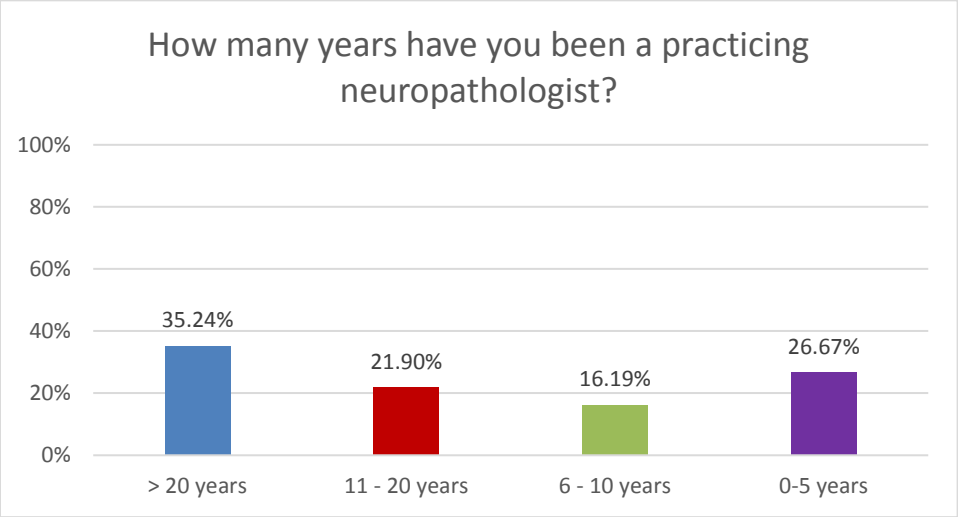
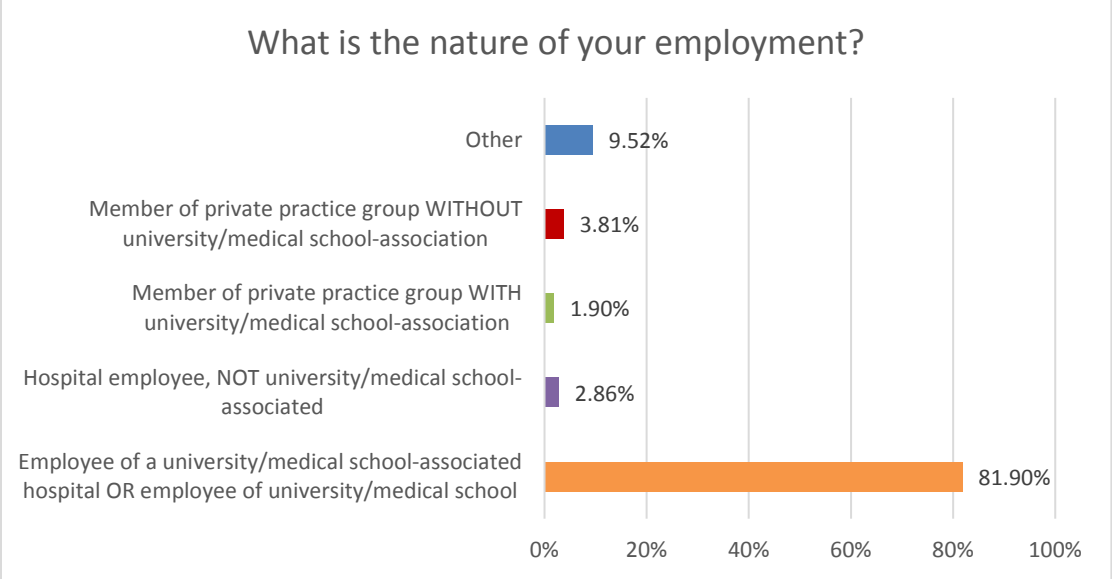
AOE Analysis of AANP's Fall 2018 Membership Survey

