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A REVIEW ON NEUROMEDICINE

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ABSTRACT

Phytocannabionids (andsynthetic analogs thereof) are gaining significant attention as promising leads in modern medicine. The frequency, complexity and morbidity of neurodegenerative disease make them a great challenge for now a day's medicine. The treatments currently used for Parkinson's disease the second most prevalent are only symptomatic. Mitochondrial oxidative damage and dysfunction contribute to a wide range of human disease. Proteasome malfunction parallels abnormal amyloid accumulation in Alzheimer's disease (AD). The development of proteasome activators for AD treatment. They large protein involved in the pathogenesis of Parkinson's disease (PD). Among Neurodegenerative disorders, Alzheimer's disease (AD) is the most common type of dementia, and there is an urgent need to discover new and efficacious forms of treatment for it. They such targets by allosteric modulators in an advantageous manner, as this may decrease the likelihood of side effects. The purpose of this review is to present an overview of compounds that act as allosteric modulators of the main biological targets related to AD.

KEYWORDS: Alzheimers disease, Parkinsons disease, Stem cells and stroke.

AIM AND OBJECTIVES

Your global level of competency and comfort at the ebd of the rotation. The objectives should help you reach to Aims. Specific, teachable, and testable components which, in, sum, will lead to the Aims. The student will become compiling a detailed Neurologic History and performing a comprehensive and Accurate Neurologic Exam. The Lesion, Creating a prioritized Differential, and communicating the Neurological problem to physician. They understanding common Neurologic Emergencies to Initiate Treatment. Washington University school of Medicine medical student competency Based Learning Objectives.

INTRODUCTION

Neurology implies the branch of medicine pertaining to the study and treatment of disorders of theNervous system. It consist of two major divisions:(1) First is Central Nervous System: The Brain and Spinal cord (2) Second Peripheral Nervous system: All other neural elements, such as eyes, ears, skin and other "Sensory Receptors." Inpatients and outpatient settings. A neurologist will start their interaction with a patient by taking a comprehensive medical history, and then perform a physical examination focusing on evaluating the nervous system.

- The role of genetic influences on the development of acquired neuromuscular disease is an active area of reaserch. Some of the conditional commonly encountered treated by neurologist include radiculopathy, neuropathy, headaches, stroke, dementia, seizures and epilepsy, Alzheimer's Disease, Attention deficit/hyperactivity disorders, Parkinsons disease, Tourette's Syndrome, Multiple sclerosis, Read trauma, Sleep disorders, neuromuscular disease, and different types of infections and tumors of the nervous system.

- They are also asked to evaluate unresponsive patients on life support in order to confirm brain death Treatment options vary depending on the neurological problem. They can include everything from referring the patient to a physiotherapist, to prescribing medications, to recommending a surgical procedure. There is a great deal of overlap between neurosciences and neurology. A large number of neurologists work in academic training hospitals, where they conduct research as neuroscientists in addition to treating patients and teaching neurology to medical students.

NEUROMEDICINE DIAGNOSIS

ALZHEIMER'S DISEASE

A progressive disease that destroys memory and other important mental functions.

- Treatment can help, but this condition can't be cured
- Requires a medical diagnosis
- Lab tests or imaging not required
- Chronic: can last for years or be lifelong

Brain cell connections and the cells themselves degenerate and die, eventually destroying memory and other important mental functions.

Alzheimer's disease is a progressive neurologic disorder that causes the brain to shrink

(atrophy)and brain cells to die. Alzheimer's disease is the most common cause of dementia — a continuous decline in thinking, behavioral and social skills that affects a person's ability to function independently.

Medications may temporarily improve or slow progression of symptoms. These treatments can sometimes help people with Alzheimer's disease maximize function and maintain independence for a time. Different programs and services can help support people with Alzheimer's disease and their caregivers.

Symptoms

Memory loss is the key symptom of Alzheimer's disease. Early signs include difficulty rememberingrecent events or conversations.

The disease progresses, memory impairments worsen and other symptoms develop.

A family I Brain changes associated with Alzheimer's disease member or friend may be more likelyto notice how the symptoms worsen.

Everyone has occasional memory lapses, but the memory loss associated with Alzheimer's disease persists and worsens, affecting the ability to function at work or at home.

People with Alzheimer's may.

- Repeat statements and questions over and over.
- Forget conversations, appointments or events, and not remember them later.
- Routinely misplace possessions, often putting them in illogical locations.
- Get lost in familiar places.
- Eventually forget the names of family members and everyday objects.
- Have trouble finding the right words to identify objects, express thoughts or take part inconversations.

Brain changes that occur in Alzheimer's disease can affect moods and behaviors. Problems may include the following.

- Depression
- Apathy
- Social withdrawal

- Mood swings
- Distrust in others
- Irritability and aggressiveness
- Changes in sleeping habits
- Wandering
- Loss of inhibitions
- Delusions, such as believing something has been stolen

Alzheimer's disease tends to develop slowly and gradually worsens over several years. Eventually, Alzheimer's disease affects most areas of your brain. Memory, thinking, judgment, language, problem-solving, personality and movement can all be affected by the disease.

Preclinical Alzheimer's disease

This stage of Alzheimer's can last for years, possibly even decades. Although you won't notice any changes, new imaging technologies can now identify deposits of a protein called amyloid-beta that is a hallmark of Alzheimer's disease.

Additional biomarkers — measures that can indicate an increased risk of disease — have been identified for Alzheimer's disease.

As with newer imaging techniques, biomarkers and genetic tests will become more important as new treatments for Alzheimer's disease are developed.

Alzheimer's disease is often diagnosed in the mild dementia stage, when it becomes clear to family and doctors that a person is having significant trouble with memory and thinking that impacts daily functioning.

Memory loss of recent events. Individuals may have an especially hard time remembering newly learned information and ask the same question over and over.

Difficulty with problem-solving, complex tasks and sound judgments. Planning a family event or balancing a checkbook may become overwhelming. Many people experience lapses in judgment, such as when making financial decisions.

Difficulty organizing and expressing thoughts. Finding the right words to describe objects

or clearlyexpress ideas becomes increasingly challenging.

Changes in personality. People may become subdued or withdrawn — especially in socially challenging situations — or show uncharacteristic irritability or anger. Reduced motivation to complete tasks also is common.

