. Most side effects of anesthesia are minor and temporary, though there are some more serious effects to be aware of and prepare for in advance. How can you lower your risk of side effects? The most important thing you can do to prevent anesthesia side effects is make sure a physician anesthesiologist is involved in your care. A physician anesthesiologist is a medical doctor who specializes in anesthesia, pain management and critical care medicine. Before your surgery, meet with the physician anesthesiologist to discuss your medical history, health habits and lifestyle. This information will help the physician anesthesiologist know how you might react to anesthesia and take steps to lower your risk of side effects. This meeting is also a good time for you to ask questions and learn what to expect. There are four main types of anesthesia used during medical procedures and surgery, and the potential risks vary with each. The types of anesthesia include the following: General anesthesia causes you to lose consciousness. This type of anesthesia, while very safe, is the type most likely to cause side effects. Side effects of general anesthesia can include: You may feel disoriented and have problems remembering or focusing. This can worsen if you are staying in the hospital for a few days after the procedure, especially in intensive care, because you are in an unfamiliar place. Having a loved one with you helps, along with doing some other simple things: Rarely, general anesthesia can cause more serious complications, including: A condition called postoperative cognitive dysfunction can result in long-term memory and learning problems in certain patients. People who have had a stroke in the past are also more at risk. If you or your family member has ever had heat stroke or suffered from malignant hyperthermia during a previous surgery, be sure to tell the physician anesthesiologist. Monitored anesthesia care or IV sedation. Potential side effects of sedation, although there are fewer than with general anesthesia, include headache, nausea and drowsiness. These side effects usually go away quickly. More serious but rare complications include: This could cause the lung to collapse and require a chest tube to be inserted to re-inflate the lung. This is the type of anesthesia least likely to cause side effects, and any side effects that do occur are usually minor. You may be sore or experience itching where the medication was injected. You may be given a different type of anesthetic or a medication to counteract the side effects. Physician anesthesiologists work with your physician team to evaluate, monitor and supervise your care before, during and after surgery, delivering anesthesia, leading the Anesthesia Care Team and ensuring your optimal safety.

*While at workplace, anesthesiologist is exposed to a wide array of potential hazards that can be detrimental to his overall health. Numerous risks and safety concerns have been mentioned in the literature, but the magnitude of challenges in anesthesiology practice are far greater than those cited and anticipated.*

The Work Plan focuses on areas where OIG plans to focus significant resources during the fiscal year. The Work Plan creates opportunities for providers to get a glimpse of what the OIG feels is important and to integrate these areas into their ongoing compliance activities. This update will briefly summarize some of the new issues that were added this year. Providers are advised to review the entire Work Plan plus the work plans from the past several years to get a more complete picture of issues that the OIG feels are important. OIG states its intent is to analyze claims data to determine whether any savings could be achieved by bundling outpatient services that are delivered up to 14 days before a hospital inpatient admission. There is currently an incentive for a physician group to bill as a provider-based physician practice where there are ties to a hospital. The OIG will review Medicare payments made to hospitals for beneficiary discharges that should more appropriately have been coded as transfers. Hospitals that transfer beneficiaries to another facility are not entitled to the full DRG payment that is due when a patient is properly discharged. This creates an incentive for hospitals to code for a discharge when the patient is actually being transferred to another facility. Hospitals should audit their discharge and transfer practices to be certain that they are properly coding transfers where applicable. The OIG will be reviewing this practice to determine whether any savings can come from reducing DRG payments when the swing bed transfer is made to another facility. Hospital Payments for Canceled Surgical Procedures. The OIG will be reviewing payments that are made for canceled surgical procedures which are then followed by a second payment for a rescheduled procedure. Current Medicare policy does not preclude payments for claims when there is an inpatient stay followed by canceled surgical procedure. CMS will be reviewing this policy to determine whether savings can be made in this area. Payments from the Mechanical Ventilation. CMS will be reviewing Medicare payments for mechanical ventilation. Patients are required to receive 96 hours of mechanical ventilation in order to be eligible for payments under the DRG system. OIG will be reviewing the extent that Quality Improvement Organizations have worked with hospitals to conduct quality improvement projects and to provide technical assistance. Hospital Acquisition of Ambulatory Surgery Centers. OIG will be reviewing hospital acquisitions of ambulatory surgery centers to determine whether these centers are being acquired as a method to increase reimbursement. ASC services that are provided as in an outpatient department of the hospital are reimbursed at higher rates than independently owned ambulatory surgery centers. There is no limitation on the length of stay that is permitted for swing bed utilization. The OIG will be reviewing this policy to determine whether reimbursement changes are required in this area. Long Term Care Issues 1. The OIG will be reviewing Medicare payments for interrupted stays in long-term care hospitals for the year. The OIG will be determining whether state survey agencies properly followed up and verified fulfillment of corrective action plans for deficiencies and identified during nursing home recertification surveys. The OIG is concerned that state survey agencies may not always be verifying that identified deficiencies were properly corrected. The OIG will be reviewing administration of atypical antipsychotic drugs to nursing home residents. The OIG will describe characteristics associated with nursing homes that frequently administer atypical antipsychotic drugs. OIG will determine whether CMS and state agencies oversee the accuracy and completion of minimum data sets that are submitted for nursing facilities. Home Health Care 1. OIG will be reviewing Medicare eligible home health services to be certain that face-to-face encounters are taking place as required under the Patient Protection and Affordable Care Act. The OIG will be reviewing home health agencies to determine whether they are complying with state requirements that require criminal background checks to be conducted on home health applicants and employees. Federal law requires compliance with state and local laws regarding criminal background checks. Medical Equipment Suppliers 1. Accreditation of Medical Equipment Suppliers. OIG will be reviewing CMS procedures for conducting validation surveys of medical equipment suppliers. CMS is required to conduct

