Delirium and mental disorders due to a general medical condition

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MENTAL DISORDERS DUE TO A GENERAL MEDICAL CONDITION (GMC)

Mental disorders due to a GMC

- Delirium, Dementia, and Amnestic Disorders..
- Psychotic Disorders..
- Mood Disorders..
- Anxiety Disorders..
- Sexual Dysfunctions..
- Sleep Disorders..

Mental disorders due to a GMC

- **Always consider a ,,medical" cause before assigning a ,,primary" diagnosis!**
- Investigations in psychiatry have no ,,positive" diagnositc value. They are only for exclusion of ,,organic" causes.

Mental disorders due to a GMC

- Evidence from the history, examination, or lab findings that what you've found is directly related to a medical condition (a "direct physiological consequence").

- Clues to such a link include:
  - close temporal relationship
  - uncharacteristic features (unusually late age of onset)

Mental disorders due to a GMC

- Medical specialties most likely to encounter a patient with comorbid psychiatric symptoms:
  - Oncology
  - Dermatology
  - Rheumatology
  - Endocrinology
  - Neurology

Medical conditions that may cause mental disorders in late life

Condition	Mental disorders
Parkinson's disease	Depression, Psychosis, Dementia, Delirium
Stroke	Depression, Psychosis, Dementia, Anxiety, Delirium, Mania
Thyroid disorders	Depression, Psychosis, Dementia, Anxiety, Delirium, Mania
Chronic Airways Disease	Depression, Anxiety, Delirium, Cognitive impairment
Cancer	Depression, Delirium, Anxiety
Vitamin deficiencies	Depression, Psychosis, Dementia, Mania
Brain Tumors	Depression, Mania, Dementia, Psychosis
Metabolic disorders	Depression, Delirium, Psychosis
Sensory Impairments	Depression, Psychosis, Delirium, Anxiety

Mood disorder due to a general medical condition (*secondary mood disorders)*

- Causes of secondary mood disorders
  - Drug intoxication (alcohol or sedative-hypnotics, antipsychotics, antidepressants, H2-receptor blokers, antihypertensives, sex steroids, glucocorticoids, levodopa, bromocriptine)
  - Drug withdrawal (nicotine, caffeine, alcohol or sedative-hypnotics, cocaine, amphetamine)
  - Tumor (primary cerebral, systemic neoplasm)
  - Trauma (cerebral contusion, subdural hematoma)
  - Infection (cerebral or systemic)
  - Cardiac and vascular (cerebrocascular or cardiovascular)
  - Physiological or metabolic (hypoxemia, electrolyte disturbances, renal or hepatic failure, hypo- or hiperglycemia, postictal states)
  - Endocrine (thyroid or glucocorticoid disturbances)
  - Nutritional (vitamin B12, folate deficiency)
  - Demyelinating (MS)
  - Neurodegenerative (Parkinson's disease, Huntington's disease)

Mood disorder due to a general medical condition (*secondary mood disorders)*

- Characteristics:
  - prominent mood alteration (depressed, elevated, expansive, or irritable) thought to be the direct physiological effect of a specific medical illness or agent.

- Epidemiology
  - Depressive disorders :
    - 50 % of all poststroke patients
    - 50 % of all individuals with pancreatic cancer
    - 40 % of patients with Parkinson's disease
    - other: Huntington's disease, human immunodeficiency virus (HIV) infections, multiple sclerosis (MS).
  - Secondary mania: MS.
  - Depressive disorders associated with terminal or painful conditions - the greatest risk of suicide.

Mood disorder due to a general medical condition (*secondary mood disorders)*

- Course and prognosis
  - depend on the course of the underlying medical state
  - prognosis is best when etiological medical illnesses or medications are most susceptible to correction (e.g., treatment of hypothyroidism, cessation of alcohol use)
  - when such intervention is not possible or fails to lead to prompt remission of mood symptoms - formal psychiatric treatment is indicated.

- Treatment
  - standard antidepressant medications,
  - ECT - in patients who do not respond to medication.
  - psychotherapy - psychoeducational issues.

Psychotic disorder due to a general medical condition

- Characteristics
  - Disorders are not associated with changes in the sensorium,
  - Exclusion of syndromes in which psychotic symptoms may be present in association with cognitive impairment (e.g., delirium, dementia of the Alzheimer's type)
- Epidemiology
  - The incidence and prevalence of secondary psychotic disordes in the general population are unknown (the prevalence is increased in selected clinical populations, such as nursing home residents)
  - 40% of individuals with temporal lobe epilepsy experience psychosis.
- Etiology
  - any cerebral or systemic disease that affect brain function can produce psychotic symptoms!

