



AMERICAN BOARD OF PEDIATRIC
NEUROPSYCHOLOGY

Preparation Guide for Examination and
Certification By the
American Board of Pediatric Neuropsychology

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Introduction

Background Information

There has been much concern within Division 40, International Neuropsychological Society (INS) and the National Academy of Neuropsychology (NAN) regarding the potential proliferation of certifying boards for neuropsychologists and potential for professional fragmentation. Many neuropsychologists believe that American Board of Professional Psychology (ABPP) sufficiently serves the profession, while others believe that ABPN sufficiently serves the profession, while others believe that ABPP incompletely or inaccurately examines neuropsychological skills for both adults and pediatric practitioners. The ABPdN does not offer an opinion as to whether the ABPP / Clinical Neuropsychology (ABPP / CN) or American Board of Professional Neuropsychology (ABPN) Boards adequately measure the skills necessary to assess competence for the practice of adult neuropsychology. However, at its inception, it was the ABPdN Board opinion that neither of the above boards (ABCN or ABPN) provided board certification examinations that were sufficient to the task of assessing the skills required by those who practice primarily pediatric neuropsychology. The ABPdN Board, therefore, was established to assess those specific skills. It should be noted that since that time ABPP/CN began offering a pediatric subspecialty if boarded through ABPP/CN.

Clinical practitioners representing institutions hiring pediatric neuropsychologists formed a coalition in 1996 to advance their belief that a unique interplay exists between neurodevelopmental issues and neuropsychological assessment that require special sets of expertise not readily assessed by existing boarding entities. Following discussion with colleagues, who are members of medical practice boards and ABPP Boards, the coalition elected to establish an independent certifying authority. This authority developed an examination using a purely objective evaluation method, in order to create a credentialing format that could reliably evaluate for content validity.

In early 2002, the ABPdN Board voted to become a separate, not-for-profit corporation from its original parent company. This new corporation, purchasing the trademark “ABPdN” from the parent corporation for a nominal fee, would serve the primary and only purpose of pediatric neuropsychological board certification. It was determined that a new set of bylaws were needed for the corporation and that these would be promulgated and voted on at the October 2002 meeting in San Diego, California.

The elected officers and leaders within ABPdN met again in 2002 to discuss the current examination method, to endorse the new bylaws, and to review whether the goals of the organization were being met. At that meeting it was determined that the objective instrument being used by the board was insufficient to review the necessary skills of pediatric neuropsychology, and that several things were needed. These included a careful review of the current written examination, a revision of the current application, and the addition of both a written sample requirement and an oral exam. It was also reiterated that these examination procedures had to reflect the board’s intention to inclusively assess for competence and not to generate an examination that would produce an otherwise group of individuals with exclusively elite-level skills. With this, an examination redevelopment committee was formed and the work on a revised examination method began.

Over the following calendar year, the ABPdN ceased accepting new applications for membership and the board retained the services of a consultant published in the area of board examinations and ecological validity. Following the consultant’s recommendations, the board made several significant changes to the

typical procedures for examination. These changes included shifting considerable focus of review to the background and training of the applicants for examination, offering the written and the oral examination to applicants on the same day, and changing the threshold for passage to meet those generally seen with medical boards.

The ABPdN has required its membership to go through the new credentialing process, suggesting that members certified prior to October 2002 submit practice samples for review and to sit for the oral examination. The application process was reopened in October 2003, although it was determined that the first written and oral exam would not take place until the meeting of the National Academy of Neuropsychology in 2004. The first set of oral and written sample examiners were examined and appointed in April 2004 using the criteria proposed by the examination committee in Dallas, Texas in October 2003. As such, the first set of written sample and oral exams were held in April 2004 and new examiners were enlisted for training in preparation for the NAN meeting in 2004.

In 2009, the Oral Examination was changed to reflect a more broad fact-finding section that could be tailored to the practice of the examinee. The Fact-Finding section was expanded to include clinical cases from the following domains:

- Neurodevelopmental Disorders (ADHD, LD, & PDD)
- TBI
- Epilepsy
- Medical Conditions

ABPdN is currently reviewing and updating the application process, written examination, practice sample, and oral examination process.

If neuropsychology is to remain a viable and important clinical profession, then boards must acknowledge their responsibility to continue to adapt to the current clinical landscape. Political divisiveness is unproductive if the consumer is not protected and the boards cease to attend to the scientific necessity of assessing their members in an ecological valid manner. Whether there exists one board or many, the consumer of neuropsychological service is served most effectively when boards act responsibly to ensure that their members are adequately prepared to provide clinical services.

Founders of the American Board of Pediatric Neuropsychology believe that pediatric neuropsychology is a **defined specialty** of professional psychology and that pediatric neuropsychologists need a knowledge base that differs in significant ways from practitioners of adult neuropsychology. Evidence for the recognition of this specialization is apparent from the growth of journals and texts devoted to pediatric neuropsychology, the presence of special interest groups within American Psychological Association (APA), INS, and NAN (Pediatric Neuropsychology Interest Group = PNIG), and an actively growing international pediatric neuropsychologists list serve. With the clear demarcation of pediatric neuropsychology as an independent specialty, we believe that continued maturation of an exclusive specialty board significantly enhances the stature and practice of pediatric neuropsychology, as well as serves to increase the protection of the consumer of those services.

Consistent with the ABPdN mission and as articulated in its bylaws, the ABPdN exists for the following purposes:

- To arrange and conduct investigations and examinations to determine the qualifications of individuals who

apply for the certificates issued by the corporation.

- To award such certificates in the field of pediatric neuropsychology to qualified applicants and to maintain a registry of holders of such certificates.
- To serve the public welfare by preparing and furnishing lists of its members to proper persons and agencies.

Purpose of the ABPdN Examination

The format of the ABPdN's credential review and examination processes has been constant since the examinations held in 2004, and the procedures continue to be reviewed and amended. The process of examination is as follows:

1. Successful completion of the written application materials including case vignettes and credential review.
2. Successful completion of the Practice Sample (formerly called "Work Sample"). This step includes a review by three (3) ABPdN members for the purposes of demonstrating competency in written work and with regard to acceptability for the Oral Examination.
3. Completion of the Oral Examination.
4. Successfully completing the 100-item, multiple-choice examination.

The purpose of the ABPdN process is to ensure that the examinee has the opportunity to demonstrate competency to practice Pediatric Neuropsychology along several domains.

This Manual serves as a guide for applicants who have already completed the first step of the examination process. It is assumed, based on completion of the written application, credential review and case vignettes that the applicant is knowledgeable, informed, and active in the practice of pediatric neuropsychology. The applicant's preparation for the examination must be understood in the context of being able to pass the initial threshold requirements. That is, once the initial application screen threshold has been passed. The applicants are viewed by the examination committee as being capable of passing both the written and oral examinations for board certification with the ABPdN. Individuals who have the best training experience prior to applying to the ABPdN will be those individuals who have completed a formal postdoctoral training program as reflected in Houston Conference Guidelines and more recently in the Minnesota Guidelines Update currently being reviewed for publication. Conversely, simply attending continuing education workshops, reading standard and classic texts in pediatric neuropsychology, and informal study groups are unlikely to position an applicant for successful completion of the examination process outlined by the ABPdN. Detailed preparation is not a substitute for the formal training at the postdoctoral level.

Pass Rates and Statistics

Since 1996, 163 diplomas have been issued by the ABPdN Examination Committee (updated 2025).

1. Of those taking the written exam, how many passed on their first try?

Since the board was originally founded, this figure is yet unknown. Since the board was re-

organized in 2002, the following is true:

- There are 16 members of the originally boarded group who have passed the written, oral and sample exams (required since 2004).
- 6 members from the original boarded group have dropped out of the ABPdN for reasons related to not being able to meet the new criteria, death, or other related reasons.
- We have added an emeritus category for the two MD members that no longer meets the 2004 ABPdN criteria.
- The pass rate for each stage of the examination is between 78-85%. Applicants who pass all stages on the first attempt = 69%.

Study Recommendations

There are several ways to review and prepare for the examination. Completion of a post-doctoral fellowship in neuropsychology or training that is deemed comparable to the credential review committee is required prior to submitting your application. Beyond that, such methods include continuing education workshops, identification of a mentor, or working in a peer group.. A review of materials when received during training, including texts, manuals, specialized lectures, is probably the most efficient route for preparation. Again, relative to the high threshold requirements of the ABPdN, once the applicant has passed the initial threshold requirements, it is presumed that they have the knowledge required to successfully complete the oral and written examination portions of the board certification process.

Being current with literature in pediatric neuropsychology is also encouraged. Specific journals of interest may include:

Journal of Pediatric Neuropsychology
Developmental Neuropsychology
Child Neuropsychology
Journal of Pediatric Neuropsychological Rehabilitation
The Clinical Neuropsychologist
Archives of Clinical Neuropsychology

Continuing education workshops are offered through the American Academy of Pediatric Neuropsychology, National Academy of Neuropsychology, Division 40 of the American Psychological Association, American Academy of Clinical Neuropsychology, as well as the International Neuropsychological Society. The AAPdN has an annual conference, and there are workshops and journal clubs offered throughout the year. AAPdN also has an extensive home study program, and there are special training videos available to those who are studying upon request.

Such workshops and presentations may aid in rounding out areas for which the applicant did not have exposure or formal training during their doctoral or postdoctoral training, but should not replace nor serve as the only method of education in pediatric neuropsychology.

The ABPdN has developed a reading resource list, identifying core resources for specialized topics, as well as the general practice of pediatric neuropsychology. Many of these texts are used in either doctoral or postdoctoral training programs. Formal review of the resources listed may be warranted, if the individual has previously read the specific text. This reading list is not exhaustive; however, core resources are printed in bold font and should provide the applicant with a helpful forum for completing either self-directed study or review.

The examination committee of the ABPdN has developed a specific workshop oriented toward preparing applicants or prospective applicants for the ABPdN examination, which is available on our website and [can be accessed here](#). In addition, the ABPdN intends to offer this workshop several times per year, typically in conjunction with the NAN, APA, or INS meetings. The workshop will provide applicants and prospective applicants with information regarding the ABPdN, and allow interested individuals to inquire about each stage of the examination process.

Pediatric neuropsychology should constitute a core portion of your practice. Again, given the threshold requirements, it is likely that the applicant has already met this requirement. The remainder of this manual will be devoted to aiding the applicant in navigating each remaining step of the ABPdN process.