validation surveys regarding beneficiary safety and quality of care that may place Medicare beneficiaries at risk. Payments for Power Mobility Devices. A series of reviews will be conducted relative to power mobility devices. Continuous Positive Airway Pressure Supplies. CMS will be reviewing whether scheduling of replacement supplies is appropriate and whether changing the scheduling could avoid possible wasteful spending. There is currently no national requirement for CPAP replacement schedules. There are a number of new areas identified for examination relating to diabetes testing supplies. Providers involved in these areas should carefully review the new items that relate to diabetes management and testing. CMS has the right as it deems necessary to perform onsite inspections of providers who are enrolling in the Medicare program. CMS is authorized to expand the role of unannounced pre-enrollment visits. OIG will be examining these requirements to determine whether additional site visits are appropriate. Improper Use of Commercial Mailboxes. Medicare providers are required to establish a physical business location with a permanent visible sign and a specific street addresses. Mailboxes alone or not permitted. Recent evidence suggests that individuals attempting to defraud Medicare may be using commercial mailbox addresses for this purpose. OIG will be reviewing providers and suppliers to determine whether their listed addresses match commercial mailbox addresses. Provider Subject To Debt Collection. CMS will be determining whether payment should be rechanneled relative to providers who have been reported to the Department of Treasury for collection of overpayment refunds. Payment for Personally Performed Anesthesia Services. OIG will be reviewing anesthesia claims to determine whether they are supported in accordance with Medicare requirements. In order for a provider to be reimbursed as a personally performed anesthesia service, proper information must be included on the claim and in the medical chart to verify the claim. QK modifiers are used for medical direction of two, three, four concurrent anesthesia services. Questionable Ophthalmological Service Billings for OIG will be reviewing claims data to identify questionable billings for ophthalmologic services during They will review geographic locations and provider patterns where questionable billings are located. The types of billing that will be examined were not identified. OIG will be reviewing questionable billing for electrodiagnostic testing and will be attempting to identify Medicare utilization rates and get different rates by provider specialty, diagnosis, and geographic areas. OIG identifies electrodiagnostic testing as an area of potential inappropriate financial gain posing significant vulnerabilities to the Medicare program. Location Requirements for Rural Health Clinics. Rural health clinics are required to meet basic location requirements. CMS has not promulgated final regulations allowing removal of rural health clinics that did not meet location requirements. OIG will be reviewing this procedure. It has been identified that some payments were made to providers in spite of the use of these modifier codes. The OIG will be examining the recent trend of drug shortages to determine whether there has been an effect on pricing of pharmaceuticals. Suspicion of industry price manipulation appears to be the motivation behind this system. Summary This is a brief summary of some of the areas that were described in the recent Work Plan. For a more comprehensive discussion of these items, visit the website for the Office of Inspector General and download the complete fiscal year annual work plan. It is highly advisable for compliance officers to examine the document in its entirety to determine what impact, if any, it will have on their compliance efforts for fiscal year It is also good practice to review annual work plans for several previous years as part of the risk identification process. If there are any questions regarding these requirements or how they impact compliance programs and detailed requirements that are generally described in this document, please do not hesitate to contact John H.