Psychotic disorder due to a general medical condition

- Course and prognosis
  - The course of the underlying medical illness or substance use commonly dictates the course of psychosis due to a general medical condition - with several exceptions..
  - Psychosis caused by certain medications (e.g., immunosuppresants) - may subside even when use of those medications is continued
  - Degenerative brain disorders (e.g., Parkinsori's disease) - episodic lapses into psychosis, even as the underlying medical condition advances.
  - If abuse of substances persists over a lengthy period, psychosis (e.g., hallucinations from alcohol) may fail to remit even during extended intervals of abstinence.

- Treatment
  - Treatment of the underlying cause.
  - Symptomatic treatment with antipsychotic medication

Anxiety disorder due to a general medical condition

- Characteristics
  - anxiety that causes clinically significant distress or impairment in functioning
  - direct physiological, not emotional, consequence of a general medical condition

- Epidemiology
  - medically ill individuals have higher rates of anxiety disorder than do the general population.
  - Prevalence of most anxiety disorders is higher in women than in men
  - Rates of panic and generalized anxiety are especially high in neurological, endocrine, and cardiology patients
  - 1/3 of patients with hypothyroidism and 2/3 of patients with hyperthyroidism may experience anxiety symptoms.
  - 40% of patients with Parkinson 's disease have anxiety disorders.

Anxiety disorder due to a general medical condition

- Etiology
  - substance-related states (intoxication with caffeine, cocaine, amphetamines, and other sympathomimetic agents; withdrawal from nicotine, sedative-hypnotics and alcohol),
  - endocrinopathies (pheochromocytoma, hyperthyroidism, hypercortisolemic states, and hyperparathyroidism),
  - metabolic derangements (e.g., hypoxemia, hypercalcemia, and hypoglycemia),
  - neurological disorders (vascular, trauma, and degenerative type)
  - mitral valve prolapse-related panic attacks
  - pathology in the basal ganglia - associated with obsessive-compulsive symptoms

Anxiety disorder due to a general medical condition

- Course and prognosis
  - Fluctuations in relation to the course of the provoking factor.
  - Treatment/correction of medical conditions responsive to treatment -> relief of anxiety symptoms (e.g., correction of hypothyroidism and reduction in caffeine consumption),
  - Chronic, incurable medical conditions associated with persistent physiological insult or recurrent relapse to substance use -> refractoriness of associated anxiety symptoms. (e.g., chronic obstructive pulmonary disease)
  - ln medication-induced anxiety, if complete cessation of the offending factor (e.g., immunosuppressant therapy) is not possible -> dose reduction often brings substantial relief.

- Treatment
  - treating the underlying causes
  - benzodiazepines
  - supportive psychotherapy
  - specific therapies (e.g., antidepressants, behavior therapy) - unknown efficacy

Sleep disorder due to a general medical condition

- The diagnosis of a secondary sleep disorder hinges on the identification of an active disease process known to exert the observed effect on sleep.

- Treatment
  - underlying neurological or medical disease
  - Symptomatic treatment - behavior modification
  - Pharmacological treatment:
    - benzodiazepines - restless legs syndrome, nocturnal myoclonus,
    - stimulants - hypersomnia
    - tricyclic antidepressant medications - manipulation of rapid eye movernent (REM) sleep.