Mentoring

Every applicant passing the initial step in the examination process (Step 1) is assigned a mentor. Mentors are active or emeritus ABPdN diplomates who have completed all stages of the examination process. Mentors can aid the applicant in preparing and presenting data for the Practice Sample, guidance on the most salient concepts for study in preparing for the Written Examination, and guidance on strategies for preparing for the Oral Examination. Encouragement and support are also part of the mentoring process and can be a valuable resource for applicants. Mentors can be obtained by [completing this request form](#).

Practice Sample

Purpose

The purpose of the Practice Sample is to determine the applicant's overall knowledge in the area of clinical practice. While the Written Examination was designed to assess content-specific knowledge with regards to the field of pediatric neuropsychology, the Practice Sample is a way for the board to evaluate the day-to-day skills of the applicant. To that end, the sample should reflect a typical patient seen in the applicant's clinical practice. Practice Samples are not limited to pediatric neuropsychological assessments.

Preparation

After an application is reviewed and determined board-eligible, a candidate will then be invited to provide a practice sample that reflects their typical work in pediatric neuropsychology. Prior to taking the objective and oral examination, the candidate must prepare and tender one written sample of an original pediatric neuropsychological examination performed solely by the candidate. Appropriate samples may include case analysis/interventions and supervision sessions.

Submission

The procedures for these samples are as follows:

If the applicant is providing a neuropsychological evaluation:

- A. Prepare one neuropsychological evaluation report sample demonstrating your **typical** work. PLEASE do not send in work reflecting a case that is diagnostically unusual or something that you think demonstrates uncommon diagnostic acumen. We want to see what you do every day;
- B. Prepare 4 copies of your practice samples in a neat and organized format. Please do not expect the reviewers to engage in organization for you. The better organized your sample is, the easier you will make your reviewer's work;
- C. Your practice sample must include your written report, case notes, raw data protocols, and the supportive medical documentation for your opinions. Please be **ABSOLUTELY** certain to remove the identifiers from your records. To do otherwise would be pose significant ethical/legal problems for you and will result in your practice sample being failed;
- D. Send all of the materials to the ABPdN Executive Director who will be responsible for distribution;
- E. Your practice sample must be reviewed and accepted prior to scheduling your oral exam and must be tendered no more than two years after your application has been approved. If you do not submit a practice sample within the designated time frame, your application will be marked "inactive." To re-activate your account, you will be required to submit a practice sample that meets the stated criteria and meeting the above criteria and pay the application fee of \$350 again.
- F. Once your sample is approved, you will be prompted to prepare for the oral and written exam.

If the applicant is providing either an intervention or a supervision session: Provide a careful and thorough case analysis of the material that will be covered during the session to be viewed. This analysis should include background, diagnoses to be covered, methodological approaches, and a reference bibliography that specifically supports your approach and work. Please make certain that the latter includes the specific page references for the examiners to review.

1. Provide 4 copies of the analysis above that includes the specific chapters or articles upon which you are basing your intervention/supervision. Do not expect that your reviewers will have access to your texts or journals. Remember that they will be working to determine if you have reasonably applied the material you cited to the case in question.
2. Provide 4 copies of a video of your neuropsychological intervention or supervision. This should be no less than 30 minutes in length, but no more than 1 hour.
3. Please be **ABSOLUTELY** certain to remove the identifiers from your records. To do otherwise would be pose significant ethical/legal problems for you and will result in your practice sample being failed;
4. Send all of the materials to the ABPdN Executive Director who will be responsible for distribution;
5. Your practice sample must be reviewed and accepted prior to scheduling and is due no less than 3 months before you take oral and written exam and must be tendered no more than two years after your application has been approved.
- 6.
7. Once your sample is approved, you will be prompted to prepare for the oral and written exam.

Scoring

Your practice sample will be reviewed by two (2) evaluators. If one evaluator tenders a pass and the other a fail, the practice sample will be reviewed by another evaluator who will remain blind to the previous ratings. The practice sample will be rated on the following:

1. Appropriately redacted
2. Referral question is appropriately addressed
3. History presentation
4. Test selection
5. Data conflicts are adequately addressed
6. Reporting of test data
7. Professionalism
8. Case conceptualization
9. Diversity factors
10. Diagnosis
11. Appropriateness of recommendations

If your practice samples do not meet ABPdN standards, the problems identified will be carefully delineated and feedback will be provided in order to assist you in working toward the standard. However, please note that your sample is primarily being assessed to determine if it is a generally defensible document, demonstrates the required pediatric neuropsychological knowledge, and will likely increase the likelihood of your passing the oral examination.

The practice sample is scored in the following areas:

1. Redacted for patient identity and other identifiers
2. Clear referral question
3. Thorough history
4. Appropriate test selection given the purpose of the evaluation and version of the tests given
5. Accurate reporting of test results
6. Appropriate discussion of conflicting data
7. Case conceptualization
8. Ethical or legal issues are addressed
9. Cultural diversity issues are well documented and addressed
10. Diagnosis and conclusions
11. Evidence-based recommendations
12. Appropriate referrals

Example

The following document contains a Practice Sample that meets the requirements for ABPdN. Although there are many methods and instruments available for the examination of pediatric neuropsychology patients, ABPdN reviewers will pay close attention to the applicant's ability to (1) obtain a thorough history of the patients and presenting problems/reason for referral, (2) obtain all relevant medical/school/etc records and integrate them with the history, (3) design an appropriate battery to answer the referral question, (4) administer, score and interpret the data, (5) integrate the test data with the history and records, (6) derive an appropriate diagnosis accounting for all symptoms and other factors (if relevant), (7) determine appropriate treatment recommendations.

NEUROPSYCHOLOGICAL EVALUATION

Name: BRAD X (Name has been changed)
 Date of Birth: XX/XX/96
 Age: 7
 Hand: Right
 Referring Physician: Deborah XXX, M.D., XXX Center, XXX, Indiana
 Vicenta XXX, M.D., XXX Hospital
 Length of Consult: 1 Unit (XX/XX/2004)
 Length of Evaluation: 7 Units (Xx/XX/2004)
 Length of Follow-up: 1 unit
 (XX/XX/2004)

IDENTIFICATION AND REASON FOR REFERRAL

Brad is a seven-year-old Caucasian male who was seen for a neuropsychological evaluation in our office. He has a history of peri-natal trauma, neonatal seizures and more recently diagnosed partial seizures with secondary generalization, which are fairly well controlled on medication. He has some difficulty with auditory processing within the school system and this neuropsychological evaluation was requested to provide some diagnostic clarity and treatment recommendations.

BACKGROUND INFORMATION

Brad was the result of a vaginal, on time delivery with induction using Pitocin. His mother had a history of gestational diabetes, controlled with diet. She denied the use of any tobacco, alcohol, recreational or prescription medications. A vacuum was used in the extraction and during the delivery, meconium was found in the fluid. In addition, he was not breathing spontaneously and Apgar scores were quite low (4, 6). Lungs were cleared and there was no meconium found in his lungs. He was intubated and on a ventilator for approximately two days. During that time he began showing neonatal seizures that looked like, from the reports, partial seizures involving the right upper and lower extremity with secondary respiratory distress. He was treated immediately with Phenobarbital and that was successful in the short term for discharge.

Imaging done at that time revealed diffuse encephalopathy and a possible small tentorial hemorrhage, as well as a small hematoma in the bi-parietal occipital region. The parents reported that a follow-up MRI was done within one year and showed completed resolution. Results from this MRI were requested, but not available at the time of this report. His pediatrician was contacted and confirmed this data.

He was eventually discharged on Phenobarbital and was seizure free for eight months. He was later weaned off the medication and apparently seizure free.

His mother did not breast feed and his feeding was complicated by reflux; but, he did gain weight easily. Early medical history is remarkable for RSV, which eventually led to what sounds like asthmatic bronchitis and dehydration. He was hospitalized for one to two days. He currently takes Xopenex and Albuterol inhalers that he uses on a p.r.n. basis and takes Singulair daily.

Developmental milestones were largely on time for motor but he did show some dystonia and was treated with PT and OT through First Steps until age 3. He was then discharged and thought to be at an age appropriate level Language milestones were largely on time. He toilet trained well, but does still have fairly chronic nocturnal enuresis. This is

untreated and does not cause concern to the family.

Somewhere around age five (December 2002), he again began showing seizure activity, which was initially described as nocturnal in onset with confusion upon awakening and with accompanying motor tremor. He was running a low-grade fever. There is a record of an EEG in January of 2003, which showed mild encephalopathy, but this was unobtainable. Mom thought that the initial events might have been due to a Phenergan suppository that he was given for flu treatment but no medical records confirm that. What can be said is that on the 24 hour-EEG done in March of 2003, some focal epileptiform activity was found in the right central parietal region and he was again started on seizure medication.

He took Trileptal initially but had some reflux and was later switched to Valproic Acid. He has currently been seizure free for 18 months while on this medication. Other medications include Clonidine 0.1 mg, one-half tab q. h.s for sleep.

Academic problems include difficulties following directions, primarily when directions are given auditorially. On confrontation with him during the neurological examination, he was able to do some basic word decoding and follow simple commands. His performance is thought to be best characterized as inconsistent at home and school.

Initial neurological evaluation found him to be solidly right-handed, footed, eared, and eyed. Balance and coordination were good. Romberg was initially positive but was repeated and then was negative to two different confrontations. He may have been playing around a little bit and as it could not be replicated, was considered negative.

His parents indicated that he is not a behavioral problem, per say, but struggles to follow directions, complete tasks, and consistently comply with homework without constant monitoring.

TESTS ADMINISTERED

Wechsler Intelligence Scale for Children, 5th Edition (WISC-V)
Woodcock-Johnson Test of Achievement, 4th Edition (WJ-IV)
Seashore Rhythm Test
Speech Sounds Perception Test
Beery Visual Motor Integration Test
Conner Continuous Performance Test 3rd Edition (CPT-3)
Dyslexia Screening Test
NEPSY II
Personality Inventory for Children – 2
Disruptive Behavior Rating Scale – Parent Form
Disruptive Behavior Rating Scale – Teacher Form

BEHAVIORAL OBSERVATIONS

Brad is a 7-year old male who appears his age. He is average in height and weight and no dysmorphic features are noted. He was polite and cooperative throughout the evaluation and his mood was euthymic. His affect varied appropriately with the content of the subject matter and he could be rather playful during the initial evaluation. His thought processes were rational and goal directed. Brad's effort during the evaluation was good and with prompting he appeared to be able to bring his full skills to bear on the material. His motor functions were adequate for testing purposes and he showed no difficulty with hearing or sight.