### Chapter 5 : CHALLENGES FOR THE NEXT 25 YEARS OF ANESTHESIA - The anesthesia consultant

*Full text Full text is available as a scanned copy of the original print version. Get a printable copy (PDF file) of the complete article (K), or click on a page image below to browse page by page.*

September 22, In this blog article, Reliance Anesthesia Partners will bring patients and care-givers some basic details concerning general anesthesia for patients with heart problems. Once the necessity of surgery is diagnosed, the idea of general anesthesia can cause any patient some degree of concern. But, the patient who has a heart problem is likely to exhibit a higher level of anxiety. At Reliance Anesthesia Partners, we believe patients must understand that anesthesiology practitioners meticulously control advanced systems and techniques during surgery. Medical practitioners must recognize that the above statement is rather frightening for some patients to face, whether they have heart problems or not. Concerning heartbeats and blood pressure, Dr. We of Reliance Anesthesia Partners realize, as does Dr. We have written previous articles on patient engagement. The engagement between patient and anesthesiologist can provide life-saving information. Especially, when heart problems or conditions are involved, it is essential that the patients explain their history, list their medications including dosages, and speak genuinely, heart to heart, with their physician-anesthesiologist. If your surgery is actually to be on your heart, there will be considerably more questions and details to consider. That would definitely be a topic for another article. This blog relates to considerations if the surgery is needed elsewhere, other than on the heart. Keeping Everyone In the Loop: Do you see a cardiologist, and when was your last appointment? Have you informed your cardiologist about your surgery? Having Little Pains or Spells: Do you have had any new symptoms of chest pain or pressure, either during exertion or emotion? Have you awakened in the middle of the night with shortness of breath, or do you experience it with very little exertion? Getting Off Your Rhythm: Have you experienced irregular or rapid heart beats, known as palpitations? Anesthesia Affairs of the Heart You and your physician-anesthesiologist will also discuss other conditions that involve the heart directly or indirectly and can affect the management of your anesthesia. Patients should be prepared for questions such as these: Do you High blood pressure? Have you had Blockages in the arteries of the heart, or been diagnosed with coronary heart disease? Have you been told you have a heart murmur or valvular heart disease? Have you been given a coronary artery stent, pacemaker or implanted defibrillator? Were any other birth defects of the heart recorded? Have you ever had problems with heart rhythm? So, what if you are facing surgery and general anesthesia and have some of these heart problems, conditions or issues?

### Chapter 6 : Addressing Anesthesia Concerns

*Richard Novak, MD is a Stanford physician board-certified in anesthesiology and internal medicine. He is an Adjunct Clinical Professor in the Department of Anesthesiology, Perioperative and Pain Medicine at Stanford University, the Medical Director at Waverley Surgery Center in Palo Alto, California, and a member of the Associated Anesthesiologists Medical Group in Palo Alto, California.*

I posed this question to our Stanford anesthesia faculty who specialize in private practice: In your opinion, what are the most important problems for anesthesia to address in the next 25 years? There may be a few well-trained anesthesiologists who provide one-on-one anesthesia for the few patients who are willing to pay for it. I think the systems for providing anesthesia care will be unrecognizable to us in 25 years. Since this change is going to come whether or not we like it, I would like to see our excellent academic Anesthesia Departments lead the way. It is time for anesthesia leaders to take over the training of all those who provide anesthesia care so that we can maintain and improve the scientific advances that have been made in the last 25 years. I think we all agree that some practitioners are over-trained and some under-trained for what they do for most of their careers. I would like to see more sub-specialization earlier in training. I would like to see our academics come up with possible solutions to providing high quality anesthesia care in a more cost effective way. I think real team approaches, robotics and advances in information technologies should be tried to accomplish this goal. Robotic and mobile miniaturized anesthesia machines are likely coming down the pipeline too. Residents often provide manpower first and receive education as a secondary benefit. That is my guess. I am sure that more receptor-specific drugs will be in use by then. Retirement, Recruitment, and Retention of anesthesiologists. Second, I foresee models of delivering care to maximize physician extenders. Third, there will be more delivering of care outside of our traditional settings. Fourth, there will be more partnerships between physicians and care settings. I suggest that our specialty is becoming complacent and apathetic and developing a dangerous attitude of entitlement. The problem is the preservation of our professional status as physician specialists and our individual professionalism, ethics, and autonomy. These things are the soul and core of what it means to be a physician, and are being eroded by the increasing power and influence of corporate business in medicine, and the ever tightening choke hold of governmental regulation. There are a number of reasons why the practice of anesthesiology is particularly vulnerable in a way that our surgical colleagues and other physicians are more insulated. We can accelerate this process of degradation by making short-sighted choices, or become proactive, patient advocacy oriented participants in the evolution of American medicine.

