SECTION 1: ACUTE INTERVENTIONS
CHAPTER 1: SURGERY FOR CEREBRAL HEMORRHAGE
Cerebral hemorrhage sometimes requires neurosurgical evacuation. Surgery becomes an option when a patient has deteriorated. The indications for intervention are discussed, and particularly when. This chapter also reviews the available evidence from clinical surgical trials.

CHAPTER 2: REVERSAL OF ANTICOAGULATION AFTER CEREBRAL HEMORRHAGE
Anticoagulation associated cerebral hemorrhage often results in expansion and worsening of the clinical condition. Early reversal of an increased INR is key to reduce the hemorrhage volume. Traditionally it involves administration of fresh frozen plasma and vitamin K, but this chapter discusses new pharmacologic approaches.

CHAPTER 3: MEDICAL CARE OF TRAUMATIC BRAIN INJURY
New traumatic brain contusions may rapidly result in increased intracranial pressure. This chapter discusses how to recognize early increased intracranial pressure (ICP) and indications for placement of a monitoring device. The first line of ICP control is provided in this chapter. The effects and side effects of different osmotic diuretics are discussed.

CHAPTER 4: ANTIBIOTICS AND CORTICOSTEROIDS FOR BACTERIAL MENINGITIS
Outcome in acute bacterial meningitis is dependent on early initiation of antibiotic treatment. This chapter discusses the pros and cons of corticosteroids, choice of antibiotics, how to rapidly assess the severity of the illness and how to find the source.

CHAPTER 5: SORTING OUT AND TREATING ENCEPHALITIS
The diagnosis of encephalitis is easy, finding the cause is not. The differential diagnosis of the main forms of acute encephalitis is discussed here. Medical therapy and indications for brain biopsy are mentioned.

CHAPTER 6: RESPIRATORY SUPPORT IN NEUROMUSCULAR RESPIRATORY FAILURE
How to confidently assess the need for respiratory support in acute neuromuscular disease is difficult. This chapter discusses indications of triage to the intensive care unit, the benefits and risks of noninvasive mechanical ventilation and indications of
intubation in acute neuromuscular disorders such as Guillain-Barré syndrome and myasthenia gravis.

CHAPTER 7: ENDOVASCULAR RECANALIZATION IN ACUTE STROKE
Major hemispheric stroke from large intracranial vessel occlusion may not respond to intravenous thrombolysis and may require a more aggressive endovascular approach. How to make that determination using CT angiogram and CT perfusion is discussed. This chapter mentions currently used mechanical devices and what they can achieve.

CHAPTER 8: DECOMPRESSIVE CRANIECTOMY IN ACUTE STROKE
Large hemispheric strokes may swell and decompressive craniectomy is the only way to salvage the patient from certain neurologic death. Not everyone is persuaded by this last resort measure. Who benefits and how much is discussed in this chapter.

CHAPTER 9: NEUROLOGIC WORSENING IN SUBARACHNOID HEMORRHAGE
Patients with a subarachnoid hemorrhage have a proclivity to deteriorate. Common causes include rebleeding, hydrocephalus and vasospasm. Prevention of complications -neurologic and medical- is key to reduce morbidity. Diagnostic and therapeutic clues are provided in this chapter.

CHAPTER 10: OPTIONS IN ACUTE SPINAL CORD COMPRESSION
For patients there is an immediate urgency to prevent permanent paralysis. For many physicians this is one of the most uncomfortable situations. The immediate medical treatment with corticosteroids and indications for acute neurosurgical decompression are discussed.

CHAPTER 11: CHOICES IN REFRACTORY Status Epilepticus
Many seizures stop with benzodiazepines and fosphenytoin, but what are the options when seizures return? What are the readily available choices and treatment algorithms? These options are discussed in this chapter.

CHAPTER 12: DETERIORIORATION AFTER BRAIN METASTASIS
Deteriorating patients with metastasis or malignant brain tumor in close proximity to the brainstem may be due to hemorrhage or brain edema. Options for stabilization and indications for urgent debulking are discussed.

CHAPTER 13: HYPOTHERMIA AFTER CARDIOPULMONARY RESUSCITATION
Hypothermia protocols are increasingly used to treat comatose patients after CPR. The indications, management and implications
for neurologic prognostication are discussed.

CHAPTER 14: ANTIDOTES FOR THE INTOXICATED PATIENT
How to manage a comatose patient with a serious intoxication is discussed in this chapter. Options for antidotes, dialysis and other measures to correct laboratory abnormalities are concisely reviewed.