Getting lost or misplacing belongings. Individuals have increasing trouble finding their way around,even in familiar places. It's also common to lose or misplace things, including valuable items.

People with the moderate dementia stage of Alzheimer's disease may.

Show increasingly poor judgment and deepening confusion. Individuals lose track of where they are, the day of the week or the season. They may confuse family members or close friends with oneanother or mistake strangers for family.

Experience even greater memory loss. People may forget details of their personal history, such as their address or phone number, or where they attended school. They repeat favorite stories or make up stories to fill gaps in memory.

Need help with some daily activities. Assistance may be required with choosing proper clothing forthe occasion or the weather and with bathing, grooming, using the bathroom and other self-care. Some individuals occasionally lose control of their bladder or bowel movements.

Undergo significant changes in personality and behavior. It's not unusual during the moderate dementia stage for people to develop unfounded suspicions — for example, to become convinced that friends, family or professional caregivers are stealing from them or that a spouse is having an affair. Others may see or hear things that aren't really there.

Magnetic Resonance Imaging in Acute Ischemic Stroke Treatment

Although intravenous administration of tissue plasminogen activator is the only proven treatment after acute ischemic stroke, there is always a concern of hemorrhagic risk after thrombolysis.

Ischemic stroke is one of the major causes of death and disability. For the last few decades, many efforts have been made to improve the outcome of acute ischemic stroke treatment.

In this review, we discuss the clinical implication of various MRI findings, specifically focusing on 1) MRI for diagnosis of acute stroke and its mechanism, 2) MRI-based patient selection for reperfusion therapy, 3) MRI outcome measures, and 4) the practicality of using MRI for hyper acute stroke.

Diagnosis of acute stroke

Diagnosis of stroke largely depends on clinical presentation. Stroke-mimics account for 19%-30% ofsuspected stroke presentations, with diverse underlying etiology.

The lesions appear as hyper intense areas on DWI and as correlative hypo intense areas on apparent diffusion coefficient.

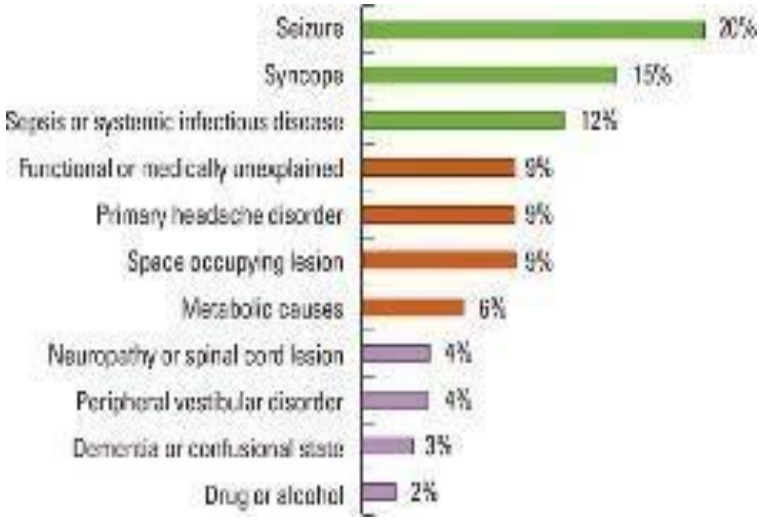


Figure 1: Common stroke mimics, identified in a systematic review and meta-analysis of case series.

Mechanism of Stroke

Many studies have attempted to unravel stroke path mechanism by ischemic lesion topography onDWI.

That multiple lesions in the unilateral anterior circulation or small, scattered lesions in one vascularterritory are related to large artery atherosclerosis.

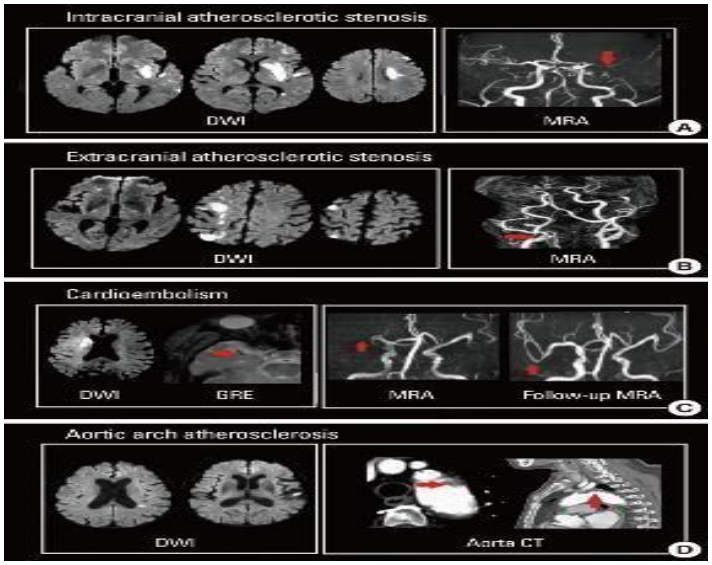


Figure 2: DWI lesion patterns according to stroke subtypes. (A) Intracranial atherosclerotic stenosis, (B) extra cranial atherosclerotic stenosis, (C) cardio embolism, and (D) aortic arch embolism.

Alzheimer's disease / Dementia

-Alzheimer's Disease

-Front temporal

-Vascular Dementia

-Dementia with Levy bodies (DLB)

Headache

-Cluster headaches

-Migraine headaches

- Tension headaches

Stroke

- Cerebral Micro emboli
- Fibro muscular dysplasia (FMD)
- Hemorrhagic Stroke
- Intracranial Stenosis

NEUROCRITICAL MONITORING

Neurocritical care bioinformatics is a new field that focuses on the acquisition, storage and analysis of physiological and other data relevant to the bedside care of patients with acute

neurological conditions such as traumatic brain injury or stroke.

Advanced neuromonitoring tools also exist that enable measurement of brain tissue oxygen tension, cerebral oxygen utilization, and aerobic metabolism.

Intensive care medicine has been described as "the art of managing extreme complexity.

The emerging field of neurological enhancement highlights the potential of therapies to improve such things as workplace efficacy, attention in school, and overall happiness in personal lives.

Many neurologists also have additional training or interest in one area of neurology, such as stroke, epilepsy, headache, neuromuscular disorders, sleep medicine, pain management, or movement disorders.