RESULTS

The following section provides a brief narrative summary of the test results across various neurocognitive domains. For specific measures, raw scores, and/or demographic corrections, please refer to the NEUROPSYCHOLOGICAL ASSESSMENT RESULTS SUMMARY at the end of this report.

Intelligence

Brad completed the WISC-V to assess his overall intellectual functioning. He achieved a Full Scale IQ Score of 88, which is ranked at the 21st percentile and in the low average range. However, his scores on the Verbal Comprehension Index, Visual Spatial Index, and Fluid Reasoning Index (96, 92, and 92 respectively) indicate intellectual abilities that are more consistent with the average range. Thus, his General Ability Index would be a standard score of 94, which is in the Average range.

His Full Scale IQ score seemed to be dragged down by the difficulties in Processing Speed (SS = 80), while Working Memory was more commensurate with his intellectual ability (SS = 94). Overall, his GAI would probably be the best estimate of his intellectual functioning.

Achievement

Academic functioning was assessed using the Woodcock-Johnson Test of Achievement - III. He achieved a Broad Reading Score of 89, which is ranked at the 22nd percentile and in the low average range. Again, ability measures such as Letter-Word Identification (93) and Passage Comprehension (93) were both within the average range, while scores affected by processing speed (Reading Fluency = 82) fell within the low average range. He achieved a Broad Mathematics Score of 97, which is ranked at the 41st percentile and in the average range. The pattern was consistent with the reading with a Calculation Score of 103 and an Applied Problems Score of 96, both within the average range, and a Math Fluency Score of 79, which is ranked within the borderline range of impairment. This data would argue against the presence of a specific learning disability but rather demonstrates the impact of his poor processing speed.

Patterns of deficits consistent with developmental dyslexia were assessed using the DST. As this was a timed measure, more emphasis was given to the most salient, non-timed measures for dyslexia including verbal fluency, phonemic segmentation, regular/irregular/nonsense word reading, and rapid naming. With the exception of rapid naming, all fell within the average range. He did show difficulties in handwriting that could not be explained simply by time but rather by constructional deficits. No evidence of dyslexia was clearly demonstrated outside of his poor processing speed and his Total Scaled Score, even under timed conditions, fell within normal limits ($Z = 0.8$).

Visuospatial Processes and Motor Co-ordination

Visuo-spatial abilities and motor co-ordination were assessed using multiple methods. To further assess visual constructional abilities, the Berry-VMI was administered. All scores were within the average range. He achieved an Integration Score of 92, a Perception Score of 91, and a Motor Coordination Score of 93. Thus, while there is difficulty with handwriting, there was no evidence of constructional dyspraxia.

Follow-up testing for motor speed and dexterity were done using the NEPSY. He achieved an 89 on the Sensori-motor domain, which is ranked at the low average range. However, differences were found in comparison of upper extremities. His motor speed was average on the right hand, with borderline scores on the left. This was also true for tasks of motor precision. Thus, there was evidence of reduced motor speed and dexterity on the left hand of borderline severity.

Attention

Attentional capacity and control was assessed in a multi-method format. He had a great deal of difficulty on the auditory attention measures from the Halstead-Reitan. These deficits were obvious even under the phonemic portions, suggesting primary problems with auditory attention and not just phonemic awareness. His scores on the NEPSY-II auditory comprehension were in the high average range, however, suggesting that his difficulties on measures from the Halstead-Reitan may have more to do with figure-ground discrimination.

On the CPT-3, his profile matched better with a clinical (74.7%) than a nonclinical population based on the discriminate functional analysis. He had high scores on measures of omission, commission, detectability, and perseveration. Thus, the data argues for a more global problem with attention rather than a central auditory processing deficit exclusively. Behavioral correlates were not found from rating scales, however, it appears to fit less with an ADHD pattern and much more with a neurological pattern secondary to seizures and/or the medications used to treat them.

Language

Global language was assessed using the NEPSY-II. All language scores were in the average to high average range and would argue against any delays in those areas.

Memory

Visual, verbal and multi-modal memory were assessed using the NEPSY-II. He achieved a Scaled Score of 78, which is well below what would be expected given his IQ. In addition, most measures for immediate memory were largely intact with primary difficulties in delayed memory, even on tasks with repeated exposure. Thus, these deficits are indicative of an amnesic disorder and not simply a result of attention problems. Again these are common in seizure disorders.

Emotional Functioning

Personality and emotional functional was assessed using the PIC-2. He had a borderline elevation on one of the scales for somatic concerns but, given his medical history, this was not surprising. Several of the critical items for attention were also elevated but there was no evidence of an Axis I Mood Disorder or ADHD.

IMPRESSIONS

This is a 7-year –old male with an early history of peri-natal complications, including post-asphyxia encephalopathy, neo-natal seizures and intra-parenchymal hemorrhage. More recent history includes partial seizures with secondary generalization controlled with anti-convulsant medication. Results from the current examination revealed residual sequelae in several neurocognitive domains of borderline to mild severity. The pattern of impairment implicated attention deficits, mild bradyphrenia (slowed thinking), memory deficits and motor speed/dexterity deficits in the non-dominant hand. This pattern of impairments suggests a more diffuse process, with possible focal deficits in the right hemisphere due to the motor impairments. Of note, there does not appear to be impairment in intellectual or academic domains and general behavioral and psychological functioning are good.

The most likely cause of these deficits is epilepsy since it is often associated with impairments in attention, memory and processing speed. However, the impact of the AED is unclear except to note that no dose-dependent relationship to cognitive functioning has been established. His seizure presentation was characterized as partial onset (right hemisphere) with secondary generalization. There was mention in the records and from the family of an abnormal CT scan at birth indicating a small hemorrhage at the level of the tentorium (specific location not mentioned) and a subgaleal hematoma, which was likely the result of the vacuum extraction. The family's descriptions of early seizure activity indicated that the left side of the body showed flexion and thus the current seizure activity may have resulted from scar tissue or abnormal neural connections on that side. What can be said is that no structural abnormalities were revealed on follow-up MRI.

In terms of long-term prognosis, certainly the intact IQ and the absence of learning disabilities and behavioral problems paint a more optimistic picture. In addition, the fact that he has been seizure free for a year and a half is also some cause for optimism. The deficits in memory and the fact that he does still show some spike wave activity in the evening time when the seizure threshold is limited due to fatigue is an area of continued concern. We will not be able to assess how much his memory will improve until after we get two years stabilized on medication and then can wean him off of it at such time his EEG normalizes.

The family has talked a little bit about what immediate interventions can be done and certainly a trial on stimulant medication could prove fruitful. While it won't erase all the memory problems, it certainly could help compensate for some of those deficits in attention. They will need to discuss this with their pediatrician and attending neurologist in XXX to determine the relative cost/benefit of that type of intervention. We certainly have found that helpful in many of our cases as long as it is monitored rather closely. A follow him up in the fall when he begins classes would also be useful to help determine his immediate needs in school. In addition, a follow-up evaluation in the spring would be helpful if they do decide to pull him off medication in January and if his EEG has stabilized. At that point in time we can reassess some of the memory and see what relative progress he has made and do some planning for the next year.

DSM-5/ICD-10 Diagnoses

F06.70 Mild Neurocognitive Disorder due to Seizure Disorder

P52.9 Intracranial (nontraumatic) hemorrhage of newborn

RECOMMENDATIONS

The following recommendations were generated based on the history, neuropsychometric results, medical and school reports and consultation with the family:

1. It is recommended that Brad and his family continue with careful adherence to his current medication regimen. A follow-up appointment with his attending neurologist has been scheduled for December of this year to determine continued need for AED medications.
2. It is recommended that Brad's parents confer with the school and share data from this report (if they chose) with his school for the purposes of contributing to his IEP.
3. A follow-up appointment has been scheduled with Brad and his family in the fall school semester to determine specific needs. His teacher will also be contacted to determine his start to the year. The following recommendations were suggested by the data:
 - a. Processing speed deficits were evident on IQ and achievement testing. Brad would profit from additional time when completing long assignments. Care should be taken to see that he has an adequate opportunity to produce written work. His performance in this area will be reviewed at the fall follow-up appointment.
 - b. Brad showed difficulty with retrieval in both the verbal and visual domains. Thus, he would profit from reminders from his teacher of instructions and visual aids when multi-step instructions are given. Specific interventions for Brad will be generated once he begins the new school year.
 - c. Attentional deficits were noted on testing. Brad may profit from a trial on a medication to address this issue. However, since he does not show a tremendous amount of behavioral problems, a conference with the family and teacher in mid fall will determine his relative acclimation to the new year and contribution of attention deficits.
4. A weakness in fine motor speed and dexterity was found on the non-dominant hand. The relative contribution of this deficit to his school and recreational abilities are said to be minimal by his family. Thus, no intervention is planned. However, this deficit will be monitored throughout the year and re-evaluated at the end of this next year. If progress in development is not found, we may decide to obtain a consultation with an occupational therapist.

I appreciate the opportunity to participate in the care of Brad. If any additional information is needed, please feel free to contact me at the number listed on the front page.