Sexual dysfunction due to a general medical condition

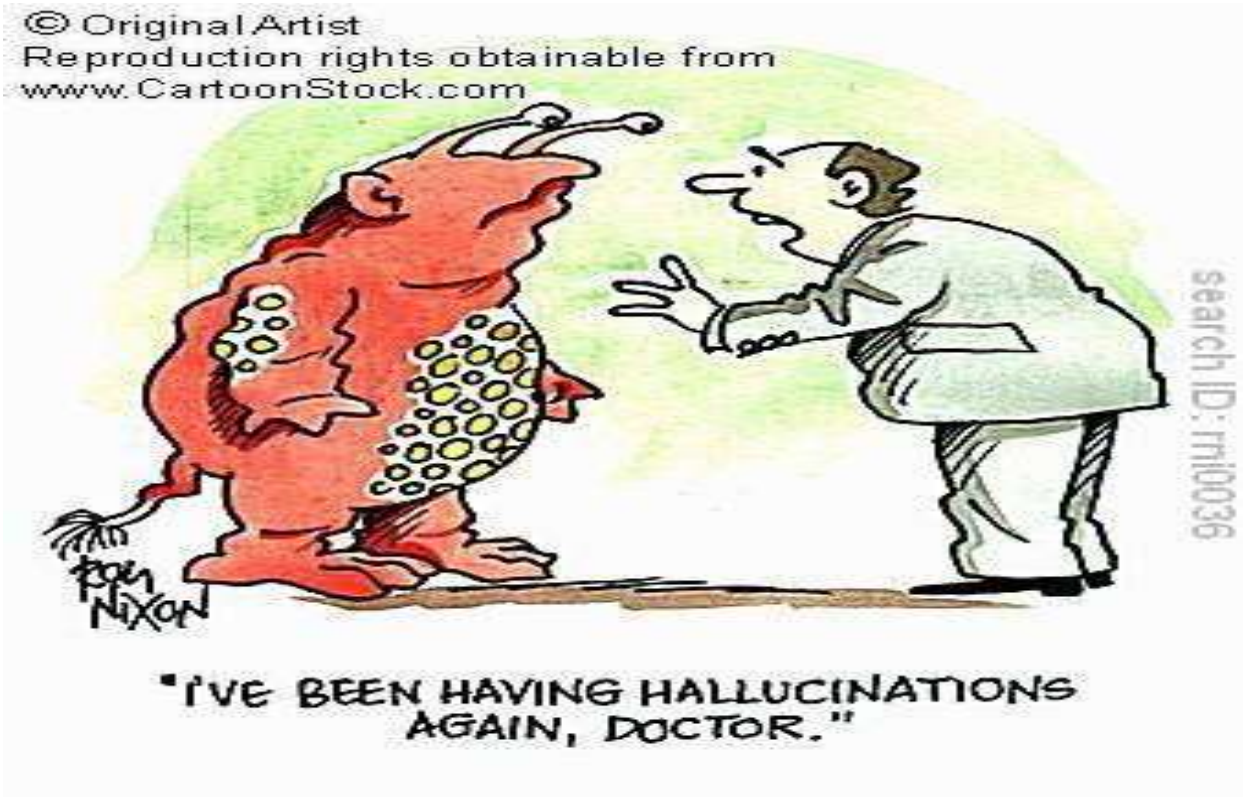
- Characteristics
  - multiple forms of medically induced sexual disturbance, including erectile dysfunction, pain during sexual intercourse, low sexual desire, and orgasmic disorders.
- Epidemiology
  - High rates of sexual dysfunction are described in patients with cardiac condition, cancer, diabetes and HIV.
- Etiology
  - medications and drugs of abuse,
  - local disease proces that affect the primary or secondary sexual organs,
  - systemic illnesses that affect sexual organs via neurological, vascular, endocrinological routes.

Sexual dysfunction due to a general medical condition

- Course and prognosis
  - Depending on the cause
  - Drug-induced syndromes remit with discontinuation (or dose reduction) of the offending agent.
  - Endocrine-based dysfunctions impr ove with restoration of normal physiology
  - Dysfunctions caused by neurological disease can run protracted or progressive course

- Treatment
  - depending on the etiology
  - reversal of the underlying cause
  - supportive and behaviorally oriented psychotherapy
  - symptom-based treatments

DELIRIUM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"I'VE BEEN HAVING HALLUCINATIONS AGAIN, DOCTOR."

Delirium - definition

- *„ Delirium is a specific state of acute confusion attributable to the direct physiological consequence of a medical condition, effects of a psychoactive substance, or multiple causes, which usually develops over the course of hours to days "*

Delirium - etiology

- Systemic diseases
  (e.g. circulatory/respiratory/renal/hepatic failure)
- Central nervous system diseases
  (e.g. epileptic seizures, tumors, brain injuries)
- Intoxication or withdrawal from pharmacological or toxic agents
  (e.g. alcohol or benzodiazepine withdrawal)
- Other - not otherwise specified delirium

Delirium - DSM-V - diagnostic criteria

A. A disturbance in attention (i.e., reduced ability to direct, focus, sustain, and shift atten tion) and awareness (reduced orientation to the environment).

B. The disturbance develops over a short period of time (usually hours to a few days), represents a change from baseline attention and awareness, and tends to fluctuate in severity during the course of a day.

C. An additional disturbance in cognition (e.g., memory deficit, disorientation, language, visuospatial ability, or perception).

