Neuropsychiatry Training Objectives for General Psychiatry Residents


The following training objectives were developed by the ANPA Education Committee (1991-2001) in an attempt to clarify for general psychiatry trainees a reasonable set of neuropsychiatric competencies to have achieved by the conclusion of training. This is NOT intended to be a list of competencies for neuropsychiatric specialty training. Prior to adopting these objectives, the authors surveyed general psychiatry training directors and incorporated many of their suggestions. In addition, the input of numerous neuropsychiatrists in ANPA was included.

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By completion of residency training, the general psychiatrist should possess the following neuropsychiatric skills:

I. NEUROPSYCHIATRIC EVALUATION, THEORY AND TECHNIQUE

A. Conducting and recording the neurological examination (Munetz and Benjamin 1988; Kaufman 1995; Benjamin 1997; Kowall and Berman 1999; Woods 1999)

1. Be able to perform a complete neurological examination.

2. Be able to conduct a partial neurological assessment by observation in the case of uncooperative patients.

3. Be able to obtain a thorough neurodevelopmental history.

• Be able to recognize subtle neurologic signs including but not limited to:
  
  - neurodevelopmental signs ("soft signs")
  - release signs
  - overflow movements
  - asymmetry of involuntary (spontaneous) smile
  - pseudobulbar palsy
  - gait-evoked dystonic posturing

5. Be able to perform the AIMS examination for assessment of tardive dyskinesia

6. Be familiar with the neurologic exam findings in the major hypokinetic and hyperkinetic movement disorders.

7. Be familiar with the neurologic examination in dementia.
B. Conducting and recording the formal mental status examination (Trzepacz and Baker; Mueller and Fogel 1996; Ovsiew 2001).

1. Be familiar with the tests used in detailed formal mental status examination and the reasons for doing each.

2. Be able to accurately describe a patient’s behavior in objective, non-judgmental language, and in neurologically relevant terms.

3. Be able to apply a flexible approach to mental and cognitive status evaluation to complement the routine basic mental status examination with specific tests linked to diagnostic hypotheses. This requires familiarity with several methods of evaluating attention, memory, language, visuo-spatial, and higher intellectual functions.

4. Be able to present the mental status examination orally and in writing in a concise, organized fashion.

C. Use of mental status rating scales (Blacker)

1. Be familiar with the administration and interpretation of the most widely used clinical rating scales for depressed mood, psychosis, cognitive function and general psychopathology.

D. Utilization of neuropsychologic testing (Kaplan 1990; Keefe 1995; Howieson and Lezak)

1. Be familiar with the common major neuropsychological tests and the purposes they serve.

2. Know when and how to appropriately order neuropsychological testing.

3. Understand how the IQ is determined.

4. Understand the significance of a verbal/performance split.

5. Be able to appreciate:
   - sensitivity/specificity issues
   - influence of educational and social background on test performance
   - influence of substance use or medications on test performance
   - influence of primary psychiatric disorders on test performance

6. Know how to incorporate the results of neuropsychological testing into a patient’s evaluation and treatment planning.
E. **Utilization of structural neuroimaging** (Weinberger 1984; Garber, Weilburg et al. 1988)

1. Be able to state what abnormality is suspected when requesting neuroimaging.
2. Be able to locate the major anatomic landmarks of the brain on CT and MRI scans.
3. Know the indications for contrast-enhanced CT or MR scanning.
4. Be able to choose an appropriate imaging technique in a minimally cooperative patient.
5. Be familiar with indications for MRI versus CT scanning.
6. Be able to recognize bleeding, edema, hydrocephalus, signs of atrophy and major focal lesions.
7. Be able to recognize common CT and MRI artifacts.


1. Know when to order EEG, what leads or special techniques to specify, how to prepare the patient, and how to use the results in diagnosis and patient followup.
2. Be familiar with the major types of epileptiform abnormalities and the diagnostic implications of negative or positive studies.
3. Be familiar with the effects of psychoactive agents on the EEG.
4. Be familiar with the use of EEG in dementia, delirium and other encephalopathies.
5. Know the major indications for visual, brainstem auditory, and somatosensory evoked potential testing.
6. Know generally what long latency evoked potentials are.
7. Know generally what information may be gained through spectral analysis and brain mapping techniques.
G. Interpretation of CSF findings (Kaufman 1995)

1. Know when the examination of CSF is indicated in the evaluation of psychiatric patients, what constitutes a complete examination, and how the CSF exam should be followed up.

