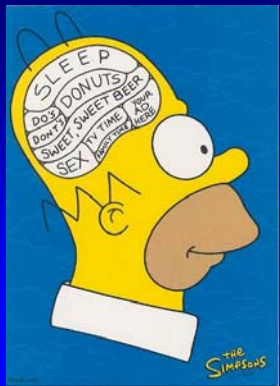


Brief Informal Cognitive Assessment for Correctional Providers

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1

Brain Functions



2

Objectives

- Discuss importance of screening for cognitive impairment, particularly in Alaska
- Briefly outline some common cognitive disorders: Dementia; TBI; FASD
- Describe informal brief cognitive assessment techniques/methods
- What to do when you suspect impairment: Discussion of Neuropsychology's unique contributions to mental health/medical/forensic field

3

Why Screen for Cognitive Impairment?

- High prevalence of conditions that cause cognitive impairment (e.g., dementia, TBI, FASD)
Approximately 20-40% of population over age 70 have dementia
MTBI is described as “silent epidemic”
Alaska has the highest rate of TBI & FASD (7 & 12X the lower 48 rate)

4

Why Screen for Cognitive Impairment?

- High incidence of undiagnosed cognitive disorder
Dementia was missed in 67% of all affected patients; 91% of cases with mild dementia; 71% of moderate dementia; 20% of severe dementia
TBI was missed in 60% of individuals admitted to trauma intensive care unit
Clinicians should suspect MTBI in any patient sustaining multi-systemic trauma
FASD typically not diagnosed in school district; not included in DSM-IV

5

Why Screen for Cognitive Impairment?

- Undiagnosed dementia, FASD, and TBI patients often face avoidable social, occupation, financial, and medical problems:
Additional TBI
Employment termination
Eviction/homelessness
MVAs
Unnecessary debt due to poor financial decisions
House/cooking fire

6

Why Screen for Cognitive Impairment?

Unnecessary hospitalization
Victimization by others
Wandering/disorientation resulting in exposure or death
Family/caregiver stress
Psychiatric disorder
Substance abuse
Repeated arrest/incarceration
Inability to access requisite services (SSDI, Medicaid)

7

Why Screen for Cognitive Impairment?

- In the legal system, undiagnosed cognitive dysfunction in the legal system can result in:
 - Increased recidivism
 - Involuntary non-compliance with probation due to cognitive dysfunction
 - Inability to participate in defense/Competency to proceed issues
 - Affects decision-making capacity to engage in legal proceedings
 - Targeting/victimization during incarceration
 - Treatments/therapies that are inappropriate for the patient result in squandered resources

8

Dementia

- The word is derived from Latin; “de” meaning away or from and “mens” meaning mind or brain, thus de + mens **to be away from/out of your mind**
- Dementia refers to a deterioration in mental capacities beyond normal aging. It is both a behavioral syndrome and a diagnostic classification

9

DSM-IV Dementia Criteria

- Development of multiple cognitive deficits manifested by both
 - **memory impairment** (impaired ability to learn new information or recall previously learned information), and

10

DSM-IV Dementia Criteria

- one (or more of the following cognitive disturbances:
- aphasia (language disturbance)
 - apraxia (impaired ability to carry out motor activities)
 - agnosia (failure to recognize or identify objects)
 - disturbance in executive functioning (i.e., planning, organization, sequencing, abstraction)
- A diagnosis of dementia should not be made if deficits occur exclusively during the course of a delirium, however, both may be present

11

Dementia Demographics/ Epidemiology

- 12% of population is over age 65
- 85 years and older is fastest growing group (700% increase predicted by 2050)
- Mean Lifespan: 45 yrs. in 1900; 78 yrs. 2000
- Dementia prevalence rates of: age >65, 5-8%; age >75, 15-20%; age >85, 25-50%

12

Alzheimer's Disease

- **Prevalence:** 50% (or more) of all cases of dementia
- **Risk factors:** advanced age; family history of AD, Parkinson's disease or Down's syndrome; genetic factors (e.g. APOE4), history of TBI
- **Onset and course:** insidious onset, progressive deterioration. Early onset is associated with genetic causes and more rapid course