NEUROPSYCHOLOGICAL ASSESSMENT DATA SUMMARY: BRAD

	<i>Score</i>	<i>T-Score</i>	<i>Rating</i>		<i>Score</i>	<i>T-Score</i>	<i>Rating</i>
INTELLIGENCE				LANGUAGE			
WISC-V FSIQ	88	42	Low Average	NEPSY-Lang Domain	109	56	Average
WISC-V VCI	96	47	Average	NEPSY-PA	13	60	High Average
WISC-V VSI	92	45	Average	NEPSY-SN	8	44	Average
WISC-V FRI	92	45	Average	NEPSY-CI	14	65	High Average
WISC-V WMI	94	46	Average	VISUOSPATIAL			
WISC-V GAI	94	46	Average	Beery VMI	92	45	Average
VERBAL MEMORY				Beery VP	91	44	Average
NEPSY-Memory for Names	6	37	Low Average	Beery MC	93	46	Average
NEPSY-Narrative Memory	7	40	Low Average	ATTENTION			
NEPSY-List Learning	7	40	Low Average	Sustained (SRT)	13	47	Average
NEPSY-LL Acquisition		44	Average	Sustained (SSPT)	16	31	Low Average
NEPSY-LL Imm Recall		43	Average	Sustained (Conner's Index)	74.7		
NEPSY-LL Del Recall		35	Low Average	Divided (LNS-WISC-V)	7	40	Low Average
NONVERBAL MEMORY				Verbal Span (WISC-V)	11	54	Average
NEPSY-Memory for Faces	8	44	Average	PROCESSING SPEED			
NEPSY-Memory for Names	6	37	Low Average	WISC-V - CD	6	37	Low Average
EXECUTIVE FUNCTION				WISC-V - SS	7	40	Low Average
CPT-3 Commissions	30	57	WNL	WJ-III RF	82	38	Low Average
CPT-3 Disc Func Anal	74.7		Impaired	WJ-III MF	79	36	Low Average
ACHIEVEMENT				SENSORY-MOTOR			
WJ-III-Broad Read	89	42	Low Average	Finger Tapping-Dom	42		Average
WJ-III-LWI	93	46	Average	Finger Tapping- <u>Non Dom</u>	54		Low Average
WJ-III-RF	82	38	Low Average	Imitating Hand-Dom	9		Average
WJ-III-PC	93	46	Average	Imitating Hand- <u>Non Dom</u>	7		Low Average
WJ-III-Broad Math	97	48	Average	EMOTIONAL FUNCTIONING			
WJ-III-Calc	103	52	Average	PIC-2 Elevations			
WJ-III-MF	79	36	Low Average	SOM1	4	62	Borderline
WJ-III-AP	96	47	Average	DBRS-Parent INT	14	64	Borderline
DST-Total	0.8		WNL	DBRS-Parent IMP	7		WNL
				DBRS-Teacher INT	14		WNL
				DBRS-Teacher IMP	6		WNL

Written Examination

Purpose

The third step is the objective exam. The purpose is to assess the candidate's breadth of knowledge in pediatric neuropsychology. The examination is a 100 question, multiple-choice instrument that was designed and constructed by other pediatric neuropsychologists who submitted questions about facts that they believed were critical or important in the practice of pediatric neuropsychology. The questions were first assessed for face validity, clustered for content area, rank ordered, deleted or refined, re-analyzed, debated, approved and then compiled. The exam is periodically updated and often includes additional questions in development that are not scored. Each exam may include the following basic core areas of review:

- Psychometrics
- Pediatric Neurosciences
- Psychological and Neurological Development
- Neuropsychological and Neurological Diagnostics
- Ethics and Legal Issues
- Research Design Review for Clinical Application
- Intervention Techniques
- Consultation and Supervisory Practices

Development

The examination is a 100 question, multiple-choice instrument that was designed and constructed by other pediatric neuropsychologists who submitted questions about facts that they believed were critical or important in the practice of pediatric neuropsychology. The questions were first assessed for face validity, clustered for content area, rank ordered, deleted or refined, re-analyzed, debated, approved and then compiled. As noted above, the exam is periodically updated and often includes additional questions in development that are not scored.

Sample Items

The following questions do not appear on any of the variations of the ABPdN Written Examination. However, these questions reflect the depth and content of actual items on the exam.

1. Which of the following is not a consequence of blood O₂ decreases secondary to an anoxic event during birth and delivery:
 - a. Increase in blood pressure
 - b. Decrease in energy consumption
 - c. Increase expulsion of waste at the cellular level
 - d. Depletion of ATP reserve

2. Which is not a primary type of synaptic reorganization of the brain following injury:
 - a. Sprouting
 - b. Straining
 - c. Spreading
 - d. Extension

3. What percentage of the human genome is devoted to neuronal development?
 - a. 5%
 - b. 10%
 - c. 30%
 - d. 50%

4. The most frequent prenatal etiologies of hydrocephalus include all but which of the following:
 - a. Spina bifida
 - b. Dandy-Walker Syndrome
 - c. Aqueductal stenosis
 - d. Arterial-venous malformations

5. Which subtest from the WISC-IV is often problematic for children with EITHER ADHD or Dyslexia?
 - a. Coding
 - b. Vocabulary
 - c. Similarities
 - d. Matrix Reasoning

Scoring

Not all domains of pediatric neuropsychology are covered equally in all exams, however the above content areas represent the core information that the applicant should reasonably expect to see on the written objective exam. A passing score on this examination is currently set at 70% (70 out of the 100 questions correct).

The examination may include up to 25 additional items that are “research” items and are used for standardization purposes. These items will not be identified separately and your responses to these items will not be calculated when arriving at your final score. A person not passing (70% is the passing point) this phase of examination will be allowed to retake this portion of the examination at its next administration.

Since scoring of the written examination takes place at a later date, the examinee can sit for the oral examination on the same day regardless of their performance on the Written Examination.

Content Areas

Appendix A provides an outline of the main content areas included in the Written Examination as well as more specific topics for consideration within each domain. Bolded areas are themes that consistently appear on the Written Examination each year.

Recommended Reading List for ABPdN Examination

The following section contains the recommended reading list for the Written Examination. Citations in bold and/or highlighted are suggested books that should be considered critical for study.

Anderson, V., Northam, E., & Wrennall, J. (2018). *Developmental neuropsychology: A clinical approach*. Second Edition. Routledge.

Baron, I. S. (2018). *Neuropsychological evaluation of the child: Domains, methods, & case studies*. Oxford University Press.

Baron, I.S. (2013). *Pediatric Neuropsychology: Medical Advances and Lifespan Outcomes*. Oxford University Press (Recommended by BRAIN)

Beauchamp, M. H., Peterson, R., Ris, M. D., Taylor, H. G., & Yeates, K. O. (Eds.). (2022). *Pediatric neuropsychology: Research, theory, and Practice (3rd Edition)*. New York: Guilford Publications.

Blumenfeld, H. (2021). *Neuroanatomy through Clinical Cases (3rd Edition)*. Oxford University Press.

Booth, R. Murphy, T., & Zebracki, K (2022). *Paediatric Neuropsychology Within the Multidisciplinary Context*. MacKeith Press

Davis, A.S. (2010). *Handbook of Pediatric Neuropsychology*. Springer

Donders, J. (2016). *Neuropsychological Report Writing*. Guilford Press

Goldberg, S. (2022). *Clinical Neuroanatomy Made Ridiculously Simple (6th Edition)*. MedMaster

Heilman, M. K. M., & Valenstein, E. (2010). *Clinical neuropsychology*. Oxford University Press.

Hodge, E.K., Kuentzel, J.G., & Hook, J.N. (2022). *Pediatric Neuropsychology: Perspectives from the Ambulatory Care Setting*. Routledge

Kolb, B., & Whishaw, I. Q. (2021). *Fundamentals of human neuropsychology (8th Edition)*. Macmillan.

Koziol, L. F. & Budding, D. E. (2009). *Subcortical Structures and Cognition: Implications for neuropsychological assessment*. Springer

Lezak, M.D., (2021). *Neuropsychological Assessment, 5th Edition*. New York: Oxford University Press.

Locascio, G. & Slomine, B.S. (2018). *Cognitive Rehabilitation for Pediatric Neurological Disorders*. Cambridge University Press.

Morgan, J. E. & Ricker, J. H. (2017). Textbook of Clinical Neuropsychology (2nd Edition). Taylor & Francis.

Nicholls, C.J. (2018). Neurodevelopmental Disorders in Children and Adolescents: A Guide to Evaluation and Treatment. Routledge

Reynolds, C. R. & Fletcher-Janzen, E. (2009). Handbook of Clinical Child Neuropsychology (3rd Edition). Springer

Sattler, J. M. (2018). Assessment of children: Cognitive foundations and applications, 7th Edition. La Mesa, CA: Jerome M. Sattler, Publisher, Inc. Sattler, JM (2018). Resource guide to accompany assessment of children: Cognitive foundations and applications, 2.

Sattler, J. M. (2022). *Foundations of behavioral, social, and clinical assessment of children*. Jerome M. Sattler, Publisher, Inc.

Semrud-Clikeman, M. & Ellison, P.A.T. (2009). *Child Neuropsychology: Assessment and Interventions for Neurodevelopmental Disorders*. Second Edition. Springer

Sherman, E. M. S., Tan, J. E., & Hrabok, M. (2021). A Compendium of Neuropsychological Tests: Fundamentals of Neuropsychological Assessment and Tests Reviews for Clinical Practice (4th Edition). Oxford University Press

Oral Examination

Purpose

The oral interview/examination portion of the overall ABPdN exam is offered on the same day as the written exam. This part of the exam will be comprised of a review of the candidate's practice sample, the nature and application of neuropsychological knowledge to their current practice, the candidate's appreciation for ethical issues and obligations, and a review of the candidate's views and philosophy on pediatric neuropsychology. The oral exam also includes a mock case review, in which the candidate is given progressively more information about a fictional case, as they develop and articulate their working hypothesis. The oral exam is intended to be a collegial opportunity for the reviewers to validate the candidate's ability to "think on their feet" and discern their preparation and readiness for board certification.

ABPdN holds oral examinations either virtually or during the in-person AAPdN Annual Conference in April or in conjunction with the National Academy of Neuropsychology and the International Neuropsychological Society conferences.

To assure standardization of the examination process, the ABPdN has established the following Oral Examination Schedule. The general pace and sequence of topics provide guidelines to minimize the possibility that applicants might receive differential treatment. The Oral Examination process is designed to be completed in approximately three hours. Within each segment, there is room for variation according to the judgment of the examination committee. Many topics will be inter-woven throughout the examination, and flexibility should be allowed if relevant to the discussion. A topic may receive more cursory exploration in its scheduled time period if it has been sufficiently covered earlier. All written materials are reviewed IN ADVANCE.

Oral Examination Schedule

<u>Task</u>	<u>Time allotted (min.)</u>
Team Meets and Organizes	10
Team Greets Candidate	10
Examination on Professional Statement and Practice Sample	60
BREAK	10
Fact Finding/Ethics	45
Research Awareness	10
<u>Exam wrap-up and Discussion.</u>	
Return practice samples to the Candidate.	5
Team Votes, Completes Forms and Writes Report	10-25

Note: Time allotments are guidelines that should be followed reasonably closely. Significant variations from the exam format and/or schedule must be by mutual agreement between the applicant and Chair and documented in a written statement describing the variations and stipulating that they shall NOT serve as grounds for the appeal of a failed examination.