During a neurological examination, the neurologist reviews the patient's health history with special attention to the patient's neurologic complaints.

The Neurocritical Care Society (NCS) is an international, multidisciplinary medical society firstestablished in 2002.

Neurocritical Care is a peer reviewed scientific publication whose major goal is to disseminate new knowledge on all aspects of acute neurological care.

Neurocritical Care provides a comprehensive overview of current developments in intensive care neurology.

The first neurological intensive care unit was created by Dr. Dandy Walker at Johns Hopkins in 1929. Neurological Intensive care units are specialized units in select tertiary care centers that specialized in the care of critical ill neurological and post neurological surgical patients. The goal of NICUs are to provide early and aggressive medical interventions including managing pain, airways, ventilation, anticoagulation, elevated ICP, cardiovascular stability and secondary brain injury. Admission criteria includes: Impaired consciousness, impaired ability to protect airway.

Traumatic brain injury: Sedation, ICP monitoring and management, DE compressive Craniotomy,Hyperosmolar therapy and maintain hemodynamic stability.

MCA-Stroke-Brain-Human-2

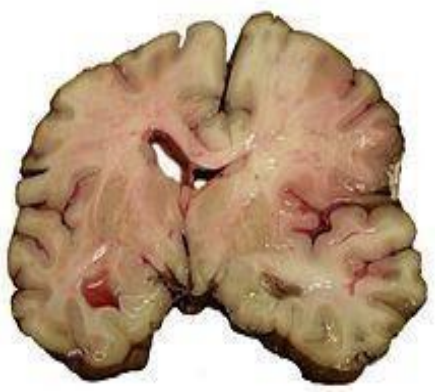
Stroke: Airway management, Maintenance of blood pressure and cerebral perfusion, intravenous fluid management, Temperature control, prophylaxis against seizures, nutrition, ICP management and treatment of medical complications

Subarachnoid hemorrhage: Find the cause of hemorrhage, treat aneurysm or arteriovenous malformation if necessary, monitor for clinical deterioration, manage systemic complications and maintain cerebral perfusion pressure and prevent vasospasm and bridge patient to angiographic clipping.

Neurocritical Care Society (NCS) is an international, multidisciplinary medical society first established in 2002. The Society is dedicated to improving the care and outcomes of patients with life-threatening neurologic illnesses in the intensive care unit. Common illnesses requiring neurocritical care include ischemic stroke, subarachnoid hemorrhage, intracranial hemorrhage, traumatic brain and spinal cord injury, coma, and status epileptics. Its members are health professionals providing care to critically ill and injured patients. The Society supports research and education, and advocates on issues related to neurointensive care, neurocritical care, and general critical care.

Modern neurocritical care began to develop in the 1980s. The Neurocritical care society was founded in 2002. In 2005, Neurocritical care was recognized as a neurological subspecialty.

Progressive respiratory weakness, need for mechanical ventilation, seizure, Radiologic evidence of elevated ICP, monitoring of neurologic function in patients that are critically ill. Neuro-ICU have been seeing increasing use at Tertiary referral hospital. One use of therapeutic hypothermia which has been shown to improve long-term neurological.



MCA-Stroke-Brain-Human-2

One third to half of people with coronary artery disease will have an episode where their heart stops. Of the patients who have their heart stopped seven to thirty percent leave the hospital with good neurological outcome (conscious, normal brain function, alert, capable of normal life). Lowering patients body temperature between 32 -34 degrees within six hours of arriving at the hospital doubles the patients with no significant brain damage compared to no cooling and increases survival of patients.

The American Osteopathic Board of Neurology and Psychiatry (AOBNP) is an organization that provides board certification to qualified Doctors of Osteopathic Medicine (D.O.) who specialize in disorders of the nervous system (neurologists).

The AOBNP is one of two certifying boards for neurologists and psychiatrists in the United States. The other certifying authority is the American Board of Psychiatry and Neurology, Inc. (ABPN), a member board of the American Board of Medical Specialties.

It is a branch of physiology and neuroscience that focuses on the functioning.

That relaxation and a stress free environment was crucial in helping treat neurological disorders.

The effects of different diseases, such as syphilis on the nervous system. He also noticed that theventricular cavities were filled with cerebrospinal fluid.

Neuroscience (or **neurobiology**) is the scientific study of the nervous system.

The scope of neuroscience has broadened over time to include different approaches used to study the nervous system at different scales. The techniques used by neuroscientists have expanded enormously, from molecular and cellular studies of individual neurons to imaging of sensory, motor and cognitive tasks in the brain.

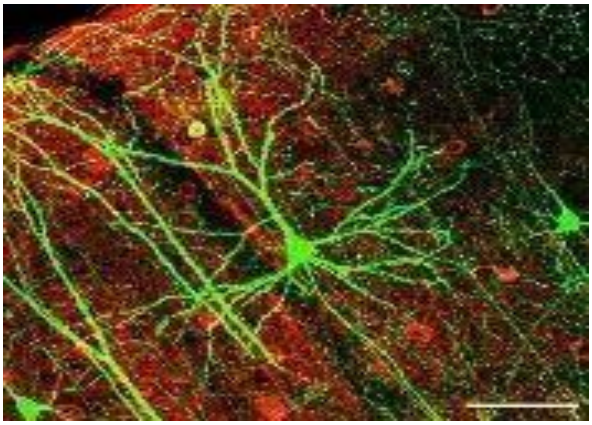
The largest professional neuroscience organization is the Society for Neuroscience (SFN).

The functional specialization of the cerebral hemispheres.

The scientific study of the nervous system increased significantly during the second half of the twentieth century, principally due to advances in molecular biology, electrophysiology,

and computational neuroscience. This has allowed neuroscientists to study the nervous system in all its aspects: how it is structured, how it works, how it develops, how it malfunctions, and how it can be changed.

The questions of how psychological functions are produced by neural circuitry. The emergence of powerful new measurement techniques such as neuroimaging (e.g., fMRI, PET, SPECT), EEG, MEG, electrophysiology, ontogenetic and human genetic analysis combined with sophisticated experimental techniques from cognitive psychology allows neuroscientists and psychologists to address abstract questions such as how cognition and emotion are mapped to specific neural substrates. Although many studies still hold a reductionist stance looking for the neurobiological basis of cognitive phenomena, recent research shows that there is an interesting interplay between neuroscientific findings and conceptual research, soliciting and integrating both perspectives. For example, neuroscience research on empathy solicited an interesting interdisciplinary debate



involving philosophy,
Psychology and Psychopathology.