13

Alzheimer's—Atrophy



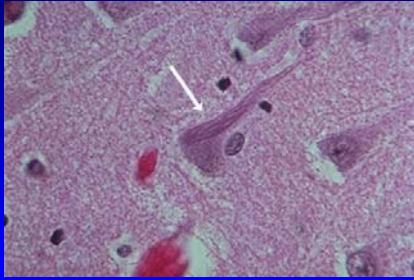
14

Alzheimer's—Atrophy



15

Alzheimer's—Neurofibrillary Tangle



16

Alzheimer's Disease

- **Neuropsychological features:** Early features include deficits in memory, rapid forgetting of new information, recall and recognition deficits, and executive dysfunction. As the disease progresses, there is global deterioration
- **Behavioral features:** Early features may include decreased energy, social withdrawal, indifference, and impulsivity; Insight is usually limited, with few complaints of cognitive dysfunction

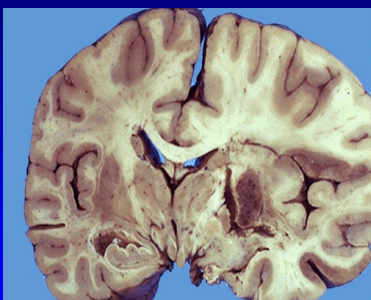
17

Cerebrovascular Dementia

- **Prevalence:** 15% 25% of all cases of dementia
- **Risk factors:** stroke, smoking, obesity, alcoholism, hypertension, diabetes
- **Onset and course:** onset typically earlier than AD, but varies depending upon type of stroke (e.g., abrupt decrease following large infarct, insidious in small vessel disease)

18

Acute Infarct



19

MCA Infarct



20

Cerebrovascular Dementia

- **Neuropsychological features:** focal or multifocal deficits that correspond to the location of the infarcts
- **Behavioral features:** Compared to AD, patient with CVD more likely to display depression, affective lability, focal neurological signs, pseudobulbar palsy, gait disturbance, fluctuating course, and nocturnal confusion

21

Alcohol-Induced Persisting Dementia

- **Prevalence:** 6-25% of elderly alcoholics
- **Risk factors:** history of alcohol dependence
- **Onset and course:** typically 10 years younger than other dementias, insidious onset. However, with thiamine deficiency induced Wernicke's Korsakoff's syndrome, patient presents in acute confusional state with ataxic gait, nystagmus, and ophthalmoplegia, which resolve in 3-4 weeks with administration of thiamine, but memory deficit often persists

22

Alcohol-Induced Persisting Dementia

- **Neuropsychological features:** confabulation in both; in Korsakoff's, severe anterograde and retrograde amnesia, but general intellectual and language functioning preserved; in Alcohol-induced dementia widespread cognitive dysfunction but intact language abilities with frequent confabulation.

23

Definition of Delirium

- Delirium is derived from Latin; "de" meaning away or from, "lira" meaning a track in the fields, thus, de + lira = **to be off track**
- DSM-IV definition includes:
 - Disturbance of consciousness (i.e., reduced clarity of awareness of environment), with reduced ability to focus sustain, or shift attention
 - A change in cognition (e.g., memory deficit, disorientation, language, or perceptual disturbance) that is not better accounted for by a preexisting, established, or evolving dementia

24

Definition of Delirium

Disturbance develops over a short period of time (usually hours or days) and fluctuates during the course of the day

There is evidence from the history, physical examination, or laboratory findings of a general medical condition judged to be etiologically related to the disturbance

25

Common Etiologies of Delirium

- **Metabolic:** electrolyte imbalance (sodium, potassium, calcium, magnesium, glucose), nutritional imbalance (thiamine, folic acid, B12, niacin), liver failure (hepatic encephalopathy)
- **Infectious:** Urinary tract infection, pneumonia, sepsis, syphilis/HIV with CNS involvement, cryptococcal with CNS involvement
- **Endocrine:** Hypo/ hyperthyroidism, panhypopituitarism, high-dose glucocorticosteroid therapy
- **Chemical poisons:** heavy metals (lead, mercury), aniline dyes

26

Common Etiologies of Delirium

- **Drug intoxication:** alcohol, barbiturates, opiates,
- **Medications:** steroids, antihypertensives, OTC cold medications, various psychotropic medications with anticholinergic effects (Cogentin, Artane, Thorazine, Mellaril, TCAs, Paxil, antihistamines, benzodiazepines, lithium, Haloperidol)