Content

The Examination Committee is a committee of three Board Certified examiners, one of whom serves as Chair. No committee member may have had any significant prior or current personal, professional, or administrative relationship with the applicant or the clients in the Practice Samples.

The ABPdN recognizes that specialists in Pediatric Neuropsychology use a variety of approaches and techniques and have differing conceptual frames of reference. The ABPdN also recognizes that the effectiveness of professional practice is a function of many factors, including personal factors, level of experience and theoretical understanding. The Examination Committee Chair and Member Examiners will be selected with consideration of the theoretical orientation, knowledge base, professional interest and experience expressed in the applicant's Professional Statement. However, this is not required and is not a basis for appeal. The Chair will inform the applicant of the choices for the Examination Committee. The applicant has one week from notification to raise any concerns or objections about the proposed Examination Committee to the Chair. If the applicant does not contact the Chair within one week, it will be assumed the proposed Examination Committee is acceptable.

The ABPdN requires that the oral examination be conducted in a courteous, professional, and collegial manner consistent with the policies and procedures stated in this manual. An examiner serves as a representative of ABPdN and accepts responsibility to protect the welfare of the applicant, the confidentiality of the Practice Samples and the integrity of the examination. The relationship between the applicant and the examiners should be considered a collegial one in which the applicant is treated as a mature professional pediatric neuropsychologist.

Examiners should recognize that most applicants will experience anxiety in a face-to-face situation in which they are being evaluated by peers. This anxiety will be more apparent in some than in others. Each Examiner should be supportive and create a favorable situation in order that the applicant may demonstrate his/her specialized clinical competencies.

Prior to the Oral Examination, Examiners should prepare questions that relate to important theoretical and research concepts and professional issues generated by the Practice Samples and Professional Statement. The examination is a confidential and professional process. An Examiner will not disclose what is learned about an applicant during the examination, except in the official report to the ABPdN Central Office. All communications concerning the results of the examination shall be addressed to ABPdN via the Chair of the Examination Committee. It is not appropriate for an applicant to communicate with the Examiners about the outcome of the examination prior to receiving information about the outcome from the Central Office.

The high-quality, collegiality, relevance and standardization of the ABPdN Board Certification process are maximized by a clear and explicit manual and the training of Chairs and Examiners. Any ABPdN board certified pediatric neuropsychologist may have the opportunity to become an Examiner after appropriate training or become a Chair after appropriate experience. Interested board certified Neuropsychologists should contact the ABPdN Board of Directors. Since new Examiners require training as well, an applicant can expect to see Examiners-in-Training during their Oral Examination.

A. Introduction and Review

Many applicants will gain training in pediatric neuropsychology at all levels (doctoral, practica, internship, post doctoral residency). However, the first portion of the Oral Examination is an opportunity for the examination team to consider the scope of the applicant's body of training. This is important for the committee to ascertain more information about how the applicant practices within the field of pediatric neuropsychology (e.g. acute care, rehabilitation, outpatient, assessment, treatment) so that the Fact Finding and Practice Sample review can be conducted in the most relevant fashion. It is also an opportunity to begin the collegial nature of the Oral Examination process and to ensure that any questions or concerns about the process have been answered at an appropriate level. This section is broken into two parts:

Part I: The examinee will have the opportunity to explain their background.

- The examinee will be asked to provide a verbal history of their educational and professional background. Special consideration should be given to their pediatric neuropsychological training and background.
- The examinee will be asked to explain their current role as a pediatric neuropsychologist and with what issues their typical clientele present.

Part II: The examinee will be asked to cover pertinent knowledge areas of practical pediatric neuropsychology. Possible questions include:

- Please reflect upon the differences between pediatric neuropsychology and adult neuropsychology.
- Please review developmental factors that should be considered in a pediatric neuropsychological evaluation.
- Please review factors that are germane to pediatric traumatic brain injury (TBI) that are not as much of a factor in adult TBI, etc

B. Review of Practice Samples

If the Practice Sample meets the pass criterion (a minimum of two passing votes), the applicant then proceeds to the oral portion of the examination. The Oral Examination allows the applicant to present the material in their Practice Sample and to provide an overview of the history, evaluation process and outcome of the case. The examiners are concerned with the applicant's ability to articulate the major findings and their rationale.

Applicants should be aware that although their Practice Sample was deemed appropriate for presentation at the Oral Examination, it does not mean that the reviewing members did not have any questions or concerns regarding their work product. Applicants should be prepared to discuss their rationale in such areas as:

(1) test selection (if applicable)

Included in this area are discussion points such as: psychometric properties, test validity/reliability, limitations for use, exclusion of all competing diagnoses.

(2) test interpretation (if applicable)

Included in this area are discussion points such as: alternate interpretations of findings, conflict resolution within the data, discussion of strengths and weaknesses, environmental and cultural factors.

(3) diagnostic conclusions

Included in this area are discussion points such as: alternate diagnosis, ultimate understanding of neuropathology, prognosis, progression, lateralizing/localizing effects, pathognomic signs, causality, environmental conditions, effects on neural development.

(4) recommendations and treatment planning

Included in this area are points such as: best practices for treatment, availability, prognosis, funding, delivery options, cost/benefit analysis, iatrogenic outcomes, parental compliance/agreement, and ethical issues.

(5) consultation and supervision (if applicable)

Included in this area are discussion points such as: best practices for communication of data, delivery options, supervisee needs/relationships, rapport/therapeutic relationship.

Again, this process is intended to be collegial and the examiners are well aware that there are many different and yet equally viable approaches within pediatric neuropsychology to the assessment and treatment of neurological conditions. The purpose is to ascertain the logic and thought processes of the applicant and to allow them to demonstrate their ability to “think on their feet”.

C. Fact Finding Vignettes

During the Fact Finding segment of the Oral Examination, the applicant will be given one of two standardized vignettes to discuss. The Examining Committee does not necessarily expect a “right” answer, but anticipates that the applicant will present relevant options and demonstrate the ability to thoughtfully weigh the medical history, test data and background information to derive diagnosis and treatment options.

No outside materials can be used to aid the applicant during this section of the Oral Examination.

At the conclusion of the Oral Examination, all copies of the vignettes are collected by the Chair; with a copy being maintained at ABPdN Central Office for archival purposes. The use of each vignette will be tracked so that in the case of an applicant’s failure, a new vignette will be used for re-examination.

Examiners and Candidates will treat the vignettes as confidential.

Scoring

Each domain area of the oral examination will be ascribed a judgment of ‘No pass’, ‘Borderline’, ‘Pass’, or ‘High Pass’.

Fail – (1 point) The examinee did not show the requisite knowledge base needed in order to perform as a competent, unsupervised practitioner of pediatric neuropsychology.

Borderline – (2 points) The examinee is able to express the requisite knowledge base, but could benefit from further training or supervision.

Pass – (3 points) The examinee expresses the requisite knowledge base at a competent level and can practice as a pediatric neuropsychologist independently and without supervision.

High Pass – (4 points) The examinee expresses a superior knowledge base and can practice as a pediatric neuropsychologist independently and without supervision.

The total points possible from each examiner is twenty (20) and a passing cumulative score is fourteen (14) points. Section A is worth 12 points, B & C are worth 4 each. The total points possible from the Oral Examination Board is sixty (60) and a passing cumulative score is forty two (42) points (70%).

Criterion Examples of Competencies

Inter-woven throughout the Oral Examination are several of the core competencies of ABPdN. Examples of the demonstration of these competencies are provided below to assist the applicant in understanding how the examiners operationalize these areas. These are not meant to be the only ways each area can be demonstrated. Rather, these are meant to provide examples.

1. Science Base and Application – Psychometrics

- a. Understands patients/clients and their problems with conceptual breadth and depth. This involves having a definable set of constructs or a theoretical orientation of sufficient complexity to allow a rich discussion.
- b. Critically evaluates research and professional literature and discusses implications for practice.

Passing Level Examples:

- Presents a coherent and reasonably comprehensive explanation of patient/client behavior.
- Demonstrates awareness of research and other publications relevant to his or her practice.
- Demonstrates awareness of diversity factors relevant to his / her practice.

Failing Level Examples:

- Explanations of patient/client behavior may be accurate, but lacks support and omit obviously useful constructs.
- Is largely unaware of current research or has an inaccurate reading of that research.
- Is largely unaware of diversity factors relevant to his / her practice.

2. Assessment – Pediatric Neurosciences

- a. Chooses procedures appropriate for referral needs and appropriate for patient/client.
- b. Interprets assessment and evaluation data accurately.
- c. Applies assessment and evaluation data and draws conclusions appropriately.
- d. Uses the assessment and evaluation data in conceptualizing the case.

- e. Communicates results in ways that lead to useful outcomes for diagnosis and treatment while minimizing the likelihood of misuse.

Passing Level Examples:

- The assessment and evaluation procedures chosen could, at least in theory, provide data that could answer the referral questions and are appropriate for all aspects of the patient's/client's diversity status.
- Interpretations and conceptualization of assessment and evaluation data are reasonably accurate and complete.
- Interpretations and conclusions take into account client uniqueness (diversity considerations) and environmental situation.
- Assessment or evaluation results are communicated clearly and unambiguously and show effort to avoid foreseeable, inappropriate interpretations by others.

Failing Level Examples:

- Procedures chosen restrict the examinee's ability to respond appropriately to the referral questions, or are inappropriate for the patient's/client's ethnic status.
- Scoring, interpretations and/or conceptualization of assessment and evaluation data are incomplete or contain errors.
- Interpretations and conclusions fail to take into account some aspect of the patient/client's uniqueness (diversity status) and/or fail to take into account the patient/client's environmental situation.
- Assessment results are communicated in an unclear, disorganized or ambiguous manner, or fail to anticipate foreseeable, inappropriate interpretations.

3. Psychological and Neurological Development

- a. Manages treatment contract issues (patient's/client's goals, boundaries of treatment, payment resources, etc.) well.
- b. Chooses procedures appropriate for patients/client's issues and diversity status.
- c. Applies interventions with a high-quality level of skill.

Passing Level Examples:

- Patient's/client's goals are assessed; issues regarding payment arrangements are dealt with appropriately; limits of confidentiality and boundaries of services are defined clearly.
- Interventions are appropriate to patients/client's assessed goals, situation, and resources.