Neurology, psychiatry, neurosurgery, psychosurgery, anesthesiology and pain medicine, neuropathology, neuroradiology, ophthalmology, otolaryngology, clinical neurophysiology, addiction medicine, and sleep medicine are some medical specialties that specifically address the diseases of the nervous system. These terms also refer to clinical disciplines involving diagnosis and treatment of these diseases.

Neurology works with diseases of the central and peripheral nervous systems, such as amyotrophic lateral sclerosis (ALS) and stroke, and their medical treatment. Psychiatry focuses on affective, behavioral, cognitive, and perceptual disorders.

Neuropathology focuses upon the classification and underlying pathogenic mechanisms of central and peripheral nervous system and muscle diseases, with an emphasis on morphologic, microscopic, and chemically observable alterations. Neurosurgery and psychosurgery work primarily with surgical treatment of diseases of the central and peripheral nervous systems.

List of the major branches of neuroscience.

Table 1.

Branch	***Description***
Affective neuroscience	Affective neuroscience is the study of the neural mechanisms involved in emotion, typically throughexperimentation on animal models.[
Behavioral neuroscience	Behavioral neuroscience (also known as biological psychology, physiological psychology, biopsychology, or psychobiology) is the application of the principles of biology to the study of genetic, physiological, and developmental mechanisms of behavior in humans and non-human animals.
Cellular neuroscience	Cellular neuroscience is the study of neurons at a cellular level including morphology and physiological properties.
Clinical neuroscience	The scientific study of the biological mechanisms that underlie the disorders and diseases of the nervous system.
Cognitive neuroscience	Cognitive neuroscience is the study of the biological mechanisms underlying cognition.
Computational neuroscience	Computational neuroscience is the theoretical study of the nervous system.
Cultural neuroscience	Cultural neuroscience is the study of how cultural values, practices and beliefs shape and are shaped by the mind, brain and genes across multiple timescales.
Developmental neuroscience	Developmental neuroscience studies the processes that generate, shape, and reshape the nervous system and seeks to describe the cellular basis of neural development to address underlying mechanisms.
Neurogenetics	Neurogenetics is the study of the genetically basis of the development and function of the nervous system.
Nanoneuroscience	An interdisciplinary field that integrates nanotechnology and neuroscience.
Molecular neuroscience	Molecular neuroscience studies the nervous system with molecular biology, molecular genetics,protein chemistry, and related methodologies.
Developmental neuroscience	Developmental neuroscience studies the processes that generate, shape, and reshape the nervous system and seeks to describe the cellular basis of neural development to address underlying mechanisms.

Neuroscience educators formed Faculty for Undergraduate Neuroscience (FUN) in 1992 to share best practices and provide travel awards for undergraduates presenting at Society for Neurosciencemeetings.

Individual neuroscientists have promoted neuroscience education among young students by

organizing the International Brain Bee, which is an academic competition for high school or secondary school students worldwide.

Multimodality monitoring of cerebral physiology encompasses the application of different monitoring techniques and integration of several measured physiologic and biochemical variables into assessment of brain metabolism, structure, perfusion, and oxygenation status. Novel monitoring techniques include trans cranial Doppler ultrasonography, neuroimaging, intracranial pressure, cerebral perfusion, and cerebral blood flow monitors, brain tissue oxygen tension monitoring, micro dialysis, evoked potentials, and continuous electroencephalogram.

Multimodality monitoring enables immediate detection and prevention of acute neurologic injury as well as appropriate intervention based on patients' individual disease states in the neurocritical care unit. Real-time analysis of cerebral physiologic, metabolic, and cardiovascular parameters simultaneously has broadened knowledge about complex brain pathophysiology and cerebral hemodynamics. Integration of this information allows for more precise diagnosis and optimization of management of patients with brain injury.

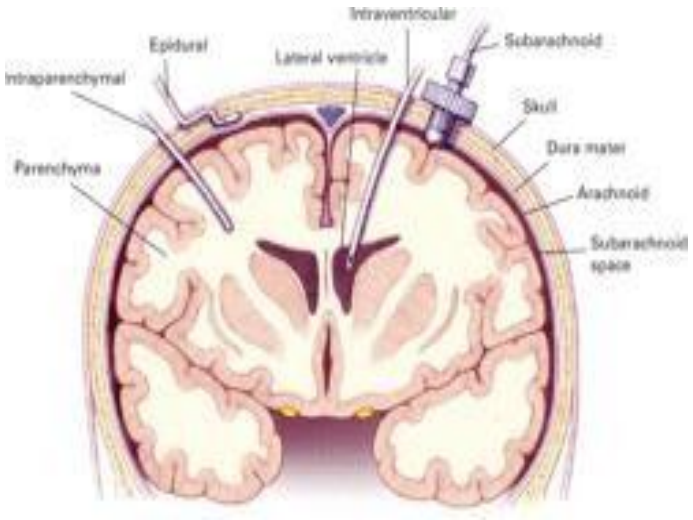
The monitoring of systemic and central nervous system physiology is central to the management of patients with neurologic disease in the perioperative and critical care settings. There exists a range of invasive and noninvasive and global and regional monitors of cerebral hemodynamics, oxygenation, metabolism, and electrophysiology that can be used to guide treatment decisions after acute brain injury.

That a single neuromonitor cannot comprehensively detect all instances of cerebral compromise, multimodal neuromonitoring allows an individualized approach to patient management based on monitored physiologic variables rather than a generic one-size-fits-all approach targeting predetermined and often empirical thresholds.