27

Common Etiologies of Delirium

- **CNS issues:** alcohol withdrawal (delirium tremens), barbiturate/benzodiazepine withdrawal (rarely), postictal (seizure), increased intracranial pressure from tumor, head trauma, encephalitis, meningitis, vasculitis, chemotherapy, immunotherapy

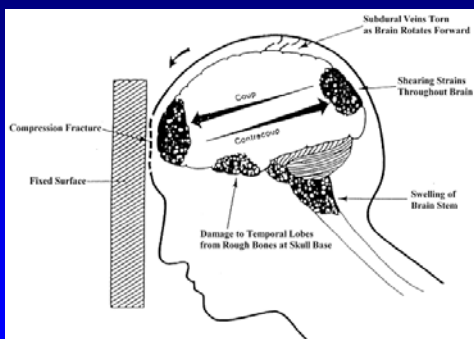
28

Definition of TBI

- Traumatic brain injury (TBI) is an insult to the brain from an external mechanical force, possibly leading to permanent or temporary impairments of cognitive, physical, and psychosocial functions with an associated diminished or altered state of consciousness
- A traumatic brain injury occurs when an outside force impacts the head hard enough to cause the skull to break and directly hurts the brain, or when the rapid acceleration and deceleration of the head can force the brain to move back and forth across the inside of the skull and cause damage to brain tissue/axonal stretching.

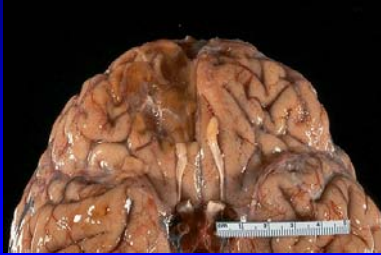
29

Coup/Contrecoup



30

TBI—Right Inferior Frontal Lobe



31

TBI—Left Temporal Hematoma on CT



32

Mild TBI defined by the American Congress of Rehabilitation Medicine

Mild head injury is defined as "a traumatically induced physiologic disruption of brain function," as manifested by one of the following:

- Any period of loss of consciousness (LOC), which is a brief coma
- Any loss of memory for events immediately before or after the accident
- Any alteration in mental state at the time of the accident
- Focal neurologic deficits, which may or may not be transient

33

TBI: National Epidemiology

- Most patients with mild TBI do not present to the hospital and are therefore unaccounted; 40% of severe TBI die and are not counted
- 1.74 million persons sustain mild TBI annually requiring a physician visit or temporary disability of at least 1 day, which is 8 times the number of people diagnosed with breast cancer and 34 times the number of new cases of HIV/AIDS each year

34

TBI: National Epidemiology

- Most patients with TBI (75-80%) have mild head injuries; the remaining injuries are divided equally between the moderate and severe categories
- Almost 100% of persons with severe head injury and as many as two thirds of those with moderate head injury will be permanently disabled
- In the United States, with a population of almost 300 million, approximately 600,000 new TBIs occur per year.

35

TBI: Alaska Epidemiology & Related Data

- Alaskan males are twice as likely to suffer TBI than females
- Alaskan Natives had nearly three times the rate of TBI (214.3/100,000 than the next highest ethnic group, Caucasians (82.3/100,000)
- Alaskans age 15-24 have the highest rate of TBI
- 69% of Alaskans with TBI from ATV/snowmachine were not wearing a helmet
- 56% of Alaskans with TBI resulting from car, van, or truck crashes were not wearing seatbelts

36

Psychiatric Sequelae of Head Injury

Personality Changes: Approximately 2/3 of patients with moderate/severe TBI continue to demonstrate personality changes 10 years post-trauma

- Alterations of personality following moderate/severe CHI typically reflect damage to the frontal lobes

Psychiatric disorders are more common in patients with moderate/severe head injuries. Some of the more frequent disorders include mania, paranoia, psychosis with predominantly negative symptoms (e.g., flattened affect, suspiciousness, social withdrawal), and depression with or without anxiety

37

Psychiatric Sequelae of Head Injury

Frontal lobe personality changes

- **Disinhibited:** Excitability manifested as impulsivity, emotional lability and mood swings, socially inappropriate behaviors, and childishness
- **Dysexecutive:** Symptoms of reduced activation including apathy, decreased spontaneity or abulia, lack of interest, emotional blunting

38

Fetal Alcohol Spectrum Disorder (FASD)

- A pattern of birth defects occurring as a result of excessive alcohol consumption by the mother during pregnancy and characterized by growth retardation, cranial, facial, or neural abnormalities, and developmental disabilities.
- Alcohol is now recognized as the leading teratogen (poison) to which the fetus is likely to be exposed.