2. Be aware of the basic CSF findings of infection, hemorrhage, and demyelinating disease.


1. Be able to explain generally how PET and SPECT images are obtained, what some of the problems with the technology are, and in what conditions functional imaging may be useful.

Be aware of the PET/SPECT findings described in Alzheimer disease, Huntington’s disease, and schizophrenia. Be able to describe the potential pathophysiologic information to be gained and the ethical considerations inherent in these procedures.

Be aware of the major types of functional magnetic resonance imaging (fMRI) including BOLD, Diffusion/Perfusion, and MR spectroscopy, and know generally how they are used in research.

I. Awareness of Neuroanatomic Sites of Psychiatric Significance (Strub and Black 1988)

1. Know the major structures of the limbic system and basal ganglia.

2. Know the nuclei of origin and target regions of the major neurotransmitter systems.

3. Know the anatomic sites associated with major neurobehavioral syndromes.

J. Conducting forensic evaluations

1. Be familiar with the principals of determining testamentary capacity, specific competencies, criminal responsibility, and degree of disability in patients with brain dysfunction.
II. NEUROPSYCHIATRIC SYMPTOMS, SYNDROMES AND THERAPEUTICS

A. Neuropsychiatric aspects of psychopharmacologic treatment (Kaufman 1995)

1. Be familiar with the following common neurologic side effects of psychoactive drug treatment and be able to develop treatment strategies for them:

   - Lithium tremor
   - Lithium encephalopathy
   - Neuroleptic-induced cognitive impairment
   - Drug-induced delirium
   - Neuroleptic malignant syndrome
   - Suprasensitivity psychosis
   - Pseudoparkinsonism
   - Rabbit syndrome
   - Dystonia
   - Akathisia
   - Tardive dyskinesia and its variants

2. Be able to perform the AIMS examination.

3. Know which medications in general use are commonly associated with mental status abnormalities.

4. Be familiar with the pharmacologic management of psychiatric conditions in patients with underlying neurologic disorders such as dementia, epilepsy, multiple sclerosis, traumatic brain injury and parkinson’s disease.

5. Be familiar with alternative drugs to neuroleptics for aggression/agitation of various types.

6. Be aware of the psychiatric indications for anticonvulsant treatment and know how to appropriately manage anticonvulsant treatment.

7. Know the relative indications and contraindications for ECT.

8. Be familiar with the common and the dangerous interactions among psychoactive agents of different classes.
B. Diagnosis of major psychiatric symptoms (Davison and Bagley 1969; Massion and Benjamin 1989; Coker 1991; Gualtieri 1991; Skuster, Digre et al. 1992; Kaufman 1995; Frumin, Chisholm et al. 1998; Benjamin 1999)

1. Know the most common medical, neurologic and primary psychiatric etiologies of:

**Delirium**
**Dementia**
Violent episodes
Self-injurious behavior
**Catatonia***
Visual hallucinations
Non-epileptic episodic behaviors***
**Mutism**
Personality change due to medical condition
Mood disorder due to medical condition, manic and depressed types
Psychotic disorder due to medical condition:
   - with delusions, with hallucinations
Anxiety disorder due to medical condition
Atypical psychosis presenting in young adulthood, in middle age, and in old age
Major involuntary movement disorders (including tremor, choreoathetoid movements, tics, parkinsonism, etc)
**Compulsive water drinking***
Behaviors in intellectually disabled or autistic individuals such as stereotypy, aggression, self-injurious behavior, pica

2. Recognize the common features of acquired (non-hereditary) subtypes of major psychiatric syndromes

C. Diagnosis of delirium (Lipowski 1992)

1. Be able to recognize delirium.

2. Be familiar with the mental status findings common in delirium.

3. Be able to apply a methodical approach to the differential diagnosis of delirium.

4. Know the common toxic and metabolic causes of delirium.

5. Be familiar with the EEG changes that are common in delirium.
6. Be able to suggest appropriate nursing and medication interventions in the management of delirium.