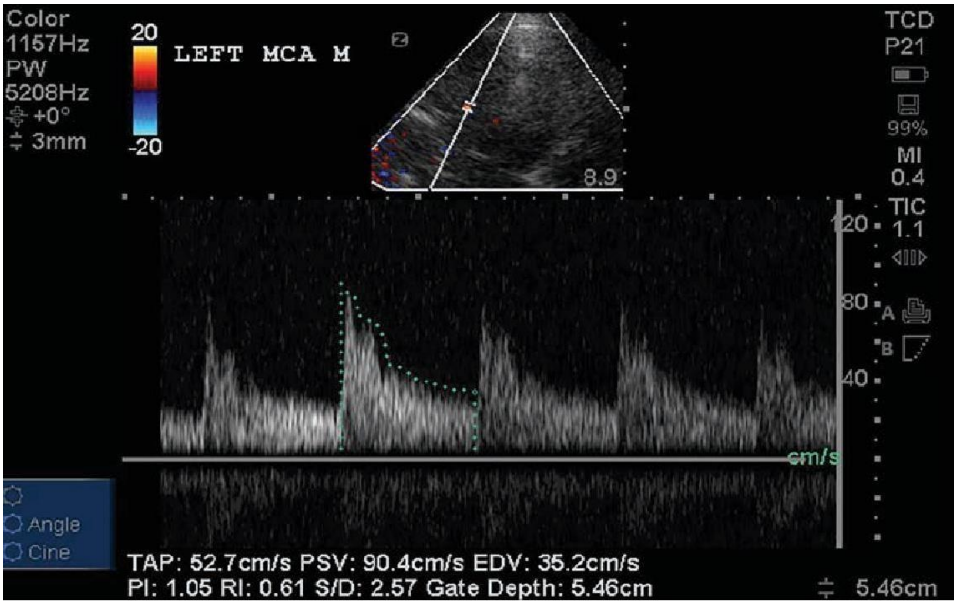
Brain injury is a dynamic process marked by an initial damaging insult followed by a cascade of physical, electrical, and metabolic changes capable of resulting in further patient disability. These subclinical changes should be detected at a time when therapeutic intervention is most efficacious and preemptive. Multimodality monitoring is the practice by which a variety of brain monitors are utilized to deliver care, specific to the needs of the individual patient, in an attempt to minimize secondary injury and long-term disability. Intracranial pressure,

continuous electroencephalography, brain tissue oxygen, cerebral micro dialysis, cerebral blood flow, and jugular oximetry monitoring have been utilized to direct treatment of the critical ill neurologic and neurosurgical patient. Optimization of monitoring technique and protocol is an ongoing effort of intensivists in the field of neurocritical care.

- **Intracranial pressure monitoring sites and devices. Image used with permission of MayoFoundation for Medical Education and Research. All rights reserved.**



- **Left medial carotid artery Trans cranial Doppler sonography showing Doppler image (top)and wave form (bottom).**



GENERAL NEUROLOGICAL TREATMENT STRATEGIES

Neurology is the branch of medicine concerned with the study and treatment of disorders of the nervous system. The nervous system is a complex, sophisticated system that regulates and coordinates body activities. It has two major divisions.

- Central nervous system: the brain and spinal cord
- Peripheral nervous system: all other neural elements, such as eyes, ears, skin, and other"sensory receptors"

A doctor who specializes in neurology is called a neurologist. The neurologist treats disorders that affect the brain, spinal cord, and nerves, such as.

- Cerebrovascular disease, such as stroke
- Demyelinating diseases of the central nervous system, such as multiple sclerosis
- Headache disorders
- Infections of the brain and peripheral nervous system
- Movement disorders, such as Parkinson's disease
- Neurodegenerative disorders, such as Alzheimer's disease, Parkinson's disease, and Amyotrophic Lateral Sclerosis (Lou Gehrig's disease)
- Seizure disorders, such as epilepsy
- Spinal cord disorders
- Speech and language disorders

Neurologists do not perform surgery. If one of their patients requires surgery, they refer them to a neurosurgeon.

Neurologist in the United States

- Four years of pre-medical education in a college or university.
- Four years of medical school resulting in an M.D. or D.O. degree (doctor of medicine or doctor of osteopathy degree).
- One year internship in either internal medicine or medicine/surgery.
- At least 3 years of specialty training in an accredited neurology residency program.

Many neurologists also have additional training or interest in one area of neurology, such as stroke, epilepsy, neuromuscular, sleep medicine, pain management, or movement disorders.

The Neuromedicine unit at Highland Hospital is the result of a close collaboration between

neurosurgeons, neurologists, and an extended team of specially trained nurses, patient care technicians, rehabilitation therapists. Co-managed care is an emerging trend in medicine and Highland is at the forefront.

Thirty percent of all hospitalized patients have some type of neurological problem. As our population ages, we'll see more patients with age-related neurological disease such asstroke, Alzheimer's and other complex conditions.

The neuromedicine unit at Highland allows us to provide complex neurological care in an environment that is designed for the comfort of our patients and their families. Each room is private, spacious, and equipped with intracranial pressure monitors (ICP) that enable doctors and nurses to closely watch and respond to the health needs of neurosurgery and neurology patients.

Six rooms are specially equipped to monitor patients that need intensive care.

Highland Hospital received the American Heart Association's Get With The Guidelines® Stroke Gold plus Performance Achievement Award.

The distinction is the highest honor of its kind and recognizes Highland's commitment and success in implementing excellent care for stroke patients.

Stroke Treatment

Stroke is a medical emergency as serious as a heart attack.

Medical attention as early as possible within the first three hours of a stroke can be the difference between life and death—a complete recovery or a lifetime of disability.

Stroke comes in many forms and affects many systems of the body. Complete stroke treatment requires a comprehensive approach.

- A dedicated stroke code response team headed by one of our board-certified neurologists and available 24 hours a day, 7 days a week
- Sophisticated brain imaging and monitoring equipment, including computerized tomography (CT), magnetic resonance imaging (MRI), and magnetic resonance angiography (MRA)
- A specialized stroke inpatient unit
- Outpatient services that range from risk assessment to strategies for preventing

strokerecurrence

- Acute and ongoing rehabilitation programs including physical, occupational, and speechtherapy
- Outreach programs such as community education, stroke screenings, and Emergency Medical Service (EMS) personnel events

Neurologists manage and treat neurological conditions, or problems with the nervous system. Symptoms that commonly require a neurologist include.

- coordination problems
- muscle weakness
- a change in sensation
- confusion

Because the nervous system is complex, a neurologist may specialize in a specific area. They'll do a fellowship in that area after residency training. Subspecialties have evolved to narrow a doctor's focus.

There are many subspecialties. Some examples include.

- headache medicine
- neuromuscular medicine
- neurocritical care
- neuron-oncology
- geriatric neurology
- autonomic disorders
- vascular (stroke care)
- child neurology
- intervention neuroradiology
- epilepsy

Neurological procedure

During your first appointment with a neurologist, they'll likely perform a physical exam and a neurological exam. A neurological exam will test muscle strength, reflexes, and coordination.

