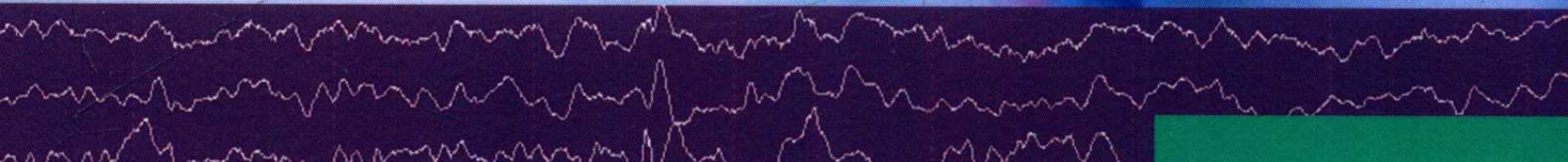
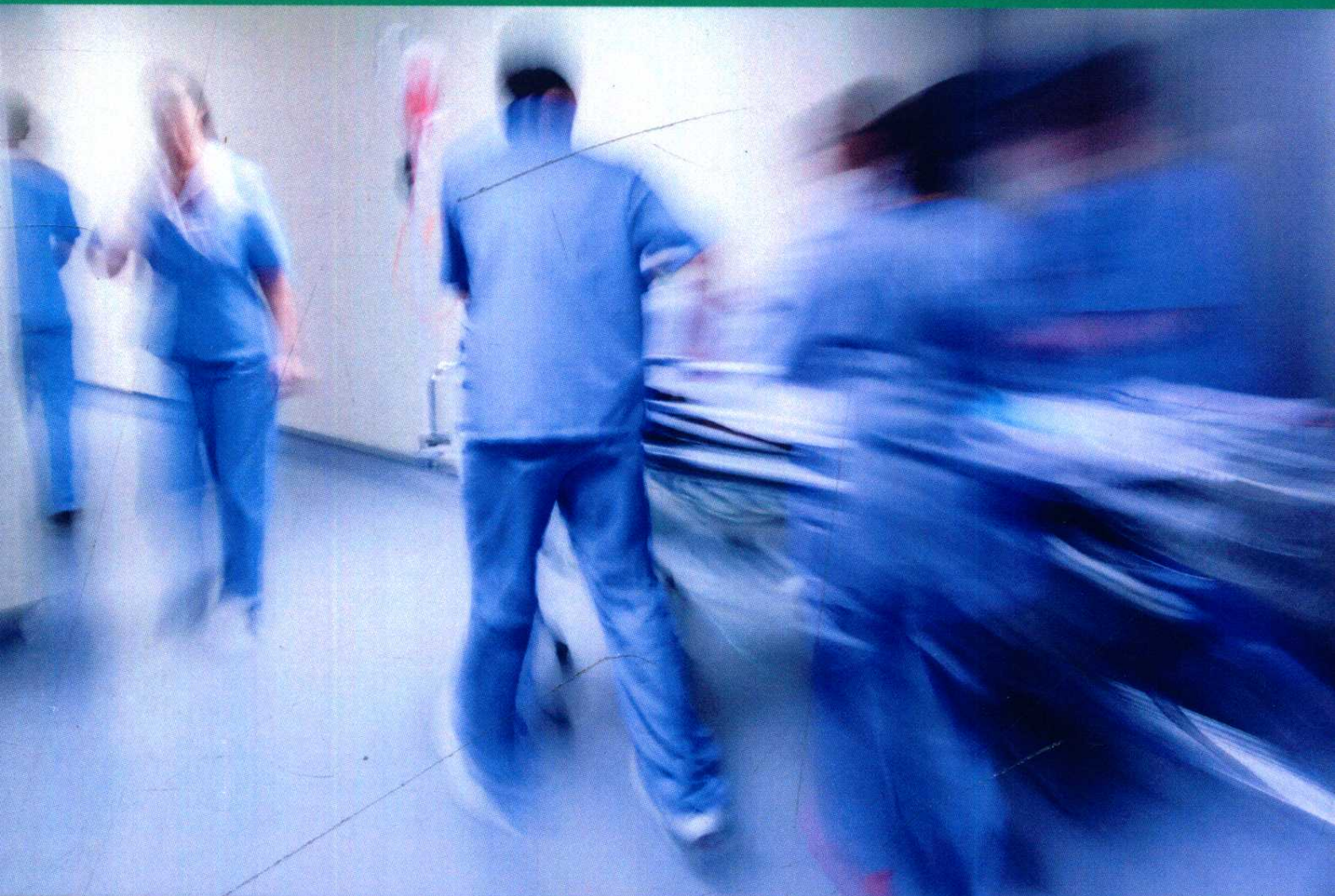


Essentials of Hospital Neurology

edited by

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ESSENTIALS OF HOSPITAL NEUROLOGY

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Essentials of Hospital Neurology

I would like to thank God for all His blessings, my friend and colleague Karl Misulis for allowing me to keep my academic flame alive, all my teachers and mentors who have taught me the art of neurology, my patients who remind me what my calling is, and my parents and family for all their love and support. I dedicate this work to my wife Carmen, son Bennett, and future daughter for the joy they bring each and every day and the sacrifices they make way too often.