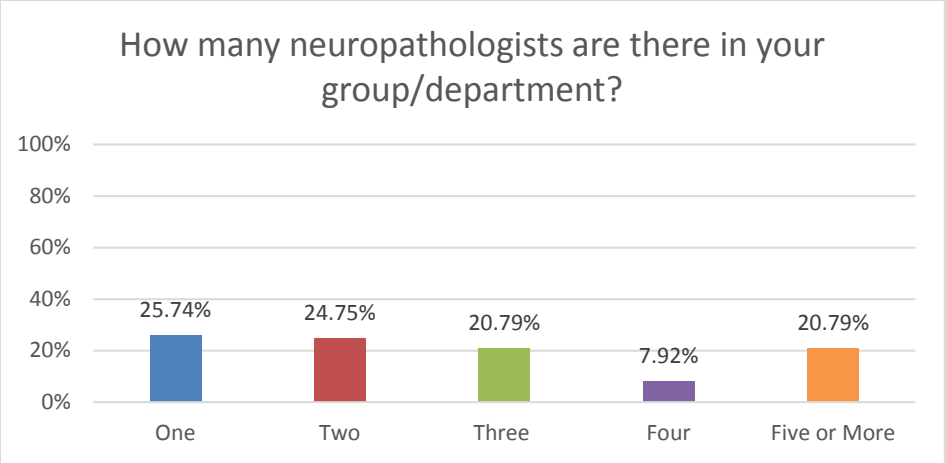
A survey was sent to the membership base of the American Association of Neuropathologists (AANP) in the fall of 2018. This survey is used for planning of future annual meeting topics by providing a better understanding of current neuropathology practice characteristics. A total of 116 members provided responses to the 22 clinical assertion statement questions within the survey and the summary of these results are described below.

The survey asked individuals to provide responses to basic questions to help further contextualize the results, as found below.





Other includes: Hospital employee, with some medical school association (1), Retired (4), Trainee (2), Research/Brain Bank (1), Medical Examiner Office (1), University Research Activity (1)



Clinical Assertion Statements

The survey asked members to rate 22 different clinical assertion questions using a 5-point Likert-type scale from 1=Disagree Completely to 5=Agree Completely, with a neutral option of 3=Neither Disagree nor Agree. These questions were developed to determine a member's level of knowledge regarding nine separate topics in neuropathology. Data is presented as mean +/- standard deviation.

Figure 1 provides the results for the three questions evaluating knowledge in the area of **neoplastic diseases**. All three statements in Figure 1 are false. Members selected responses in the desired direction for statement three. Statement one had a mean score on the incorrect side of the scale and statement two had a mean score in the neutral position which may indicate where additional education is appropriate:

- FGFR-TACC fusions are present in a subset of glioblastoma and have not been identified in lower grade gliomas. (False statement, mean score of 3.05)
- BCOR gene alteration can be seen in pediatric ependymomas. (False statement, mean score of 2.87)

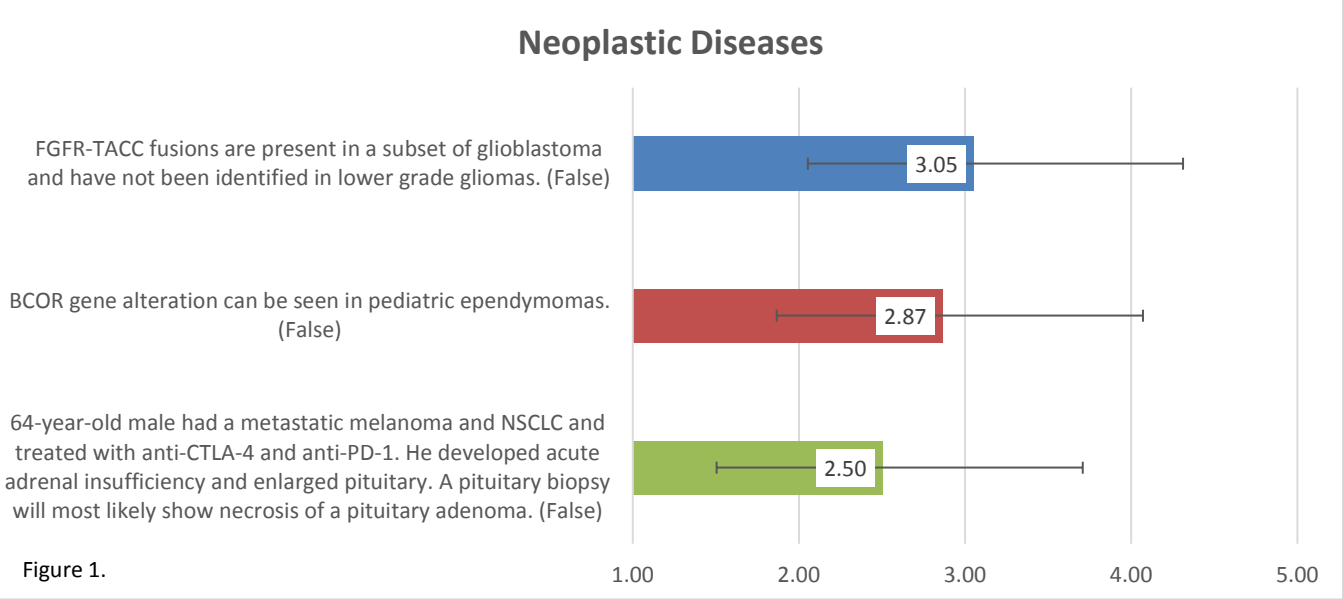


Figure 1.