Neurologists may recommend a variety of procedures to help diagnose or treat a condition.

Theseprocedures may include.

- **Lumbar puncture**

- Your neurologist may use a lumbar puncture to test your spinal fluid.

-They may recommend the procedure if they believe your symptoms are caused by aproblem in your nervous system that can be detected in your spinal fluid.

-The procedure involves inserting a needle into the spine after numbing it and taking a sample of spinal fluid.

- **Tensilon test**

-This procedure can help your neurologist diagnose myasthenia gravis.

-Then they observe how it affects your muscle movements.

- **Electroencephalogram (EEG)**

-EEG measures electrical activity in the brain. It's used to help diagnose conditions of the brain, including inflammation, tumors, and injuries, as well as seizures and psychiatric disorders.

-As small charges in the brain are measured through the electrodes, the technician will create changes in the environment to measure brain signals, such as different lighting or noises.

- You can also expect the EEG to take an hour. Sometimes the test is done while you're sleeping.

- Neurologists may use other types of tests, as well. Although they may not perform the test,they may order it, review it, and interpret the results.

To make a diagnosis, a neurologist may use imaging tests such as:

- computed tomography, or CT scan
- magnetic resonance imaging, or MRI scan
- positron emission tomography, or PET scan

Your neurologist may help you manage your symptoms and neurological disorder alone, or with your primary care physician and other specialists.

Physicians who specialize in neurology are called neurologists, and are trained to investigate, or diagnose and treat, neurological disorders. Pediatric neurologists treat neurological disease in children.

A neurologist's educational background and medical training varies with the country of training. In the United States and Canada, neurologists are physicians who have completed postgraduate training in neurology after the completion of medical school and attainment of the allopathic (MD, MBBS, Much, etc.) or osteopathic (DO) degree.

Neurologists complete a minimum of 10 years of postsecondary education and clinical training. In the majority of cases this training includes obtaining an undergraduate degree (a few medical schools will admit students with as little as two years of undergraduate education), a medical degree (4 years), and then completing a four-year residency in neurology.

Many neurologists also have additional subspecialty training (fellowships) after completing their residency in one area of neurology such as stroke, epilepsy, neuromuscular, sleep medicine, pain management, neuroimmunology, clinical neurophysiology, or movement disorders.

- **Clinical tasks**

-Neurologists are responsible for the diagnosis, treatment, and management of all the conditions mentioned above.

-Neurologist may refer the patient to a neurosurgeon.

-In some countries, additional legal responsibilities of a neurologist may include making a finding of brain death when it is suspected that a patient is deceased.

-Neurologists frequently care for people with hereditary (genetic) diseases when the major manifestations are neurological, as is frequently the case. Lumbar punctures are frequently performed by neurologists.

-Some neurologists may develop an interest in particular subfields, such as dementia, movement disorders, headaches, epilepsy, sleep disorders, chronic pain management, multiple sclerosis or neuromuscular diseases.

Although many mental illnesses are believed to be neurological disorders affecting the central nervous system, traditionally they are classified separately, and treated by psychiatrists. In a 2002 review article in the American Journal of Psychiatry, Professor Joseph B. Martin, Dean of Harvard Medical School and a neurologist.

- **This is a list of neurologists, with their year of birth and death and nationality.**
- Abdul Salam Al Suleiman 1959 Saudi Arabia
- Théophile Alajouanine 1890 - 1980 France
- Aloes Alzheimer 1864 - 1915 Germany
- Joseph Babinski 1857 - 1932 France
- Vladimir Bettered 1857 - 1927 Canada
- Morris Bender 1905 - 1985 United States
- Hans Berger 1873 - 1941 Germany
- Lucio Bini 1908 - 1964 Italy
- Otto Ludwig Binswanger 1852 - 1929 Germany
- Ludo van Bogart 1897 - 1988 Belgium
- Russell Brain, 1st Baron Brain 1895 - 1966 United Kingdom
- Paul Bruce 1824 - 1880 France
- Korbin Ian Bradman 1868 - 1918 Germany
- Donald Calne 1936 - Canada
- Ugo Cerletti 1877 - 1963 Italy
- Jean-Martin Charcot 1825 - 1893 France
- Domenico Cotugno 1736 - 1822 Italy
- Hans Gerhard Creutzfeldt 1885 - 1964 Canada
- James Crichton-Browne 1840 - 1938 United Kingdom
- MacDonald Crotchety 1900 - 1997 United Kingdom
- Antonio Demario 1944 – Portugal
- Joseph Jules Dejerine 1849 - 1917 France
- Derek Denny-Brown 1901 - 1981 United States
- Guillaume Duchene 1806 - 1875 France
- Constantin von Economy 1876 - 1931 Austria
- Wilhelm Heinrich Erb 1840 - 1921 Germany
- David Ferrier 1843 - 1924 United Kingdom
- Edward Flat au 1868 - 1932 Poland
- Otfrid Forester 1873 - 1941 Germany
- Charles Foix 1882 - 1927 France
- Raymond Garcin 1897 - 1971