## Chapter 7 : Special Problems or Issues in Anesthesiology - Oxford Medicine

*Several conditions may pose a challenge to the anesthesiologist, including physician impairment or disability, substance abuse, fatigue, aging, and visual and auditory impairment.*

By Lindsey Getz Help to ensure a safer experience with anesthesia administration and recovery for your older patients. Anesthesia today is, in general, very safe; however, there are some risks for anyone undergoing surgery and anesthesia. And the occurrence of complications tends to be higher for the aging population. The two most prominent complications are also the most feared by elders undergoing anesthesia: These patients can be confused and disoriented for several weeks after surgery, which can lead to prolonged hospitalizations and is sometimes associated with a worse overall prognosis. By contrast, POCD is a more subtle process, and family members may or may not recognize this problem exists. True POCD is identified through neuropsychological testing. Barnett says common questions raised are: In these instances, the anesthesiologist may be able to help by avoiding certain medications such as meperidine and long-acting benzodiazepines or by offering a type of anesthesia such as a nerve block that may result in a reduction in the need for systemic analgesics and sedatives. For example, discuss prior illnesses and hospitalizations, past surgery, and current treatments. For patients of all ages, the time leading up to surgery is a great time to focus on being as healthy as possible. This is a great help to the anesthesiologist. However, there are many medications, such as high blood pressure and heart pills, that are important to continue taking prior to surgery. This can result in patients arriving for surgery with very high blood pressure and poorly controlled pain. Functional status is one of the most important predictors of outcome after anesthesia. Sometimes, especially in the presence of early dementia or depression, an elder may claim to be fully functional, but caregivers know otherwise. This can be especially beneficial for patients who are taking multiple medications or have a more complicated medical history. A geriatric anesthesiologist specializes in treating older adults and has specific experience caring for patients of this age group both preoperatively and postoperatively. Another request that some older adults make is the use of a brain monitor. He advocates that any patient undergoing anesthesia be hooked up to a brain monitor, which can help avoid too much anesthesia and postoperative dementia by allowing the doctor to know exactly how much of the drug is needed. If a patient meets with their physician and finds out the hospital does not use brain monitors, then they should go somewhere else. Clinicians can be very helpful in making the recovery period easier on their patients. They can keep patients comfortable by ensuring their eyeglasses, hearing aids, and any other important devices are available to them as soon as possible following surgery. Patients or their caregivers should ask for written instructions that include when medications should be resumed, what types of activities are advisable, how much pain to expect, and how often pain medications can be taken. Older patients have a diminished sense of thirst and are at risk of developing dehydration that can lead to confusion and falls in frail elders. After surgery, caregivers can help make sure patients are eating and drinking adequately, says Barnett. However, this also means that caregivers may need to have extra help around. Professionals can help their clients prepare up front to have the help needed.

*See if you can meet with your anesthesiology team. This is a great way to go over your options and understand your anesthesia risks. Ask if your age or any other health conditions might affect.*