Failing Level Examples:

- Patient/client goals are ignored or not adequately determined.
- Payment arrangements are not clearly defined. The course of action to be taken when payment resources are exhausted is not discussed.
- Limits of confidentiality are not discussed or are not clearly defined.
- Provider services and availability are not clearly defined.
- Interventions chosen are not consistent with the patient/client's goals, situation or resources.
- Interventions provided are not consistently of high quality, are not thought out in advance or are not communicated effectively.
- Clinical record-keeping practices are below accepted standards.

4. Neuropsychological and Neurological Diagnostic Methodologies

- a. Candidate selects, administers, scores, and interprets assessment measures germane to the referral question.
- b. Candidate has reviewed prior records, and commented on any prior psychological, neuropsychological, or neurology consultations provided to the individual.
- c. Based on findings from evaluation conducted by candidate, appropriate referrals, if indicated, are made for MRI, E.E.G. or other neuro-diagnostic procedures.

Passing Level Examples

- Prior records reviewed and negative E.E.G. findings are commented on by the candidate.
- Prior records reviewed and MRI findings are commented on and integrated with current test data.

Failing Level Examples

- Failure to recommend or make a referral for neurology consultation when clinical history indicates it is warranted (i.e. ELBW)
- Failure to address salient medical records in patient's clinical history.

5. Ethics and Legal Issues

Demonstrates knowledge of and effective application of ethical principles, professional practice standards, legal standards in clinical practice, and implications for these principles.

Passing Level Examples:

- Demonstrates awareness of the ethical implications of various situations. Can cite an ethical quandary from own practice and describe appropriate responses.
- Demonstrates awareness of statutory reporting and other legal requirements that practitioners must follow in their jurisdiction, can cite an example from their own practice when these requirements were relevant and can describe appropriate behaviors in response.

Failing Level Examples:

- Is unaware of important ethical implications, professional practice standards, or legal requirements that should inform his/her practice behavior.
- Is aware of ethical implications, practice standards or legal requirements, but does not comply.
- Is aware of ethical implications, practice standards or legal requirements, but seems incapable of determining whether or how to proceed in accord with such standards.

6. Research Design Review for Clinical Practice

- a. Demonstrates awareness of the activities involved in, and the complexities of the supervisory relationship.
- b. Demonstrates awareness of the parameters for consultation and the limitations of training and competence that require consultation.

Passing Level Examples:

- Is aware of the fundamental aspects of the supervisory relationship.
- Is aware of the fundamental aspects of the consultative relationship.
- Provides good examples of seeking supervision or consultation in his/her practice.

- Provides supervision and consultation in his/her practice.

Failing Level Examples:

- Offers consultation or supervision in areas outside of his/her sphere of training or competence.
- Is unaware of the potential emotional impact of the professional relationship.
- Demonstrates poor judgment or unethical behavior in the supervisory or consultative relationship.
- Fails to keep the commitment made in the professional relationship.
- Fails to maintain proper professional boundaries.
- Utilizes the supervisory or consultation relationships for his or her own personal advantage to the detriment of the client or supervisor.

7. Commitment To and Involvement in the Specialty of Pediatric Neuropsychology

- a. Demonstrates active participation in the profession.
- b. Describes current issues facing the profession and their implications for patient/client welfare.
- c. Seeks consultation and supervision when needed.
- d. Seeks ongoing training and continuing professional education.

Passing Level Examples:

- Belongs to more than one professional organization.
- Provides pro bono or low fee professional services.
- Is aware of significant issues facing the profession and describes predictable consequences for practice.
- Participates in continuing professional education activities.
- Has sought consultation on occasion.

Failing Level Examples:

- Belongs to one or no professional organizations.
- Does not participate in the life of the profession.
- Is unaware of any significant issues facing the profession.
- Is aware of some significant issues facing the profession, but misunderstands their implications for practice.
- Can not cite an example of seeking consultation
- Does not participate in continuing professional education activities

Immediately upon the completion of the oral examination, each member of the Examination Team completes and signs the Rating Grid for the Oral Component of the Examination. The Forms are submitted to the Examination Committee Chair who notes the votes. Two votes to pass constitute a pass and two votes to fail constitute a failure.

Repeating Portions of the ABPdN Examination Process

Practice Sample

As mentioned previously, a panel of ABPdN examiners will review the applicants Practice Sample as a stand-alone competency of written work and understanding of the field of pediatric neuropsychology and as a defensible document for the purposes of the Oral Examination. Passing the Practice Sample does not necessarily imply that ALL reviewers felt the document was of sufficient quality since it takes only two out of three reviewers to pass at this stage. However, questions or concerns raised at this level will be addressed at the Oral Examination provided the applicant passes with at least two of the reviewers.

In the event that an applicant fails the Practice Sample of the examination process, the applicant will be notified in writing of this and offered some specific feedback on areas of weakness. In addition, the applicant may request a mentor or if they have a mentor, they may request their mentor to appropriately aid in planning their remediation of their Practice Sample.

The candidate will then submit an alternative Practice Sample incorporating the feedback provided by the Examination Committee and their mentor (if desired). Typically, when an applicant fails this stage of the examination, it is not due to any limitation in their professional development. Rather, the most likely reasons for failure are (1) an incompletely redacted Practice Sample, (2) an overly complicated sample that appeared to be submitted to reflect the applicant's clinical acumen rather than typical patient, (3) a failure to provide all necessary documentation (4) a misinterpretation of a particular instrument that led to an erroneous conclusion.

Many of these errors can be easily corrected with the next sample and specific feedback will be provided to the applicant as to how to avoid these errors in the future. Remember, it is the goal of ABPdN to ensure that ALL competent pediatric neuropsychologists will complete the boarding process.

Written Examination

Applicants who fail the Written Examination will generally not be informed until several weeks after the completion of the examination. Applicants will be notified in writing as to their performance and (upon request) may ask for guidance as to specific areas of weakness. Applicants will be able to re-take the examination at the next opportunity (e.g. NAN, INS, and AAPdN). In some instances, an applicant may be proctored by another ABPdN member if they are unable to attend the next scheduled examination. Requests for this accommodation should be made to the Executive Director or Examination Chair. Applicants should be aware that the next examination may not contain the same relative percentages of questions from all content areas, nor is it likely to contain a significant overlap of questions from their previous Written Examination.

Oral Examination

The report of the Examination Committee will be sent to the unsuccessful applicant. This letter will contain verbatim and compiled feedback from the Examination Committee and is to be written by the Chair of the Examination Committee with consultation from the Committee and sent to the Central Office via fax or email within one week following completion of the oral exam.

The report of the Examination Committee to the unsuccessful candidate should reflect the ratings and comments of the Committee as a whole. It should be written with the clear understanding that the report will be sent unedited to the Candidate and will become a part of the Candidate's permanent file in the ABPdN Central Office.

The report will achieve three essential objectives:

- Documentation of the outcome of the examination and the rationale or support for that outcome. This should include comments of the examiners based on the ratings in the examination areas.
- Identification of specific areas of weakness manifested in the applicant's performance, along with suggestions for how the applicant might address these areas in order to confidently and successfully approach re-examination.
- Identification of specific areas of strength in the applicant's performance to emphasize the competence of the applicant and to provide balance in the report.

The report will:

- Begin with an opening statement that sets a positive and constructive tone regarding the applicant's overall professional competence and interaction in the examination.
- Address each of the scoring areas in the Examination Manual. The wording of comments can follow closely the wording of the scoring examples with reference to the applicant's performance. For each scoring category rated a weakness, a specific suggestion for remediation should be offered.
- If the letter is sufficiently lengthy so that a summary is needed, the summary should address the applicant's overall performance. It should review areas of strength as well as weakness, and suggest remediation to reiterate the collegial and constructive intent of the report.

It is important for the Chair to be sensitive, diplomatic, and constructive in writing a report that is certain to be read very carefully by the applicant. It is important to be objective and descriptive. Suggestions should be realistic and appropriate to the extent that if the applicant follows the recommendations, he/she would likely be in a position to fare better upon re-examination. Likewise, it is important not to be judgmental, inflammatory, or pejorative in words or tone.

The report from the Chair should focus on the applicant's performance during the Oral Examination, without any assumption that the unsuccessful performance is necessarily characteristic of the applicant's usual practice. The Chair should assume that all unsuccessful applicants will want to improve their performance and re-take the exam in the near future. If a particular problem in terms of reporting on an applicant's performance is encountered, the Chair should consult the other members of the Examination Committee first, then the Regional Board Member if concerns still exist.

Unsuccessful applicants have a right to know why they failed. The Chair should be clear in giving examples, but should avoid being overly specific. Although examples for each problem identified in the examination

need not be reported, the Chair should have such examples available in personal documentation in the event of an appeal or inquiry. The Chair should not report problems that are not related to required passing criteria or cannot be supported by the documentation available. In using examples, the Chair should feel confident that he/she understands exactly what the applicant did and what the problem was. If this is not accurate, the applicant may have a legitimate basis for complaint that the Fail judgment was based on inaccurate information. Unsuccessful applicants should be reminded that they have a right to appeal the decision of the Examination Committee on procedural grounds.

Strategies for Preparing for the ABPdN Examination Process

The ABPdN examination process was developed with the ultimate goal of ensuring the public that the practitioner certified by ABPdN has the requisite skill set, professional competency and ethical standards necessary to practice within the specialty of pediatric neuropsychology. This is not an elitist board created to establish a set of standards that prevents competent clinicians from obtaining membership. The members of every examination committee and every reviewer are committed to ensuring that every applicant that makes it through the initial credential review will complete the ABPdN process. Applicants should be aware that the current pass rate for the process is 69% for the first try and it is expected that applicants who fail any one stage (typically the Written Examination) will gain the necessary feedback and mentoring to allow them to pass the exam on the next try. So far, that has been the case for those who chose to repeat a stage.

Practice Sample

Applicants are strongly encouraged to pick a **typical** case for submission. If your practice is made up of mainly ADHD, Dyslexia, Seizure Disorders or Autism, please choose a disorder from that category. Many applicants worry that they must choose a known neurological condition or one that involves an extensive amount of testing. Ultimately, the best sample is one that has a clearly defined referral question, a well conducted interview, a thorough attempt to obtain all relevant records, a battery designed to assess the referral question and cogent treatment recommendations. When this occurs, the applicants are almost always successful.