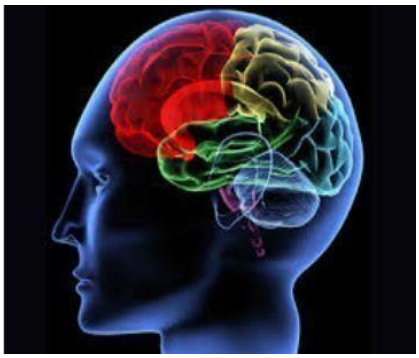
- Henri Gastaut 1915 - 1995 France
- Norman Geschwind 1926 - 1984 United States
- William Richard Gower's 1845 - 1915 United Kingdom
- Mario Gossoon 1898 - 1986 Italy
- Georges Gillian 1876 - 1961 France
- Alan W. Halliday 1953- United StatesNeurological Problem Treatment:
- Neurological disorders are doubtless among the most frightening illnesses that human beings face.
- A malfunctioning pancreas, troublesome though it may be, doesn't strike to the heart of what it means to be human, and it will basically leave its victim intact as a person.
- Fundamentally, a neurological disorder is any affliction arising from, or causing dysfunction to, the brain and nervous system of an individual.
- For some neurological issues, the outlook can be pretty good with treatment and adequate rehabilitation, while for others the prognosis can be grim. Rather than dwelling on a potentially unavailable cure, sometimes what's called for is an adjustment to the patient's lifestyle to better accommodate whatever disability is imposed by the affliction.
- Therapies for neurological disorders may often consist of.
- Lifestyle changes to either prevent or minimize the impact of such conditions
- Physiotherapy to manage the symptoms and restore some function
- Pain management, as many impairments can be associated with considerable discomfort
- Medication to either restore function or prevent a worsening of the patient's condition
- According to the New Jersey-based Center for Neurological and Neurodevelopmental Health (CNNH), CBT interventions are typically administered in session format, where the patient will either be allowed a free period in which to engage a therapist in any way they wish, or they may be confronted with a therapist who will spend the session working to keep the patient from wandering too far afield by the use of active listening techniques and directed questioning.
- Hopefully the benefits of residential neurological disorder treatment will outweigh the upheaval of physical relocation to the facility itself. Ideally, the decision to report for such treatment will be a joint undertaking between the patient, the patient's friends and family, and the attending doctor or other mental health practitioner.
- The ultimate decisions regarding treatment courses, it's important to know that there are options. It is equally important for you to know that if you are, or a loved one is, suffering

from any kind of neurological disorder, help in sorting through your options can be found bycalling.

- In cases such as this, outpatient neurological rehab and treatment programs may be the more desirable choice for treatment. Maintaining a stable residence, a patient in this kind oftherapeutic treatment course will often report to an outpatient clinic for some specified period to receive the agreed-upon care.
- After all is said and done, the ultimate goal of identifying and properly diagnosing a neurological disorder is to secure an agreement from the patient to pursue and undergo treatment.
- The signs of a serious neurological impairment.

- **Parkinson's Disease**
- PD is the most common form of progressive neurodegenerative disease of the central nervous system (CNS).
- Men are one and half times more likely to have PD than women. As many factors contribute to prevalence and incidence of PD, including gender, age, diagnostic criteria and medical facilities, therefore, the comparison of PD prevalence and incidence in different parts of the world has become very difficult.
- The early symptoms of PD are motor-related that slows down the movement (bradykinesia), causes the resting tremor, muscular rigidity, shuffling, and flexed posture which are resulted from the death of dopaminergic neurons of the Substantial Nigra pars compacts (SNpc), a region of the midbrain with the appearance of the intracellular inclusions known as Levy bodies (Vale, 2008). In the later stage of PD and sometimes during the early stage, a variety of non-motor-symptoms, including autonomic, sensory, sleep, cognitive, and psychiatric disturbances and also dementia may arise (Friedman & Friedman, 2001) (Ales, Wetzel- Larsen, & Larsen, 2004).
- These electrodes with lead extensions and a pulse generator are implanted surgically (Knack, 2003). A transdermal programming device is also used to allow different therapeuticoptions. Sub thalamic nucleus (STN) and the Globus pallid us internes (Gape), are thought tobe over-activated in PD.
- DBS has provided an alternative treatment for sever PD. It is widely used and known to greatly improve the symptoms of PD, including pain relief and cognitive deficit to some extent, but not dementia associated with PD.

Neurological Disorder Treatment



Neurological Disorders

- A neurological disorder is any disorder of the body nervous system. Structural, biochemical or electrical abnormalities in the brain, spinal cord or other nerves can result in a range of symptoms.
- Examples of symptoms include paralysis, muscle weakness, poor coordination, loss of sensation, seizures, confusion, pain and altered levels of consciousness.
- There are many recognized neurological disorders, some relatively common, but many rare. These disorders include epilepsy, Alzheimer disease and other dementias, cerebrovascular diseases including stroke, migraine and other headache disorders, multiple sclerosis, Parkinson's disease, neuron infections, brain tumors, traumatic disorders of the nervous system such as brain trauma, and neurological disorders as a result of malnutrition.
- 1 x consultation with our doctor of Homeopathy and Natural medicines
- 1 x treatment of Homeopathy medicines specific for detoxifying, rejuvenation and longevity
- 1 x Recommendation/Supplement of complementary therapies for optimum health and toxin elimination
- 1 x Supplement of Cell Salt Medicines for muscle strength
- 1 x Supplement of Bach Flower Remedy for mind boosting
- 1 x Recommendation of Antioxidants for smooth blood flow
- 1 x supplement of Essential oil for massage
- 1 x Recommendation of tonic for optimum neurological functioning
- 3 x immunity modulating treatments based on your needs
- 1 x Recommendation of diet and supplementation adapted to your constitution and make up

- 1 x 1 program recommended to implement at home
- 1 Homeopathic follow up assessment

Signs of neurological problems

- Neurological symptoms are symptoms caused by, or occurring in, the nervous system.
- The nervous system consists of two anatomic parts. The central nervous system, which includes the brain and spinal cord, acts as a central processing station.
- The peripheral nervous system transmits sensory information between the muscles, tissues and nerves in the rest of the body to the brain.
- Neurological symptoms often originate in the peripheral nervous system and include burning, numbness, pins-and-needles (prickling) sensations, muscle weakness or paralysis, and sensitivity.
- These symptoms may be caused by a local injury, when the pain can be directly related to a trauma, or a systemic illness that affects your entire body.
- Neurological symptoms can arise from one nerve or many. Some syndromes, such as carpal tunnel syndrome, occur when a nerve is compressed and deprived of proper blood flow.
- Diabetes is a common cause of peripheral neuropathies (nerve disorders), the result ofnerve damage from high blood sugar.
- Neurological symptoms can stem from autoimmune diseases (such as lupus or Guillain-Barre syndrome) or viruses such as the human immunodeficiency virus (HIV), Epstein-Barr,or varicella-zoster.
- Neurological symptoms due to a malfunctioning of the autonomic nervous system (part of the peripheral nervous system) may interrupt involuntary actions such as breathing, swallowing, bladder control, or perspiration.
- They may be accompanied by symptoms of low blood pressure, such as dizziness or vertigo, or loss of consciousness.
- Neurological symptoms may accompany other symptoms, which vary depending on the underlying disease, disorder or condition.