Delirium - DSM-V - diagnostic criteria

- D. The disturbances in Criteria A and C are not better explained by another preexisting, established, or evolving neurocognitive disorder and do not occur in the context of a severely reduced level of arousal, such as coma.
- E. There is evidence from the history, physical examination, or laboratory findings that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal (i.e., due to a drug of abuse or to a medication), or exposure to a toxin, or is due to multiple etiologies.

Delirium - risk factors

Predisposing factors	Precipitating factors
Sensory impairment	Urinary tract infection
Older age (>80) or very young age	Pulmonary infection
Dementia (esp. severe) or preexisting brain damage	Surgical procedures
Alcohol or drug dependence	Electrolyte imbalance
Dehydration, malnutrition, cachexia	Hypoxia
Significant burden of somatic disorders	Anaemia
Immobilization, institutionalization	Shock
History of delirium	Pain
Male gender	ICU admission

Medical Conditions That Often Precede Delirium

Disorders of the central nervous system	Head injury, seizures, postseizure states, diseases of the blood vessels, degenerative diseases
Disorders of metabolism	Kidney failure, liver failure, anemia, low blood sugar, vitamin B_1 deficiency, hormone imbalance, fluid and electrolyte imbalance, acid-base imbalance
Disorders of the heart and lungs	Congestive heart failure, cardiac arrhythmias (abnormal heartbeat rhythms), shock, respiratory (breathing) failure
General illnesses	Substance intoxication/withdrawal, infection, tumor, severe trauma, high fever, period after major operation

Substances That Can Cause Delirium Due to Intoxication or Withdrawal

Drugs of abuse	Alcohol, amphetamines, cocaine, hallucinogens, inhalants, opioids, phencyclidine (PCP), sedatives, hypnotics, other substances
Medications	General anesthetics, analgesics, anti-asthmatic agents, anticonvulsants, antihistamines, anti-hypertensive (anti–high-blood pressure) and cardiovascular (heart) medications, anti-microbials, antiparkinsonian medications, corticosteroids, gastrointestinal medications, muscle relaxants, immunosuppressive agents, lithium, psychotropic medications with anti-cholinergic properties
Toxins	Cholinesterase inhibitors, organophosphate insecticides, carbon monoxide, carbon dioxide, volatile substances such as fuel or organic solvents or glue

Drugs with significant anticholinergic properties

- OTC: NSAIDs, H_2-blockers, antihistaminics, pseudoephedrine, codeine
- Opiates (including tramadol)
- Metoclopramide
- Some cardiovascular drugs (captopril, furosemide, hydrochlorothiazide, digoxin, teophylline)
- Atropine-like spasmolytics
- Steroids
- Benzodiazepines (diazepam, lorazepam)
- Some chemiotherapeutics (clindamycine, gentamycine, chinolones)
- Neuroleptics
- Antiparkinsonian agents

Delirium - epidemiology

- 0,4% for people > 18 years
- 1,1% for people > 55 years
- 10-30% of hospitalized patients (30-40%>65 y)
- 30% of surgical or cardiac intensive care units patients
- 40-50% of patients recovering from surgery for hip fractures
- 80% of terminally ill patients
- 90% of postcardiotomy patients

Delirium - symptomatology (core features)

- **Clouding of Consciousness**
  - reduced clarity of awareness of the environment
  - disorientation as to time, place, sometimes - to person
  - confusion - inability to think with customary clarity and coherence
- **Inattention**
  - reduced ability to focus, sustain or shift attention
  - may account for all other cognitive deficits
  - external stimuli interfere with cognitive processes
  - impaired registration of new information ➔ disorientation, memory deficits
- **Impaired cognition**
  - memory deficits, disorientation, language disturbances
  - Misidentifications
  - partial / complete amnesia of the illness period

Delirium - symptomatology (course)

- **Rapid onset**
  - usually hours-to-days, may be abrupt
- **Fluctuations in severity**
  - symptoms may be intermittent, recurrent
  - usually worse at night
  - during „lucid intervals" patient may function at a normal level
- **Relatively brief duration**

Delirium - symptomatology (associated clinical features)

- **Disorders of sleep & wakefulness**
  - fragmentation / reduction of sleep
  - wake from vivid dreams / nightmares in a disoriented / agitated state
  - somnolent, „dreamlike" daytime experiences
  - trouble distinguishing dreams from real perceptions

Delirium - symptomatology (associated clinical features)