D. **Diagnosis of dementia** (McLoughlin and Levy 1996; Neary, Snowden et al. 1998)

1. Be able to apply a methodical approach to the differential diagnosis of dementia including relevant diagnostic tests.

2. Differentiate among the major categories of dementia (dementia of Alzheimer type, vascular, etc).

3. Recognize the stages of Alzheimer disease.

4. Be familiar with the principal neurologic and mental status examination findings in dementia.

5. Understand the interaction of depression and dementia.

6. Be familiar with the interaction of delirium and dementia.

7. Be familiar with the psychiatric and behavioral complications of dementia.

8. Be familiar with the concept of primarily subcortical dementia.

9. Be familiar with the differential diagnosis of rapidly progressive dementia.

10. Be aware of some of the major issues that arise in the psychotherapy of patients with Alzheimer disease and their families.

11. Be aware of the resources available in one’s own community for patients with Alzheimer disease and their families.

E. **Diagnosis of epilepsy** (Waxman and Geschwind 1975; Bear and Fedio 1977; Bear 1979; Oliver, Luchins et al. 1982; Clifford, Rutherford et al. 1985; International League Against Epilepsy 1985; Pellock and Willmore 1991; Engel 1993; Tisher, Holzer et al. 1993)

1. Be familiar with the international classification of epileptic seizures and be able to describe seizures using those terms.

2. Be able to perform a reasonable differential diagnosis for possible seizures. Be familiar with the phenomenology of simple and complex partial seizures and of complex partial status epilepticus.
3. Know which tests to order, how to order them, and how to use the results when epilepsy is suspected.

4. Know how to manage psychiatric disturbances occurring ictally, post-ictally, and inter-ictally.

5. Know how to manage anticonvulsant treatment.

6. Be familiar with the cognitive effects of anticonvulsants.

7. Be familiar with the effects of various psychotropic agents on seizure threshold.***

8. Be aware of the use of temporal lobectomy for treatment of individuals with refractory seizures or inability to tolerate medication.

9. Be familiar with the psychosocial effects of having epilepsy.

10. Be familiar with the theories about interictal personality characteristics associated with epilepsy.

11. Be familiar with the kindling hypothesis.

12. Be familiar with the differentiation of psychogenic from epileptic seizures and be aware of some techniques for management of psychogenic seizures.***

13. Be familiar with the evaluation and management of seizures in patients taking psychotropic medication.

14. Be aware of the resources available in one’s own community for individuals with epilepsy.

15. Be aware of some of the common issues encountered in the psychotherapy of patients with epilepsy.

F. Diagnosis and management of neuropsychiatric sequelae of traumatic brain injury (TBI) (McAllister 1992; Benjamin 1999; Silver, Hales et al. 2001)

1. Be aware of the association between substance abuse and TBI.

2. Be able to gather the appropriate historical data to help formulate the organic component in the diagnosis of patients with major psychiatric disorders and a history of TBI.
3. Know the salient points to elicit in taking the history of a TBI that would help establish the severity and behavioral prognosis.

4. Know the signs and symptoms of post concussion syndrome.

5. Know how to appropriately advise a patient who has suffered a mild brain injury or concussion to minimize chances of avoidable problems on the job, with family, and in interpersonal relationships.

6. Be able to identify and manage the following common sequelae of TBI:
   - Diminished attention
   - Mood disorder due to medical condition
   - Psychotic disorder due to medical condition, with delusions
   - Personality change due to medical condition, including frontal syndromes, interictal behavior syndromes, etc.
   - Aggressive behavior
   - Alterations of sleep, appetite, sexual behavior

7. Be able to evaluate for the presence of post-traumatic seizures.

8. Be able to help supervise the rehabilitation of patients with neuropsychiatric sequelae of TBI if specialized head injury rehabilitation facilities are not available. Be able to work with occupational therapists, speech pathologists, neuropsychologists, and neurologists in the rehabilitation of head injury patients when such services are available. Be able to utilize results of neurodiagnostic and neuropsychological testing in planning for the rehabilitation of and assessing the progress of patients with TBI.

9. Be familiar with some of the major issues that arise in the psychotherapy of patients recovering from TBI.

10. Be aware of the resources available in one’s own community for patients with traumatic brain injuries and their families.