Here are some Do's when choosing a practice sample:

- Present a case that is typical of your practice
- Present a case where history and relevant information is available
- Ensure that test data (if applicable) was obtained in all domains related to the child's needs and their specific pathology
- Deal effectively with conflicts in the data
- Interpret all findings and consider potential alternatives
- Provide useful recommendations that are consistent with the child's current environment(s)
- Provide a diagnosis that accounts for all presenting issues
- Consider all relevant referrals needed

Here are some Don'ts when choosing a practice sample:

- Pick a case that you "think" demonstrates your clinical acumen
- Provide a case with limited history or accompanying information (if applicable)
- Rely on broad instruments to inform multiple domains
- Assume the purpose of the evaluation is simply to derive a diagnosis
- Pick a case that is exclusively clinical or school based*

*Please feel free to call the Exam Chair if help is needed

Applicants who choose to submit a case conceptualization or supervision tapes should ensure that their recordings contain interventions specifically related to the treatment goals, they have a clear

conceptualization of the case, have researched the most effective and evidenced-based practices with regard to the population, build and maintain rapport and can demonstrate mechanisms of change. Again, care should be taken to redact all recordings and obtain appropriate consent.

Written Examination

This can be the most daunting portion of the examination process. For many, it has been several years since they studied for any examination and it is difficult to know how to begin. The examination covers several domains that most pediatric neuropsychologists will have extensive knowledge of and will “carry around in their heads” from working in the field. The examination also contains material from several of the most useful texts in the field. Care should be given to those listed in bold. Applicants should pay particular attention to the texts on neural-development, neuroanatomy and neuropathology. These are quite prevalent on most examinations.

Time management and good study habits will lead to the best results. Applicants are strongly encouraged to discuss with their mentors the best ways to prepare for the examination. Again, this is the portion most often failed by applicants and there is no shame in this. To date, all applicants who have chosen to retake the examination have passed and are now boarded by ABPdN.

Oral Examination

Although applicants are examined by experts in the field and are paired with ABPdN members who have expertise in the particular case under consideration, the applicant is still the expert in that particular case. The review of the sample is a time for applicants to provide a cogent rationale for their choices in the assessment or treatment process and they should be prepared to articulate and defend those choices. There is generally no “right answer” for these types of questions. Rather, the committee is interested in how the applicant thinks through their decision making process. During the Fact Finding portion, the applicant will receive case vignettes to help evaluate how they think through an alternative case in the moment and how they “think on their feet”. This is not unlike the vignettes used during the initial application process.

Applicants should be prepared to discuss how they gather data that leads them to battery design, behavioral observations and treatment planning. Again, there is often no right answer. Rather an opportunity for the committee to observe how the applicant thinks through the process.

It is our hope at ABPdN that all qualified applicants complete the process and our goal to do everything we can to support and encourage every applicant willing to have their professional credentials and identity reviewed. Applicants are encouraged to ask questions along the way and should be assured that they will be treated with the utmost respect.

APPENDIX A

Areas of Competency Necessary for Examination

Part I: Basic Neurodevelopment

Early Neural and Cognitive Development

- **Candidates should be familiar with principles of neural development**
- **Candidates should be familiar with the sequence of neural development**
- **Candidates should demonstrate an awareness of development of functional neuropsychological systems**

Themes in Pediatric Neuropsychology

- Candidates should have an awareness of cerebral lateralization research.
- **Candidates should be able to locate major brain regions in cortical and sub-cortical areas**
- **Candidates should be familiar with literature relevant to sex differences**
- Candidates should be familiar with critical developmental windows, plasticity, as well as recovery of function.
- Candidates should be familiar with disconnection syndromes
- Candidates should be able to demonstrate an awareness of epidemiology and classification of pediatric neuropsychology disorders.
- **Candidates should be familiar with major instruments in the field with respect to systems in the brain they assess**
- **Be familiar with test instruments frequently used to assess various neurocognitive conditions in children, their limitations (e.g. concept of “downward extension”), their subtests, and age ranges**

Disorders of Development

- **Candidates should be familiar with chromosomal and genetic disorders and the developmental outcomes for these disorders**
- **Candidates should be familiar with structural abnormalities of the central nervous system, and the impact such abnormalities have on neuropsychological functioning**
- **Candidates should be familiar with issues pertaining to prematurity and low birth, and the neuropsychological deficits associated with low birth weight**
- Candidates should be familiar with the impact that infections can have upon neuropsychological functioning, and the long-term impact that certain infections may have on neuropsychological functioning
- **Candidates should be familiar with the impact of neurotoxins on neuropsychological functioning of pediatric populations**
- **Candidates should be familiar with nutritional disorder and their impact on the neuropsychological functioning of pediatric populations**

- **Candidates should be familiar with the impact of anoxia on neuropsychological functioning, risk factors for severity, and clinical outcomes**
- **Candidates should be familiar with literature pertaining to traumatic brain injury**
- Candidates should be familiar with focal neurological disorders
- **Candidates should be familiar with Seizure disorders**
- **Candidates should be familiar with literature regarding hydrocephalus**
- **Candidates should be familiar with literature pertaining to brain tumors**
- Candidates should be familiar with Meningitis
- Candidates should be familiar with Neurofibromatosis

Part II: Neuropsychological Dysfunction in Medical Disorders

- Candidates should be familiar with Turner Syndrome
- Candidates should be familiar with Phenylketonuria
- Candidates should be familiar with Acute Lymphoblastic Leukemia
- Candidates should be familiar with Sickle Cell Disease
- Candidates should be familiar with Diabetes
- Candidates should be familiar with Renal Disease
- Candidates should be familiar with Human Immunodeficiency Virus

Part III: Disturbances of Function

- Candidates should be familiar with Soft Neurological Signs
- **Candidates should be familiar with Attention Deficit Hyperactivity Disorder**
- Candidates should be familiar with Sensorimotor, Motor, and Disorders of Praxis
- Candidates should be familiar with Visual Disorders
- Candidates should be familiar with Auditory Disorders
- **Candidates should be familiar with Language Disorders**
- **Candidates should be familiar with Learning Disabilities**
- Candidates should be familiar with Tourette's Syndrome
- **Candidates should be familiar with Autism and Pervasive Developmental Disorders**
- Candidates should be familiar with Turner's Syndrome
- **Candidates should be familiar with Fragile X Syndrome**
- Candidates should be familiar with the Mucopolysaccharidoses
- Candidates should be familiar with Noonan Syndrome
- Candidates should be familiar with Klinefelter Syndrome
- Candidates should be familiar with Rett's Syndrome

Part IV: Intellectual Disability

- Understand current psychological theories of intelligence
- Understand the levels of severity of intellectual disability
- Know the diagnostic criteria and differential diagnosis for intellectual disability
- Understand the interaction of environment and biology in the etiology of intellectual disability
- Know the risk factors related to the causes of intellectual disability
- Understand the academic potential, occupational potential, and independent living potential of individuals with the different levels of intellectual disability
- Know the conditions that may affect the validity of assessments of intellectual ability
- Understand the specific behavioral, educational, and social challenges associated with each developmental stage for a child with intellectual disability
- Know the common etiologies of intellectual disability
- Know the educational interventions available for children with intellectual disability
- Plan the neuropsychological evaluation of a child with intellectual disability
- Understand the effects of early intervention for children with developmental delays
- Interpret the psycho-educational assessment of a child with intellectual disability
- Know the co-morbid conditions associated with intellectual disability
- Understand the appropriate educational interventions and accommodations for a child with intellectual disability
- Plan the treatment of common behavioral and emotional problems associated with intellectual disability
- Understand the principles of planning for the transition to adulthood for youth with intellectual disability
- Know the epidemiology of intellectual disability

Part V.

A. Language and Learning Disorders

- Understand the discrepancy definition and low achievement definition of learning disabilities
- Know how to plan the evaluation of a child for a learning disability
- Understand the structure of educational interventions attempting to provide the least restrictive environment (e.g., classroom aide, resource room)
- Understand the overlap between intellectual disability and learning disorders
- **Know the epidemiology and natural history of learning disabilities**
- Understand the issues related to differentiating learning disabilities from normal variations in academic skill acquisition

B. Reading disorder

- Understand the cognitive and adaptive skills that are necessary for the typical development of reading abilities.
- Understand the relationship between early language delays and later reading disorders
- **Understand current concepts of the genetics of reading disorders**

- Understand the current concepts regarding the underlying neuropsychological deficits in reading disorders
- Understand the appropriate educational interventions and accommodations for children with a reading disorder
- **Understand the range of prognoses for children with a reading disorder**
- **Know the specific CNS localization of deficits related to reading disorder**
- **Know the conditions commonly associated with reading disorder**
- Understand that reading disorders may result in academic failures in other subject areas
- **Know the diagnostic criteria for reading disorder**
- **Recognize the symptoms of reading disorder**
- **Know the differential diagnosis for low achievement in reading**

C. Mathematics disorder

- Understand the appropriate educational interventions and accommodations for a child with mathematics disorder
- Understand the range of prognoses for children with mathematics disorder
- Know the conditions commonly associated with mathematics disorder
- Know the diagnostic criteria for mathematics disorder
- Recognize the symptoms of mathematics disorder
- Understand the cognitive and adaptive skills that are necessary for the typical development of mathematics abilities
- Know the current concepts regarding the underlying neuropsychological deficits in mathematics disorder
- Know the differential diagnosis for low achievement in mathematics

D. Other academic disorders

- Know the diagnostic criteria for disorder of written expression
- Understand the cognitive and adaptive skills that are necessary for the typical development of writing and spelling abilities
- Know the differential diagnosis of disorders of written expression and spelling
- Know the components of the evaluation of children for disorders of written expression or spelling
- Know the appropriate educational accommodations for children with spelling disorder or disorder of written expression
- Recognize the signs and symptoms of a non-verbal learning disorder
- Understand the natural history of non-verbal learning disorders
- Know the conditions commonly associated with non-verbal learning disorders
- Recognize the symptoms of disorder of written expression
- Know the appropriate educational interventions and accommodations for children with non-verbal learning disorder

E. Speech and language disorders

1. Language

- **Understand the distinction between speech and language**
- **Distinguish the phonological, semantic, grammatical, and prosodic aspects of language**
- **Know the differential diagnosis of language disorders**
- **Understand the role of hereditary factors in language disorders**
- Understand theories about the causes of language disability
- **Recognize disabilities in semantic, phonological, grammatical, as well as prosodic skills**
- **Understand the distinction between receptive and expressive language skills**
- Know the diagnostic criteria for mixed expressive-receptive language disorder and expressive language disorder
- Know how to plan the evaluation of a child with language delay
- Know how to plan the management of a child with a language disorder
- Know the range of prognoses for children with different types of language disorders
- Understand the neural basis of language functioning and language development
- Understand the impact of exposure to more than one language (bilingual household) on language development
- Understand the role of environmental factors in language disorders
- **Understand the neural basis for language disorders**
- **Know the epidemiology of language disorders**
- Recognize the signs and symptoms of language disorders