—E. Lee Murray

I dedicate my part in this work to all those who have traveled with me through my long career, from family and friends to colleagues and to those who have read or listened to my works. I want to express special gratitude to the many thousands of patients who have trusted me with their health and often with their lives. It has been an honor and a privilege to serve.

—Karl E. Misulis

Preface

Hospital neurology is a growing subspecialty. Advances in diagnostics and therapeutics have added to the complexity of hospital care of neurologic disorders, and hence a need for increasing hospital presence of neurologists. Just as a single individual can no longer be expert in neuromuscular, epilepsy, and movement disorders, no longer can a single individual easily cover both a busy office practice and a busy hospital practice.

This book discusses the spectrum of neurologic diseases likely to be encountered in hospital practice. The focus is on hospital management, so details of disorders usually treated in the outpatient arena are left to other texts.

Our intent is to make this book concise yet comprehensive, emphasizing practical diagnostic and therapeutic topics. Details of historical or pathophysiological interest are not included unless important for patient care.

Our goal is to advance the quality and efficiency of neurologic care in the hospital setting. The authors would like to express their great appreciation to the contributors for their expert and exemplary work.

Karl Misulis
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January 2017

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Abbreviations

AAN	American Academy of Neurology
ABG	arterial blood gasses
ABMS	American Board of Medical Specialties
ABPMR	American Board of Physical Medicine and Rehabilitation
ABPN	American Board of Psychiatry and Neurology
ACA	Anterior cerebral artery
ACE	Angiotensin converting enzyme
AChR	Acetylcholine receptor
ACTH	Adrenocorticotrophic hormone
AD	Alzheimer disease
ADEM	Acute disseminated encephalomyelitis
AED	Anti-epileptic drug
AICA	Anterior inferior cerebellar artery
AIDP	Acute inflammatory demyelinating polyneuropathy
AION	Anterior ischemic optic neuropathy
AIS	Acute ischemic stroke
ALS	Amyotrophic lateral sclerosis
AMAN	Acute motor axonal neuropathy
AMSAN	Acute motor and sensory axonal neuropathy
APS	Antiphospholipid antibody syndrome
ARDS	Acute respiratory distress syndrome
ASRH	Acute stroke ready hospital
AVM	Arteriovenous malformation
BBB	Blood-brain barrier
BMI	Body mass index
BP	Blood pressure
BPPV	Benign paroxysmal positional vertigo
CADASIL	Cerebral Autosomal-Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy
CBC	Complete blood count
CBS	Corticobasal syndrome
CDC	Centers for disease control
CDS	Carotid duplex sonography
CEA	Carotid endarterectomy
ChEI	Cholinesterase inhibitor
CHF	Congestive heart failure

CIDP	Chronic inflammatory demyelinating polyneuropathy
CIN	Critical illness neuromyopathy
CJD	Creutzfeldt-Jakob disease
CMAP	Compound motor action potential
CMV	Cytomegalovirus
CN-x	Cranial nerve, where “x” indicates the number
CNS	Central nervous system
Coags	Coagulation studies, esp. PT, PTT
COPD	Chronic obstructive pulmonary disease
CPA	Cerebellopontine angle
CPK	Creatine phosphokinase
CPM	Central pontine myelinolysis
CADISS	Cervical Artery Dissection in Stroke Study
CPR	Cardio-pulmonary resuscitation
CRP	C-reactive protein
CRVO	Central retinal vein occlusion
CRYSTAL AF	Cryptogenic Stroke and Underlying Atrial Fibrillation trial
CSC	Comprehensive stroke center
CSF	Cerebrospinal fluid
CSH	Carotid sinus hypersensitivity
CT	Computed tomography
CTA	CT Angiography
CTE	Chronic traumatic encephalopathy
CTV	CT Venography
CVA	Cerebrovascular accident.
CVT	Cerebral venous thrombosis
DAI	Diffuse axonal injury
DDx	Differential diagnosis
DHE	Dihydroergotamine
DIP	Drug-induced parkinsonism
DKA	Diabetic ketoacidosis
DLB	Dementia with Lewy bodies
DM	Diabetes mellitus
DNR	Do not resuscitate
DTs	Delirium tremens
DVT	Deep vein thrombosis
EBV	Epstein-Barr virus
Echo	Echocardiogram
ED	Emergency department
EDH	Epidural hematoma
EDS	Excessive daytime sleepiness
EEG	Electroencephalogram
EKG	Electrocardiogram
EMG	Electromyogram
EMR	Electronic medical record
EMS	Emergency medical services
ENT	Earn, nose, and throat