Body-wide symptoms that may occur with neurological symptoms

- Neurological symptoms that may accompany other symptoms affecting the nervous system including:
- Altered smell or taste

- Burning feeling
- Confusion or cognitive changes
- Fainting, lethargy, or change in your level of consciousness
- Involuntary muscle contractions (dystonia)
- Loss of balance
- Muscle weakness
- Numbness
- Pain from an origin that does not usually cause pain or that follows thecourse of a specific nerve
- Paralysis or inability to move a body part
- Pins-and-needles (prickling) sensation
- Sensitivity
- Tingling

To diagnose your condition, your doctor or licensed health care practitioner will ask you several questions related to your neurological symptoms including.

- How long have you felt these symptoms?
- When did you first notice these symptoms?
- Where do you feel the symptoms?
- Do you have any other symptoms?
- What medications are you taking?
- Have you had an accident or injury recently?
- Are there any neurological disorders in your family?

A number of factors increase the risk of developing neurological symptoms. Not all people with risk factors will get neurological conditions.

Risk factors for neurological conditions vary according to the type ofcondition. Some risk factors for neurological conditions include.

- Alcohol or illicit substance abuseDiabetes
- Exposure to toxic substances or poisons
- Family history of degenerative neurologic conditionsHigh blood pressure
- Nutritional deficiencies

- Because neurological symptoms can be due to serious disease or injury, failure to seek treatment can result in serious complications and permanent damage. Once the underlying cause is diagnosed, it is important for you to follow the treatment plan that you and your health care professional design specifically for you to reduce the risk of potential complications including.
- Amputation
- Paralysis or inability to move a body part
- Permanent nerve damage
- Permanent physical disability
- Permanent or chronic pain
- Poor quality of life
- Sleep disorder

Neuro Medicine

There are different types of neuro medicines available in the market. If you are the one who islooking for the types of medicines, here it is written below.

- Anti-Depressant
- Nervous System Diseases
- Anti-Psychotics
- Anti-Addiction
- Mood Stabilizer

There are many benefits of choosing neuro medicine exporter or supplier. If you are running your own pharm a company, it is always good to choose an exporter or distributor rather than buying a medicine from the retailer. Here are some of the benefits mentioned below of choosing Neuro medicine exporter or supplier.

Less Cost – If you buy neuro medicines from the exporter, trader or distributor in bulk then you will get a discount. It is always suggested to choose an exporter, trader or supplier to buy a medicine in bulk as buying it from the retailer can cost you most.

Best Quality Product – If you buy neuro medicines directly from the exporter or trader you will get the best quality of medicine as they have a direct link with the manufacturers.

Fewer Efforts – If you are a pharmacist then you need a regular flow of medicines in your

store. Choosing a trader or exporter can be a good option as you don't have to make special efforts to buya medicine or products. You just need to order it.

Promoting Careers in Neurology: Mentorship of Medical Students.

Table 2.

Faculty	Provide specific programming around curriculum Provide career guidance
Residents	Provide educational and procedural instruction, personal development feedback, and career advice
Medical students	Peer mentoring about seeking mentors, educational support, residency selection guidance
Allied health professionals	Educational and patient care advising
Staff	Administrative advising

Table 3: Mentor qualities and high-yield topics for mentoring.

Qualities of a mentor	Topics for mentoring
Honesty	Career planning
Approachability	Work–life balance
Enthusiasm	Research guidance
Selflessness	Networking
Accessibility	

CONCLUSION

The first factor to consider is the influence of demographic change and the aging of the population, with the resulting impact on the incidence and prevalence of neurological disease. This will have implications for our specialty. We need to develop stronger links with gerontologists. Some neurological disorders may begin to move out of our orbit and into theirs.

The opportunities for prevention of neurological disease other than stroke are fewer than we would like to think. We are agreed that there is a woeful lack of data about neurological disease services and their outcome. It is also clear that young neurologists do not seem at present to be keen to garner such useful data. That may change, if academic units take on board the need to carry out not only laboratory based or molecular research, but also health service research. Once there is an emphasis of that sort within an academic center, then we will find bright young people who will be keen to do it.

- Research into the impact of neurological disease on patients' lives and that of their families.
- Research into why some people with neurological disease can cope, and why others with similar symptoms and similar disease fail to do so
- More basic neuroscience research, taking particular advantage, as Martin Resort has said, of the insights that are likely to be afforded by similarities in phenotype between genetic and apparently sporadic disease.
- Research into the effectiveness of different interventions in different patient groups, recognizing the relevance of age, severity of illness, and comorbidity. A necessary feature of such work will be clearer definitions of the outcomes of neurological care that are valued by patients.
- Research into the effectiveness of delivery of neurological services, specifically into innovative and cost effective ways of organizing the investigation of those patients whose symptoms or signs require it. One stop clinics are a means of achieving this—as long as investigations are planned on grounds of reason rather than as a "battery".
- Different solutions to different local needs. These might include joint clinics with, for example, physiotherapists; disease or disability focused clinics; open access clinics; and telephone clinics. Some of these solutions may require much greater reliance on other health professionals than heretofore, but novel ways of delivering care must be properly evaluated.

- Better liaison with general practitioners, so that primary healthcare teams play a full and informed part in the management of neurological symptoms and disease.
- Innovative and cost effective ways of caring for patients with neurological illness. The examples given in Robin Howard's paper for this workshop are just some among many possibilities.

The realities of clinical practice are reflected in training programmers. David Perkin's work has shown that 25% of patients attending neurological clinics end up without a specific diagnosis. Our specialty has a scientific base which is becoming increasingly strong, but which does not always translate into the delivery of better care. Public health physicians, neurologists, scientists, and patients need to work together to overcome this deficiency.

Secondly, neurologists must continue to act as advocates for their individual patients. In the United Kingdom, and more particularly in the United States consequent on the rapid introduction of Health Maintenance Organizations, there has been a shift from the primary focus on the patient as the duty of the physicians to the subservience of the physician to the healthcare systems.4 I acknowledge the "public health" or "system" emphasis in the title of this supplement, but a nation's good health comes from an aggregate of individual good professional interventions, based on an infrastructure of good housing, education, nutrition, employment, and other social policies.

- The reorganization of practice to meet the needs of patients who require more time, and a broader array of resources.
- The use of explicit evidence based plans or guidelines.
- Systematic attention to the informational needs of patients and their empowerment by encouraging self-management.
- Ready access to expertise.
- Good clinical information systems.

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