CHAPTER 15: FAILURE TO AWAKEN AFTER SURGERY
Failure to awaken fully after surgery is a common reason for consultation. One example of a patient with a postoperative stroke is presented.

CHAPTER 16: STUPOR AFTER BRAIN SURGERY
Successful brain surgery, but no awakening of the patient. Evaluation, interpretation of neuroimaging and potential causes are discussed in this chapter.

SECTION 2: CALLS, PAGES AND OTHER ALARMS

CHAPTER 17. ACUTE DELIRIUM
Perhaps one of the most difficult disease states to handle well. Acute agitation may be a time consuming issue for the nursing staff and physician. Inadequate use of medication may only lead to further complications.

CHAPTER 18: EARLY HYPOTENSION AND FEVER
The sudden appearance or fever and hypotension in any patient with an acute brain injury requires a quick evaluation and intervention. How to successfully approach this problem is illustrated in a typical case scenario.

CHAPTER 19: ACUTE PULMONARY EDEMA AFTER TRAUMA
Diffuse pulmonary infiltrates on chest X-ray and oxygen desaturation may indicate several acute conditions. How to differentiate neurogenic from cardiogenic from aspiration and how to best treat these conditions initially is discussed in this chapter.

CHAPTER 20: SYMPATHETIC HYPERACTIVITY SYNDROME
An underappreciated and undertreated condition which may cause potentially life threatening complications. The difficulties with management and short and long term pharmacologic approaches are discussed.

CHAPTER 21: ACUTE HYPERTENSION AFTER STROKE
Blood pressure goals after acute ischemic and hemorrhagic stroke are commonly established early on. The rationale for treatment but also the uncertainties of when to treat are discussed in detail.

CHAPTER 22: ACUTE CARDIAC ARRHYTMIA AFTER ACUTE BRAIN INJURY
EKG changes are common and vary from simple ST segment changes to new complex cardiac arrhythmias. In addition critically ill patients often have underlying cardiac disease and the most common problem is flaring up of atrial fibrillation. The pharmacologic choices to initially treat the increased heart rate and options for long term control are discussed in this chapter.

CHAPTER 23: AUTONOMIC FAILURE AFTER GUILLAIN - BARRÉ SYNDROME
Dysautonomia is common in severe forms of GBS, paralytic ileus is a concern in all immobilized bedridden patients with GBS. Treatment of these autonomic disorders is provided here.

CHAPTER 24: WEANING OF THE VENTILATOR IN MYASTHENIA GRAVIS
Weaning from the ventilator after intubation after treatment for myasthenic crisis is difficult with a high probability of reintubation. Strategies for successful weaning and extubation are discussed.

CHAPTER 25: ACUTE HYponatremia AFTER SAH
Hyponatremia is a very common electrolyte abnormality in the NICU and in particular after subarachnoid hemorrhage. Evaluation and treatment are discussed. How to calculate rate of infusion of fluids is highlighted in this chapter.

CHAPTER 26: DIABETES INSIPIDUS AFTER BRAIN TUMOR SURGERY
Diabetes insipidus is a difficult management problem after surgery for resection of a centrally located brain tumor. Fluid management, administration of vasopressin and monitoring of effect of treatment are discussed.

CHAPTER 27: DRUG INTERACTIONS
Drug interactions are common, but frequently not noticed. Some are very concerning and clinically relevant. An example of how antiepileptic drugs interact with warfarin is discussed.

SECTION 3: LONGTERM SUPPORT, END OF LIFE CARE AND PALLIATION
CHAPTER 28: DECISIONS IN PERSISTENT VEGETATIVE STATE
Early on -after a major brain injury-the diagnosis of a persistent vegetative state and its important long term implications remains tentative at best. Long term care of debilitated neurologic patients requires placement of a tracheostomy and percutaneous gastrostomy. Timing and indications are discussed in this chapter.

CHAPTER 29: DNR/DNI ORDERS AND WITHDRAWAL OF LIFE SUPPORT
Discussion of DNR/DNI orders and interpretation of advance
directives with family members. Who brings this up? How to go about withdrawing of support and how to provide best palliation is discussed.

CHAPTER 30: PITFALLS OF BRAINDEATH DETERMINATION
Brain death determination and confounders. This chapter lists the potential for errors and how to avoid them.

CHAPTER 31: APPROACH TO ORGAN DONATION
Physicians have the obligation to approach an organ procurement agency after brain death or after withdrawal of support. The two main procedures - donation after brain death and donation after cardiac death - are discussed in this chapter.