The conflict stems from a Medicare and Medicaid regulation change that allows states to "opt out" of a requirement that nurse anesthetists be supervised. So far, 17 states have chosen to waive the requirement. Proponents of the opt-out say that it will improve access to medical care for patients in rural and medically underserved areas. Critics argue that the opt-out could harm patients because nurses and anesthesiologists receive distinctly different medical training. Will the opt-out improve access to rural care? Maar, a common argument in the debate is that removing the CRNA supervision requirement will enable more nurses to practice in rural hospitals, thus increasing medical care in underserved areas where anesthesiologists are scarce. At least five of the rural hospitals [in Colorado] are anesthesiologists-only. Desai, the discrepancy in medical training and education received by CRNAs and Anesthesiologists accounts for differing and poorer quality of care and is often overlooked by the public and government officials. There are definitely differences in the quality of care. I think that the public, and perhaps elected officials, are misled into thinking otherwise. Anesthesia care is extraordinarily complex, and when one examines all the component portions of an anesthetic, there is no question that there needs to be medical decision making as the essential element of that anesthesia care. How will patient safety be affected by the opt-out? Maar, the most significant issue in the CRNA debate is the impact of the lack of supervision on patient safety. Anesthesiologist Direction and Patient Outcomes. Desai, the increasing complexity of anesthesia care necessitates that Anesthesiologists have to be perioperative physicians handle the complexity of anesthesia cases. Desai adds that CRNAs are typically not trained to lead in an emergency or disaster situation. Does opting out help to cut costs? Proponents of the CRNA opt-out argue that it will allow hospitals to cut costs associated with recruiting anesthesiologists and draw from a larger pool of available CRNAs, particularly as hospitals expand or add additional services in different locations. Desai, however, believes that current reimbursement standards prevent the CRNA opt-out from being cost-effective. In the opt-out, I believe we are trading poor quality of anesthesia service for the same dollar amount. Additionally, access to care is not a problem, as a physician is always present for surgery and can be the physician supervisor of the nursing staff. Can the opt-out improve staffing flexibility? The state requires the CRNA have a collaboration agreement with a physician, and the physician is not required to be an anesthesiologist. Wherry then lays out the issue of "opt out" and Medicare Part A. The opt out issue applies to reimbursement to inpatient hospitals, critical access hospitals, and ambulatory surgery centers for the care they provide to beneficiaries through Part A of Medicare, he says. There are also conditions for participation for critical access hospitals and ambulatory surgery centers. Part A of Medicare does not provide any reimbursement to the surgeon or anesthesiologist who provides supervision for the CRNA in order for the facility to be compliant with Medicare Part A conditions for participation. In states that have not opted out, the facility can comply with Medicare Part A conditions for participation by the surgeon supervising the CRNA, he says.

### Chapter 9 : Heart Problems and Anesthesia: A Heart To Heart - Reliance Anesthesia Partners

*This problem is not uncommon in the field of anesthesiology. Most anesthesiologists continue to be unaware of the circumstances under which this occurs. None of the material which follows is taught in Anesthesiology training programs (but needs to be).*

**Print Possible Complications of Anesthesia** Anesthesia is generally safe, but complications can occur. Local anesthesia carries the lowest risk, and general anesthesia the highest. An allergic reaction to an anesthetic agent can be life threatening and can occur with any type of anesthesia. Drug allergies remain unknown until the substance is ingested, so many people are unaware of them. There are generally few adverse reactions to local anesthesia. Some patients experience nausea and vomiting, but that is usually caused by the sedative. There may also be soreness at the injection site. Regional anesthesia has a higher risk of side effects and complications, including the following: Temporary weakness or paralysis of the affected area Headache following spinal and epidural anesthesia. This usually begins within 12 to 24 hours after surgery and can last a week or longer. It may be caused by a loss of spinal fluid that occurs when the anesthetic is injected. Headache is often accompanied by nausea, vomiting, dizziness, light sensitivity, and a stiff neck. Hypotension low blood pressure Inability to urinate usually temporary and relieved by catheterization Backache Much less frequently, infection, nerve damage, or permanent paralysis can occur. Because it affects the entire body, general anesthesia has the potential to cause the greatest number of side effects and complications. Most side effects clear up within 24 hours or so. The most common ones are: Sore throat caused by the devices used to keep the airway open Drowsiness or feeling tired hours after surgery Nausea and vomiting Headache, dizziness, and vision problems Damage to teeth caused by airway devices General anesthesia also carries the risk for serious complications. Serious complications include the following: Stroke Brain damage Death In August , results of a study published in Pediatrics indicated that anesthesia before the age of 3 may increase the risk for deficits in language and abstract reasoning. Certain inhaled anesthetics can trigger a disorder called malignant hyperthermia in people who carry the gene for it. If this disorder is known to run in the family, the patient must inform the anesthesiologist before surgery.