G. Diagnosis and management of neuropsychiatric sequelae of stroke (Robinson; Ross and Rush 1981; Kaufman 1995)

1. Be aware of the major stroke syndromes and the focal neuropsychiatric syndromes with which they are typically associated.

2. Be able to approximate lesion localization, formulate a basic differential diagnosis as to stroke etiology, estimate severity of deficit and urgency of further evaluation.
3. Be able to diagnose and treat mood disorders as well as adjustment disorders in patients with stroke.

4. Be aware of the neuropsychiatric causes for failure to progress in stroke rehabilitation.

5. Know how to diagnose and treat pseudobulbar palsy.

6. Know how to explain neuropsychiatric deficits to a patient’s family or caretaking facility in order to prevent predictable behavioral problems.

**H. Diagnosis of basal ganglia/movement disorders**

1. Be familiar with the association between movement disorders and psychiatric or cognitive deficits.

2. Be able to conduct appropriate evaluations for Parkinson’s disease, Huntington’s disease, Wilson’s disease, and Gilles de la Tourette syndrome.

3. Be familiar with the differential diagnosis and treatment of catatonia.

4. Be able to diagnose and treat the psychiatric disorders commonly associated with basal ganglia disorders.

5. Be familiar with the concept of primarily subcortical dementia.

6. Be aware of the association among tic disorders and obsessive compulsive disorder and know how to elicit an appropriate history that takes this association into account.

7. Be familiar with the standard treatment approaches for Gilles de la Tourette syndrome.

8. Be aware of the resources available in one’s own community for patients with Parkinson’s disease, Huntington’s disease, and Gilles de la Tourette syndrome.
I. Diagnosis of major focal neurobehavioral syndromes (Lilly, Cummings et al. 1983; Alexander 1997; DeRenzi 1997; Farah and Feinberg 1997)

1. Be aware of the following major focal neurobehavioral syndromes and their differential diagnosis:

   - Broca’s aphasia
   - Wernicke’s aphasia
   - Right hemisphere syndromes
   - Prosopagnosia
   - Visual agnosia
   - Klüver-Bucy syndrome
   - Frontal syndromes (with predominantly orbitofrontal, dorsolateral, or medial frontal characteristics)
   - Korsakoff’s psychosis

J. Diagnosis of demyelinating disease (Kaufman 1995)

1. Know the salient features in the history and neurologic examination consistent with multiple sclerosis.

2. Know how to establish the diagnosis of multiple sclerosis.

3. Be familiar with the psychiatric complications of multiple sclerosis, including mood disturbances, organic personality syndromes, dementia, and pseudobulbar palsy.

4. Be familiar with the psychiatric complications of steroid therapy.

K. Diagnosis and management of attention deficit disorder and learning disabilities (Weintraub and Mesulam 1983; Price, Daffner et al. 1990)

1. Know how to elicit a history of learning disorder.

2. Be familiar with the syndrome of dyslexia.


4. Be able to diagnose attention deficit disorders in children and adults.

5. Be aware of the differential diagnosis of disorders of attention.

7. Be able to appropriately select patients for treatment with psychostimulants or alternative medication approaches.

8. Know how to manage patients on psychostimulant medications.

L. Diagnosis and management of sleep disorders (Culebras 1992)

1. Be aware of the classification of Disorders of Initiation and Maintenance of Sleep (DIMS) and Disorders of Excessive Somnolence (DOES).

2. Be familiar with the following common sleep disorders:
   - Narcolepsy
   - Sleep apnea
   - Psychophysiological insomnia
   - Parasomnias
   - Restless leg syndrome

3. Be aware of the existence of REM sleep behavioral disorder

4. Know how to take a sleep history.

5. Know when and how to order polysomnography and how to utilize the results in treatment planning.

6. Be familiar with the sleep disorders associated with major psychiatric disorders, with use of major categories of psychoactive drugs, and with substance abuse.

7. Be able to instruct patients in proper sleep hygiene.

8. Be able to prescribe treatment for common sleep disorders and know when to refer patients to sleep disorder specialists.

M. Diagnosis and management of behavioral disorders in intellectual disability, autism, and other developmental disabilities (Gualtieri 1991; Nordin and Gillberg 1998; Benjamin 1999)

1. Be familiar with the diagnosis and natural history of autism and the major intellectual disability syndromes (Down’s, Fragile X).