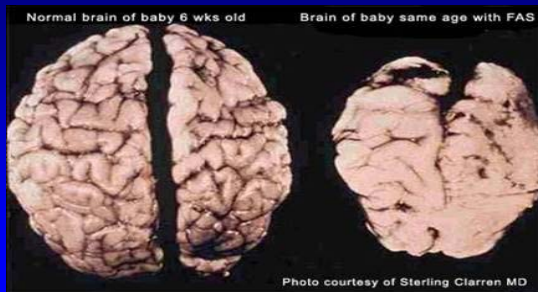
39

Four primary diagnostic criteria indicate fetal alcohol syndrome:

- **Growth deficiencies** with stunted prenatal and/or postnatal growth
- **Permanent brain damage** resulting in neurological abnormalities, delay in development, intellectual impairment and learning/behavior disabilities
- **Abnormal facial features** including short eye opening, short nose, flat midface, thin upper lip and small chin
- **Documented maternal alcohol use during pregnancy**- The window of exposure for alcohol is the entire 9 months of pregnancy

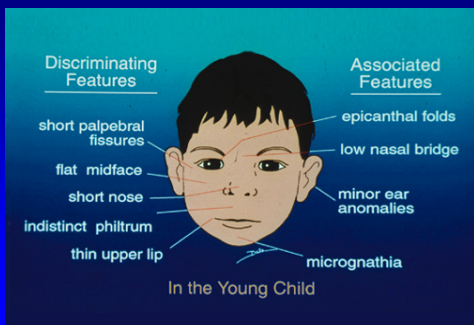
40

Fetal Alcohol Spectrum Disorder



41

Fetal Alcohol Spectrum Disorder: Facial Malformations



42

Other symptoms of FASD can include:

- Low birth weight
- Impaired growth before and after birth
- Facial malformations
- Small head size
- Learning disabilities and lower IQ
- Hyperactivity and the inability to pay attention
- Sleeping problems
- Organ damage/birth defect

43

Alaskan FASD epidemiology

- Alaska has the highest rate of FAS among the five FASSNet states
- Alaska Natives have a FAS prevalence rate of 4.8 per 1,000 live births, which is twelve times higher than rates of any other state
- The costs for one child with FAS are estimated to be \$2 million over his or her lifetime

44

Study of individuals with FASD documented the following mental/social/legal problems:

- Mental health problems (95%)
- Problems with employment (90%)
- Inability to live independently (82%)
- Alcohol and drug problems (>50% of male subjects, 70% of female subjects)
- Criminal arrest (60%)
- Confinement in prison, a drug or alcohol treatment center, or a mental institution (55%)
- Criminal sexual behavior (52%)

45

Overlay Between Cognitive Dysfunction and Antisocial Personality Disorder

DSM-IV diagnosis of **Antisocial Personality Disorder**: A pervasive pattern of the following:

- Failure to conform to social norms/laws*
- Deceitfulness
- Impulsivity/failure to plan ahead*
- Reckless disregard for safety of self/others*
- Consistent irresponsibility with work/family/social/financial obligations*
- Lack of remorse*

Key differentiator from cognitive impairment: goal-directed behavior

46

Brief Multimodal Methods of Assessment of Cognitive Dysfunction

- Review of medical chart/computerized record review
- Clinical Interview/Contact
- Behavioral Observations
- Informal Assessment Methods

47

Medical/Electronic Chart Items for Review:

- Recent Outpatient visits
- ER visits
- Medical consultation summaries (EEG, psychiatric evaluations)
- Neurology Notes
- If suspected FASD/LD, review prenatal records in first volume of peds chart
- Look for pattern of missed appointments
- Diagnosis of Psychiatric Disorder