- **Disorders of thought**
  - prominent abnormalities in the form & content
  - impaired organization / utilization of information
  - illogical, bizarre thinking
  - unable to make appropriate decisions, perform simple tasks, maintain self-care
  - poor insight & judgement
  - content of thought impoverished & stereotyped OR full of rich imagery & fantasies
  - delusions of persecution

Delirium - symptomatology (associated clinical features)

- **Perceptual disturbances**
  - distortions, illusions
  - visual hallucinations (!) (often only at night)
  - auditory hallucinations
  - tactile hallucinations less common
  - „scenic hallucinations"
  - patients perceive their hallucinations as real, respond in ways that may be disturbing or even life-threatening to others

Delirium - symptomatology (associated clinical features)

- **Psychomotor disturbances**
  - hyperactive („wild man!") [15-20 %]
  - hypoactive („pleasantly confused") [30-45 %]
  - mixed delirium with reversal of day-night cycle (sundowning) [40-50 %]
  - behavioral problems may be dangerous !
  - agitation - risk of hip fracture / cardiovascular collapse
  - homicidal / suicidal behavior secondary to delusions / hallucinations
  - hypoactive patients - risk for dehydration, malnourishment, decubitus ulcers

- **Emotional disturbance**

- fear / anxiety / depression - very common !

Delirium - diagnosis

- **Un-/misdiagnosed in 32-67 % of cases**
  - 25-75 % of patients with delirium have dementia !
    - presence of dementia increases the risk of delirium fivefold
  - 40 % of delirium cases are diagnosed as depressive disorders !

- **Differential diagnosis (4D)**
  - **D**ementia
  - **D**epression
  - **D**rugs
  - Psychosis (**D**ellusions)

Delirium - physical & laboratory examinations

- Interview
  - Cinical features (e.g. onset, duration)
  - Physical illness and drugs
  - Alcohol or other substance dependence/intoxication
  - Head trauma/seizures
  - Other risk factors

Delirium - physical & laboratory examinations

- Standard general tests
  - Complete blood cell count
  - Erythrocyte sedimentation rate
  - Electrolytes
  - Glucose
  - Urea, creatynine
  - Liver function tests
  - Toxicological tests
  - Urinalysis
- Ancillary tests - indicated by the clinical situation

Delirium - physical & laboratory examinations

- Imaging examination
  - Chest X-ray
  - Head CT/IMR

- EEG
  - Generalized slowing of activity
  - Sometimes - focal areas of hyperactivity

- ECG

Delirium versus Dementia- differential diagnosis

Delirium	Dementia
• Onset: sudden • Course: dynamic • Duration: days, weeks • Cognitive impairment: fluctuations • Consciousness: episodes of decreased consciousness • Thinking: dezorganised • Halucinations: mostly visual, often scenic • Propulsion: changing • Prognosis: often reversible	• Onset: insidious • Course: chronic • Duration: months, years • Cognitive impairment: more stable over time • Consciousness: alert • Thinking: straitened • Halucinations: less often, mainly in the evenings • Propulsion: proper • Prognosis: usuallly irreversible

Delirium - pathogenesis

- Obscure
- Multiple mechanisms ?
  - reversible impairment of cerebral oxidative metabolism
  - failure of cholinergic transmission
  - CNS effects of lymphokines
  - multiple neurotransmitter abnormalities (ACh, 5-HT, DA, GABA)

Delirium - management

- Safety of the involved parties (patient, staff) is a top priority!
- Diagnosing delirium is the 1st step to treating it !
- Identification of all the factors:
  - predisposing
  - triggering / precipitating
  - sustaining delirium
- Treating underlying cause !

Delirium - practical issues

- Differential diagnosis
  - consider possibility of alcohol/sedative drug withdrawal
- Medication review
  - look at ALL prescriptions (including OTC)
  - ask if anything has been added, changed, or stopped
  - particularly harmful - medications with anticholinergic properties (synergism!)

Delirium - treatment

- Diagnosis & treatment of predisposing/precipitating conditions
- Reduction or discontinuation of medications whenever possible
- Prompt treatment of physical illness
- Supportive care
  - attention to oral intake, mobility, psychosocial needs
  - prevention of aspiration, falls, decubitus ulcers
- Nonpharmacologic measures
- Pharmacologic measures

TABLE 7

Environmental Interventions in Treating Patients with Delirium

Provide support and orientation

Communicate clearly and concisely; give repeated verbal reminders of the day, time, location, and identity of key persons, such as members of the treatment team and relatives.