2. Be familiar with the common behavioral disorders that occur in developmentally disabled individuals.
3. Be familiar with the basic principles of behavior therapy as they apply to the management of behavior disorders in developmentally disabled individuals.

4. Be able to evaluate for and treat major psychiatric syndromes that occur in developmentally disabled patients.

5. Be aware of the psychopharmacologic strategies that have been used for behavior disorders in developmentally disabled individuals.

6. Be able to work with staff of group homes or institutions to gather appropriate behavioral data to facilitate treatment of behavioral disorders.

N. Differential diagnosis of new-onset psychosis

1. Develop a methodical approach to the evaluation and differential diagnosis of first psychotic breaks in adolescents, young adults, middle-aged and elderly individuals.

2. Be familiar with the more common neurodegenerative disorders that may present with psychiatric disturbances (metachromatic leukodystrophy, Wilson’s disease, Huntington’s disease, etc).

O. Diagnosis and management of mood disorder due to medical condition (Massion and Benjamin 1989)

1. Know the major toxic, metabolic, and neurologic etiologies of mood syndromes due to medical or neurological condition of the depressed and manic types.

2. Be able to conduct a diagnostic evaluation for depression or manic behavior in the face of cognitive deficits or neurological impairment of affective expression.

3. Be able to select appropriate drug treatments for depression or mania that take into account a patient’s cognitive deficits and differential sensitivities to drug side effects.

P. Diagnosis of amnestic syndromes

1. Be familiar with the diagnosis and course of Korsakoff’s syndrome and be aware of the anatomic lesions associated with it.

2. Be aware of other possible etiologies of amnestic syndromes.
Q. Diagnosis of substance-related syndromes

1. Be familiar with the neuropsychiatric sequelae of chronic alcohol abuse and chronic cocaine abuse.

2. Be aware of the presentation of the other major categories of substance abuse disorders.

3. Be able to diagnose and manage acute intoxication with or withdrawal from the major categories of abused substances.

R. Diagnosis of conversion disorder

1. Be familiar with features commonly elicited in the history of a patient with conversion disorder.

2. Be aware of some of the diagnostic maneuvers utilized in the diagnosis of conversion.

3. Be aware of some of the techniques used in the treatment of conversion disorders.

S. Diagnosis and management of headache (Marks and Rapoport 1997; Newman and Lipton 1998; Saper 1999)

1. Be familiar with the common types of headache.

2. Be able to recognize the danger signs in acute headache.

3. Be able to manage common headache types that occur in psychiatric patients.

4. Know when to refer patients for further neurologic evaluation.

T. Diagnosis and management of chronic pain syndromes (McQuay; Galer 1995; Rowbotham 1995; Fishbain 1999)

1. Be familiar with the salient features to elicit in obtaining the history from a patient with a chronic pain syndrome.

2. Be able to recognize common patterns of neuropathic pain (e.g. causalgia)

3. Be aware of the interactions between pain syndromes and psychiatric syndromes such as affective disorders, anxiety disorders, somatization disorder, or personality disorders.
4. Be familiar with the commonly used analgesics and know how to utilize adjunctive medications or alternative medications in the management of pain.

5. Know how and when to refer to other specialists such as neurologists, anesthesiologists, physiatrists, orthopedists, and behavioral psychologists.

U. Diagnosis of neuropsychiatric manifestations of HIV and other CNS infections (Roos 1992; Atkinson and Grant 1994; Zegans, Gerhard et al. 1994; Lishman 1998)

1. Be familiar with the neuropsychiatric manifestations of HIV, neurosyphilis, and Herpes encephalitis.

2. Be familiar with the differential diagnosis of depression in patients with HIV infection.

3. Be aware of the resources available in one’s own community for individuals with AIDS.

4. Be aware of some of the major issues that may arise in the psychotherapy of patients with AIDS.

V. Diagnosis of occupational exposure-related syndromes

1. Be aware of some of the major industrial toxins that are associated with neuropsychiatric syndromes, with special attention to those encountered in one’s own community.

2. Know how to take a relevant exposure history

References Cited


Robinson, R. “Depression in stroke etc.”