2. Speech disorders

- Understand the distinctions among articulation, voice/resonance, and fluency
- Know the pathophysiological factors that affect articulation
- Recognize the developmental progression of articulation skills
- Know the definitions of dysarthria and oral-motor dyspraxia
- Know how to plan the evaluation of a child with articulation abnormalities
- Know the differential diagnosis of a child with articulation delays
- Know how to plan the management of a child with speech abnormalities
- Understand the range of prognoses for children with articulation disorders
- Understand the normal development of speech fluency
- Know the criteria for referral of a child with speech dysfluency
- Know how to plan the management of a child with speech dysfluency
- Understand the prognosis for a child with speech dysfluency
- Know the pathophysiological factors that affect voice and resonance
- Know how to plan the evaluation and management of a child with abnormalities of voice or resonance
- Know the prognosis for a child with abnormalities of voice or resonance

3. Selective mutism

- Recognize the signs and symptoms of selective mutism
- Differentiate between selective mutism and other conditions affecting speech and language
- Know how to plan the evaluation of a child with selective mutism
- Know how to plan the management of a child with selective mutism
- Differentiate selective mutism from normal variations in a child's comfort speaking in social settings

Part VI: Motor Disabilities and Multiple Handicaps

A. Cerebral palsy

- Recognize signs in early infancy that are associated with the later development of cerebral palsy
- **Recognize the signs and symptoms of spastic cerebral palsy**
- **Know the prevalence and epidemiology of cerebral palsy**
- **Distinguish the different subtypes of spastic cerebral palsy**
- Recognize the signs and symptoms of extrapyramidal cerebral palsy
- Know specific causes of the different types of cerebral palsy
- Distinguish cerebral palsy from spinal cord injuries, peripheral motor disorders, and lower motor neuron lesions
- Know how to plan the management of a toddler or preschooler with cerebral palsy
- Know how to plan the management of a school-age child or adolescent with cerebral palsy
- Evaluate early intervention and physical therapy in the management of cerebral palsy
- Know the pharmacological management of spasticity
- Know the natural history of cerebral palsy
- Know the pharmacological management of drooling in children with cerebral palsy
- Understand the neurological, orthopedic and/or ophthalmological complications associated with cerebral palsy
- Know the developmental and behavioral characteristics of individuals with cerebral palsy
- Know the range of prognoses for children with different types of cerebral palsy

B. Myelodysplasia

- Understand the high prevalence of hydrocephalus and Chiari malformation in children with myelodysplasia
- Understand the relationship between the level of myelodysplasia and motor and cognitive dysfunction
- Know how to plan the management of children with different levels of myelodysplasia
- **Know the conditions commonly associated with myelodysplasia**
- **Understand the relationship between genetic and environmental factors in the etiology and prevention of myelodysplasia**
- Understand the urological, neurological, and/or orthopedic complications associated with myelodysplasia
- Know the developmental and behavioral characteristics of individuals with myelodysplasia

C. Muscular dystrophy

- Recognize the signs and symptoms of Duchenne muscular dystrophy
- Understand the long-term prognosis for a boy with Duchenne muscular dystrophy
- Know how to plan the laboratory evaluation for a child with progressive muscular weakness
- Understand the genetics of Duchenne muscular dystrophy
- Know how to plan the management of a boy with Duchenne muscular dystrophy
- Understand the neurological and orthopedic complications associated with muscular dystrophy
- Know the developmental and behavioral characteristics of individuals with muscular dystrophy
- Recognize the cases of non-Duchenne muscular dystrophy.

D. Tics

- Differentiate tics from voluntary and other involuntary movements, such as chorea, athetosis, and ballismus
- Know the epidemiology of tics and tic disorders
- Know the diagnostic criteria for tic disorders, including transient tic disorder, chronic tic disorder, and Tourette's Syndrome
- Describe the natural history of tics and tic disorders
- Know the conditions commonly associated with Tourette's Syndrome (e.g., ADHD and OCD)
- Understand the pathophysiology of Tourette's Syndrome
- Plan the evaluation and treatment of a child with a tic disorder
- Know the pharmacological interventions that can be helpful in management of tics
- Recognize the behavioral and developmental complications of Tourette's Syndrome
- Understand the genetics of Tourette's Syndrome

E. Other

- Plan the evaluation of an infant with hypotonia
- Recognize the typical presentation of developmental coordination disorder
- Know appropriate management strategies for a school-age child with developmental coordination disorder
- Know the causes of congenital hypotonia
- Know the signs and symptoms of spinal muscular atrophy (SMA)

Part VII: Autism Spectrum Disorders

A. Autism

- **Know medical conditions commonly associated with autistic disorder**
- **Know the etiologies, diagnostic criteria, and differential diagnosis for autistic disorder**
- Understand the deficits of children with autistic disorder in joint attention, social referencing, and

theory of mind

- Know how to plan the psycho-educational evaluation of a child with autistic disorder
- Know how to plan the medical evaluation of a child with autistic disorder

Part VII: Child Abuse and Neglect

A. Physical abuse

- Know the parental risk factors associated with physical abuse of young children (e.g., stress, isolation, parental abuse, substance abuse, poverty)
- Know the child risk factors that predispose to physical abuse (e.g., prematurity, disability, irritability, male gender)
- Describe common screening techniques to identify children at risk of physical abuse
- Recognize signs and symptoms of physical abuse
- Understand the legal and clinical implications of reporting physical abuse
- Recognize characteristics of fractures caused by physical abuse
- Know the signs and symptoms of "shaken baby syndrome"
- Know the long-term outcome of physical trauma

B. Sexual abuse

- Know the risk factors for sexual abuse
- Recognize psychological physical signs and symptoms of sexual abuse

C. Factitious disorder by proxy (Munchausen syndrome by proxy)

- Recognize signs and symptoms suggestive of factitious disorder by proxy
- Know family risk factors often seen in cases of factitious disorder by proxy
- Know how to plan the management of cases of factitious disorder by proxy
- Know how to diagnose factitious disorder by proxy

D. Child neglect

- Know common developmental and behavioral sequelae of chronic neglect
- Understand how the developmental and behavioral symptoms of neglected children vary with stages of development
- Know the legal definition of child neglect
- Know how to plan the management of chronic neglect
- Know the parental risk factors associated with child neglect
- Recognize child neglect as the most common form of child maltreatment
- Know the child risk factors that predispose to child neglect
- Describe interventions that can lower the risk of child neglect (e.g., home nurse visits)

Part VIII: Law, Policy, and Ethics

A. Legal rights and processes

1. Individuals with disabilities

- Know the criteria for early intervention or special education for children from birth through 21 years of age
- Understand the different implications of the Americans with Disabilities Act for public, private, and parochial schools
- Know the components of an Individual Family Service Plan (IFSP)
- Understand parents' rights to participate in special education decisions as described in the Individuals with Disabilities Education Act (IDEA)
- Understand how to apply the concept of least restrictive environment to designing an educational program for a child with a disability
- Understand the components of the Individuals with Disabilities Education Act (IDEA)
- Describe the eligibility criteria for services described in the Individuals with Disabilities Education Act (IDEA)

Part IX: Ethics

1. Treatment

- Understand the ethics of participation of the competent adolescent patient in decisions to withhold treatment in serious, life-threatening medical conditions
- Understand the appropriateness of psychiatric hospitalization of a young adolescent who the clinician feels is at serious risk of self-harm when the parent and child do not agree to hospitalization
- **Understand the three elements of informed consent - information, comprehension, and voluntariness - and how it can be applied to children**
- **Know the limits of confidentiality of disclosures of child patients to neuropsychologists**
- Understand the legal and ethical implications of drug screening in adolescents
- Understand the ethical implications of potential financial conflicts of interest of treating neuropsychologists and how to avoid and manage such potential conflicts

2. Research

- Know the circumstances in which passive consent to participate in research is acceptable
- Understand the ethics of exclusion of children from participation in research protocols
- Understand the roles and responsibilities of the investigator in human subject research
- Know the definition of scientific misconduct
- Know the purpose and function of an Institutional Review Board
- Know what populations are considered as vulnerable in research
- Know the unique considerations regarding the participation of individuals with cognitive disabilities in research.
- Understand the ethical implications of potential conflicts of interest of research investigators and how to avoid and manage such potential conflicts

Part X: Principles of Research**A. Epidemiology and statistical analysis**

- **Distinguish between incidence and prevalence**
- **Know how to calculate sensitivity and specificity**
- **Know how to calculate positive predictive value and negative predictive value**
- **Understand that positive and negative predictive values depend on the prevalence of a disease within the population being screened**
- **Understand how to calculate the joint probability of two independent events**
- **Recognize the difference between nominal, ordinal, and continuous data**
- **Understand various measures of central tendency, such as mean, median, and mode** Be familiar with characteristics of Gaussian (normal) distributions
- Understand measures of variation within a data set, such as standard deviation and standard error of the mean.
- **Know the meaning of skewness and kurtosis**
- **Recognize when non-parametric statistical analysis should be employed**
- **Understand type I (alpha) error in statistical testing**
- **Understand type II (beta) error in statistical testing, and its relation to a study's power**
- Understand the impact of performing multiple statistical comparisons on the chances of a type 1 error
- Distinguish between clinical and statistical significance

B. Research methodologies**1. Design and measurement**

- Know the important features of randomized clinical drug trials
- Understand the importance of randomization of subjects in study design
- Understand the reasons for blinding subjects and experimenters in medical investigation
- Recognize the biases that may arise during the recruitment of subjects for medical investigation
- Understand the importance of employing objective criteria in determining the outcome of investigations
- Understand the differences between a priori and post-hoc analyses and related issues
- Understand the role of mediating variables and covariates
- Understand the principles involved in the development and use of questionnaires in research
- Describe the factors associated with an increased strength of evidence of causality in observational studies (e.g., temporality, effect size, biologic plausibility, reversibility, specificity, consistency)
- Understand the role of mediating variables and covariates