Provide clear signposts to patient's location, including a clock, calendar, and chart with the day's schedule.

Place familiar objects from patient's home in the room.

Ensure consistency in staff (e.g., a key nurse).

Use television or radio for relaxation and to help the patient maintain contact with the outside world.

Involve family members and caregivers to encourage feelings of security and orientation.

Provide an unambiguous environment

Simplify care area by removing unnecessary objects; allow adequate space between beds.

Consider using private room to aid rest and avoid extremes of sensory experience.

Avoid using medical jargon in patient's presence because it may encourage paranoia.

Ensure that lighting is adequate; provide a 40- to 60-watt night light to reduce misperceptions.

Control sources of excess noise (e.g., staff, equipment, visitors); aim for fewer than 45 dB during the day and fewer than 20 dB during the night.

Maintain room temperature between 21.1°C (69.98°F) and 23.8°C (74.8°F)

Maintaining competency

Identify and correct sensory impairments; ensure patients have their glasses, hearing aids, and dentures. Consider whether interpreter is needed.

Encourage self-care and participation in treatment (e.g., ask patient for feedback on pain).

Arrange treatments to allow maximum periods of uninterrupted sleep.

Maintain activity levels: ambulatory patients should walk three times daily; nonambulatory patients should undergo full range of movement exercise for 15 minutes three times daily.

Delirium - pharmacological treatment

- Goals:
  - calm the patient sufficiently to conduct the necessary evaluation and treatment
  - stop dangerous or potentially dangerous behavior
  - reverse psychotic signs and symptoms

- Antipsychotics in the lowest possible doses for the shortest possible time
- Medication doses several times lower than in primary mental disorders in younger patients

Delirium - treatment

- Pharmacotherapy:
  - Anticholinergic toxicity - physostigmine salicylate (Antilirium) : 1-2 mg i.v. or i.m.
  - Psychosis - haloperidol (Haldol) : 2-6 mg i.m. or p.o.
  - Limited clinical experience with second-generation antipsychotics (Risperidone, Olanzapine)
  - Insomnia /agitation- short half-lives benzodiazepines (e.g. Lorazepam 1-2mg)
  - Alcohol withdrawal delirium - long half-lives benzodiazepines (e.g. Diazepam)

Delirium - course and prognosis

- Symptoms duration - as long as the causative factors are present (~less than a week)
- Symptoms recession - 3-7 days after removal of the causative factors
- Symptoms recall - spotty, vague

- *,,(.)the older the patient and the longer patient has been delirious, the longer the delirium takes to resolve"*

Revision

- What are three main clinical features of delirium?

- What symptoms may precede delirium development?

Revision

- What are the most common etiological factors of delirium?

- What kind of substances may cause delirium?

Revision

- What are the most common risk factors of delirium?

- Which groups of hospitalized patients are especially predisposed to develop delirium?

Revision

- What questions should be asked when diagnosing delirium?

- How can we assess the orientation of the patient?

Revision

- How alcohol withdrawal delirium should be treated?

- How delirium in the postcardiotomy patients should be treated?

Major Neurocognitive Disorder

- DIAGNOSTIC CRITERIA

- A. Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition) based on: 1. Concern of the individual, a knowledgeable informant, or the clinician that there has been a significant decline in cognitive function; and 2. A substantial impairment in cognitive performance, preferably documented by standardized neuropsychological testing or, in its absence, another quantified clinical assessment.
- B. The cognitive deficits interfere with independence in everyday activities (i.e., at a minimum, requiring assistance with complex instrumental activities of daily living such as paying bills or managing medications).
- C. The cognitive deficits do not occur exclusively in the context of a delirium.
- D. The cognitive deficits are not better explained by another mental disorder (e.g., major depressive disorder, schizophrenia).

Mild Neurocognitive Disorder

- A. Evidence of modest cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual motor, or social cognition) based on: 1. Concern of the individual, a knowledgeable informant, or the clinician that there has been a mild decline in cognitive function; and 2. A modest impairment in cognitive performance, preferably documented by stan dardized neuropsychological testing or, in its absence, another quantified clinical assessment.
- B. The cognitive deficits do not interfere with capacity for independence in everyday activities (i.e., complex instrumental activities of daily living such as paying bills or managing medications are preserved, but greater effort, compensatory strategies, or accommodation may be required).
- C. The cognitive deficits do not occur exclusively in the context of a delirium.
- D. The cognitive deficits are not better explained by another mental disorder (e.g., major depressive disorder, schizophrenia).