Esp	Especially
ESR	Erythrocyte sedimentation rate
FA	Friedreich ataxia
FDA	Food and Drug Administration
FTD	Frontotemporal dementia
GCA	Giant cell arteritis
GI	Gastrointestinal
HD	Huntington disease
HHS	Hyperosmolar hyperglycemic state
HIE	Hypoxic ischemic encephalopathy
HIV	Human immunodeficiency virus
HSP	Hereditary spastic paraparesis
HSV	Herpes simplex virus
ICH	Intracerebral hemorrhage
ICP	Intracranial pressure
ICU	Intensive care unit
ILR	Implantable loop recorder
IM	Intramuscular
INR	International normalized ratio
IOH	Idiopathic orthostatic hypotension
IOIS	Idiopathic Orbital Inflammatory Syndrome.
ION	Ischemic optic neuropathy
IOP	Intraocular pressure
IS	Information systems
IV	Intravenous
IVIg	Intravenous immunoglobulin
LDL	Low-density lipoprotein
LEMS	Lambert Eaton Myasthenic Syndrome
LFT	Liver function tests
LP	Lumbar puncture
MAOI	Monoamine oxidase inhibitor
MAP	Mean arterial pressure
MCA	Middle cerebral artery
MCT	Mobile cardiac telemetry
MD	Muscular dystrophies
Med	Medication
MELAS	Mitochondrial Encephalopathy and Lactic Acid Stroke-like episodes
MG	Myasthenia gravis
MI	Myocardial infarction
MMA	Methylmalonic acid
MMN	Multifocal motor neuropathy
MRA	Magnetic resonance angiography
MRI	Magnetic resonance imaging
MRV	Magnetic resonance venography
MS	Multiple sclerosis
MSA	Multiple system atrophy
NASCET	North American Symptomatic Carotid Endarterectomy Trial

NBTE	Nonbacterial thrombotic endocarditis
NCS	Nerve Conduction Study
NCSE	Nonconvulsive status epilepticus
NCV	Nerve conduction velocity
NF	Neurofibromatosis
NIF	Net inspiratory force
NIH	National Institutes of Health
NIHSS	NIH Stroke Scale
NMDA	N-methyl-D-aspartate
NMJ	Neuromuscular junction
NMO	Neuromyelitis Optica
NMS	Neuroleptic malignant syndrome
NPH	Normal pressure hydrocephalus
NSAID	Non-steroidal anti-inflammatory drug
ON	Optic neuritis
OP	Opening pressure
OSA	Obstructive sleep apnea
PAN	Polyarteritis nodosa
PCA	Posterior cerebral artery
PCD	Paraneoplastic cerebellar degeneration
PCP	Primary care provider
PD	Parkinson disease
PDD	Parkinson disease with dementia
PET	Positron emission tomography
PFO	Patent foramen ovale
PICA	Posterior inferior cerebellar artery
PLED	Periodic lateralized epileptiform discharge
PLMD	Periodic limb movement disorder
PMC	PubMed central
PML	Progressive multifocal leukoencephalopathy
PNES	Psychogenic non-epileptic seizure
PO	Per os (i.e., Oral)
PPA	Primary progressive aphasia
PPM	Permanent pacemaker
PRES	Posterior Reversible Encephalopathy Syndrome
PSC	Primary stroke center
PSG	Polysomnography
PSP	Progressive supranuclear palsy
PVS	Persistent vegetative state
QOL	Quality of life
RA	Rheumatoid arthritis
RCVS	Reversible Cerebral Vasoconstriction Syndrome
RLS	Restless legs syndrome
RNS	Repetitive nerve stimulation
SAH	Subarachnoid hemorrhage
SBE	Subacute bacterial endocarditis
SDH	Subdural hematoma

SIADH	Syndrome of inappropriate anti-diuretic hormone
SIRS	Systemic inflammatory response syndrome
SLE	Systemic lupus erythematosus
SNAP	Sensory nerve action potential
SNRI	Serotonin norepinephrine reuptake inhibitor
SPEP	Serum protein electrophoresis
SSRI	Selective serotonin reuptake inhibitor
SUNCT	Short-lasting unilateral neuralgiform headache with conjunctival injection and tearing
TBI	Traumatic brain injury
TCA	Tricyclic antidepressant
TD	Tardive dyskinesia
TED	Thyroid eye disease
TEE	Transesophageal echocardiogram
TGA	Transient global amnesia
TH	Therapeutic hypothermia
TIA	Transient ischemic attack
TJC	The Joint Commission
TLOC	Transient loss of consciousness
TOAST	Trial of Org 10172 in Acute Stroke Treatment
tPA	Tissue plasminogen activator
TSH	Thyroid stimulating hormone
TTE	Transthoracic echocardiogram
TTM	Targeted temperature management
UCNS	United Council for Neurologic Subspecialties
US	United States
UTI	Urinary tract infection
VaD	Vascular dementia
VGCC	Voltage gated calcium channel
VOR	Vestibulo-ocular reflex
VZV	Varicella zoster virus
WBC	White blood count
WNV	West Nile virus

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