48

**Medical/Electronic Chart
Items for Review:**

- Evidence for developmental disability, birth defects, diabetes, learning disability, placement at state hospitals/ residential facilities
- Surgery history (TBI, CVA)
- Previous hospitalizations
- Medications with sedating effects
- CT/MRI/EEG reports
- Active and inactive medical problems that can contribute or serve as markers for dysfunction (liver disease/cirrhosis, substance abuse, diabetes, thyroid, kidney dysfunction, electrolyte imbalance, seizures)

49

**Cognitive Dysfunction “Red Flags”
from Chart/Interview Information**

- Developmental delay
- Developmental delay of sibling (FASD)
- Maternal alcoholism/drug abuse
- Childhood behavioral disorder
- Significant childhood illness/TBI
- Special education
- Special Needs registry

50

Cognitive Dysfunction “Red Flags”

- Seizure disorder
- Repetition of grade
- Suspension/expulsion
- Juvenile incarceration/probation
- Adult TBI/Stroke
- Repeated incarceration/probation violation
- Inability to maintain employment despite desire
- Pattern of multiple (>5) births

51

Cognitive Dysfunction “Red Flags”

- Persistent financial mismanagement
- Pattern of being victimized (e.g., financial, sexual)
- Non-compliance with medications/medical care despite desire
- Inability to maintain appointments despite desire
- Found by others disoriented/lost
- Homelessness
- Inability to get driver’s license despite desire

52

Cognitive Dysfunction “Red Flags”

- Inhalant abuse
- Alcohol/substance dependence
- Guardianship/rep payee/case manager
- Suicide attempt (i.e., overdose, hanging)
- SSDI
- DVR
- DFYS/OCS involvement with children
- APS
- Illiteracy/acalculia

53

Questions During Contacts/Interview:

- Their brief description of present illness (problem began, course [better, worse, same], behavioral change/functional decline and resulting impact on social, emotional, vocational, educational functioning), paying particular attention to psychosocial stressors or medical events at time of onset

54

Questions for Clinical Contacts/Interview:

- When querying about attention/concentration, language, memory, visuospatial, executive, ask for specific behavioral examples of each type of dysfunction (i.e., have them compare current ability now to their ability prior to the onset of the problem and have them tell you what they can no longer do)
- Compare the patient's report with observable behaviors during interview, known recent behaviors, medical records information, and caregiver's report--look for consistency

55

Behavioral Indicators of Cognitive Dysfunction

- **Appearance:** age appropriate; facial asymmetry; scarring; facial dysmorphology; growth delay; gaunt/malnutrition
- **Clothing:** disheveled; inappropriate
- **Hygiene:** skin; fingernails; hair; beard; clothing; body odor
- **Sensorimotor:** strabismus/nystagmus; wide based gait; audition; coordination; paralysis/weakness; tremor
- **Orientation:** person; place; day/date/year; situation

56

Behavioral Indicators of Cognitive Dysfunction

- **Arousal:** obtunded; drowsy/lethargic
- **Attention:** distractible
- **Speech:** slowed rate; halting; inappropriate volume; hyperverbal; limited vocabulary; agrammatical sentences; circumlocution; loss of train of thought; slurring; word-finding problems; paraphasias
- **Comprehension:** cannot understand; frequent repetition of questions required

57

Behavioral Indicators of Cognitive Dysfunction

- **Psychomotor:** slowing; agitation
- **Mood:** labile; euphoric; paranoid; detached
- **Affect:** blunted; constricted
- **Attitude toward legal professional**
- **Thought processes:** delusional; grandiose; paranoid; racing thoughts; illogical; concrete; tangential; loose association; incoherent

58

Questions for Clinical Contacts/Interview:

- Involve primary caregiver/family member to get their account of problems, whenever possible
- Ask about ADLs or Instrumental Activities of Daily Living (IADLs): ability to use telephone, shopping, food preparation, housekeeping, laundry, use transportation, take medications, manage finances

59

Informal Assessment During Clinical Interview/Contacts:

- **Recent memory:** Your name, reference previous visits or discussion during first part of session, previous or future appointments on that same day, current weather, recent news events, activities last weekend
- **Remote memory:** Where born, raised, name of last school, date of marriage, birthdates of children, dates of other significant events
- **Prospective memory:** Next appointment, next medication dose, time of transportation pick-up, other tasks of day/week, have them make appointment at front desk, have them leave you something at front desk, have them call you later in day

60

Informal Assessment During Clinical Interview/Contacts:

- **Learning:** Have them paraphrase something you told them during the interview (e.g., Tell me what I was saying about ...)
- **Attention:** Ability to track conversation
- **Language:** Understand speech, express self clearly, word-finding, loss train of thought, reading, writing

61

Informal Assessment During Clinical Interview/Contacts:

- **Spatial orientation:** How did they find their way to your office, have them find bathroom, find way back to front desk, find way to drinking fountain
- **Executive/Functional:** Problem solving activities, have them perform/describe sequential multi-step tasks, have them perform real-world tasks

62

What to do if you suspect cognitive impairment:

- Contact probation officer/family member/case manager/primary care provider to help make referral for neuropsychological evaluation
- Find someone familiar with the patient to complete Patient History Questionnaire and accompany patient to the appointment to answer questions
- Bring prior pertinent psychological or psychiatric evaluations, criminal records summary, medical/school records

63

What is Neuropsychology

- Neuropsychology is a subspecialty within clinical psychology that examines the relationship between brain functioning and behavior

64

Neuropsychological Evaluation is more than reporting test scores

- Clinical interview
- Mental status examination
- Behavioral observations
- Background history (review of labs/neuroimaging /medications/neurological exam/ER records/other medical history)
- Estimation of/comparison to premorbid functioning

65

Neuropsychological Evaluation is more than reporting test scores

- Distinguishing of overlapping conditions
- Cognitive/neuropsychological test interpretation
- Psychological/personality evaluation
- Collection of collateral information from people/systems familiar with the client

66

Neuropsychology: The Missing Link

- **Neurology:** gross pathology/structure; presence/absence of disorders; orders specialized testing (misses function/ability; vague structure; vague diagnosis; insensitive)
- **Radiology (CT/MRI):** structural imaging (misses function/ability; vague diagnosis)

67

Neuropsychology: The Missing Link

- **Psychiatry:** subjective clinical assessment; medication (subjective; vague diagnosis; insensitive)
- **Clinical Psychology:** basic intellectual and psychological functioning; basic diagnosis (misses cognitive functioning in various domains; insensitive; lack specialized training in neuroanatomy & neuropathology; fails to incorporate medical/biological/neurological contributions)

68

Reasons For Conducting a Neuropsychological Evaluation

- Establishment of baseline functioning for longitudinal comparisons
- Treatment planning
- Selecting interventions appropriate to level of cognitive functioning
- Rehabilitation treatment planning
- Vocational planning

69

Reasons For Conducting a Neuropsychological Evaluation

- Educational planning
- Discharge/placement planning
- Disability determination (Note: only addressed within the context of other clinical questions)
- Competency/Capacity evaluation (e.g., driving, managing finances, making decisions regarding their medical care, living independently)

70

Neuropsychological evaluations answer the following questions:

- Is there brain impairment?
- What is the severity of the impairment?
- Is the condition progressive or static?
- What is the nature, etiology, and prognosis of the impairment?
- What are the specific treatment recommendations?
- What are the likely implications of impairment and disability on this person's life?

71

Neuropsychological evaluations answer questions regarding functional activities:

- Is the patient capable of living alone?
- Can the patient drive?
- Is the patient capable of managing financial affairs?
- Does the patient have medical decision-making capacity?
- Can they participate/benefit from treatment programming?

72

Presentation Key Points

- Cognitive impairment is common but often undetected
- Alaska is a fertile environment for cognitive impairment, TBI & FASD in particular
- Informal cognitive screening helps patients/clients avoid many problems and it enhances patient treatment compliance and their ability to benefit from treatment or participate in medical/legal processes

73

Presentation Key Points

- Brief assessment can be done by anyone, informally and unobtrusively, in a minimum of time
- Cognitive assessment is best done multimodally (i.e., chart review, interview, informal assessment methods)
- If you suspect impairment, initiate a referral and attempt to provide supplementary information
- Neuropsychology has a unique role in the medical/mental health fields

74