Figure 2 provides the results for the five questions evaluating knowledge in the area of **neurodegenerative diseases and age-associated brain changes**. Statements one and two are true while statements three through five are false. Statements one and three had a mean score in the desired direction, however, statement one had 64% of respondents answer in the neutral position indicating education is appropriate related to statement one. Statements two, four, and five had mean scores close to the neutral position indicating where additional education is appropriate. In sum, areas of appropriate additional education include:

- Homozygous null mutations of TREM2 is associated with Nasu-Hakola disease. (True statement, mean score of 3.44, 64% of respondents answered in the neutral position)
- Homozygous mutation in the progranulin gene is associated with neuronal ceroid lipofuscinosis. (True, mean score of 2.76)
- Exposure to hormone replacement therapy in female patients with Apo E carrier status has no effect on prognosis. (False, mean score of 2.89)
- The histologic features of age-related tau astrogliopathy (ARTAG) are the same to those seen in PSP or CBD except that they are less severe in extent and occur in more restricted anatomic distribution. (False, mean score of 2.72)

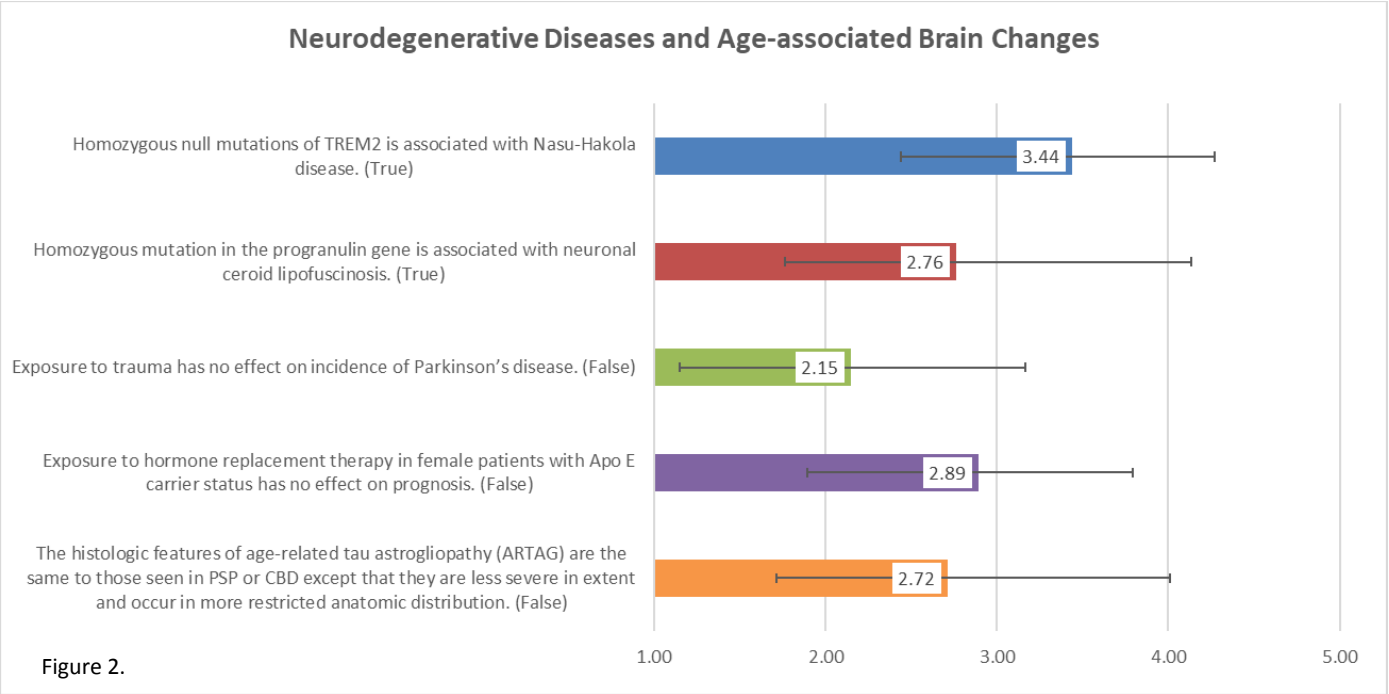


Figure 2.

Figure 3 provides the results for the two questions evaluating knowledge in the area of **infections of the central nervous system (CNS)**. The two statements in Figure 3 are true. Members selected responses in the desired direction for both questions in the area of infections of the central nervous system (CNS).

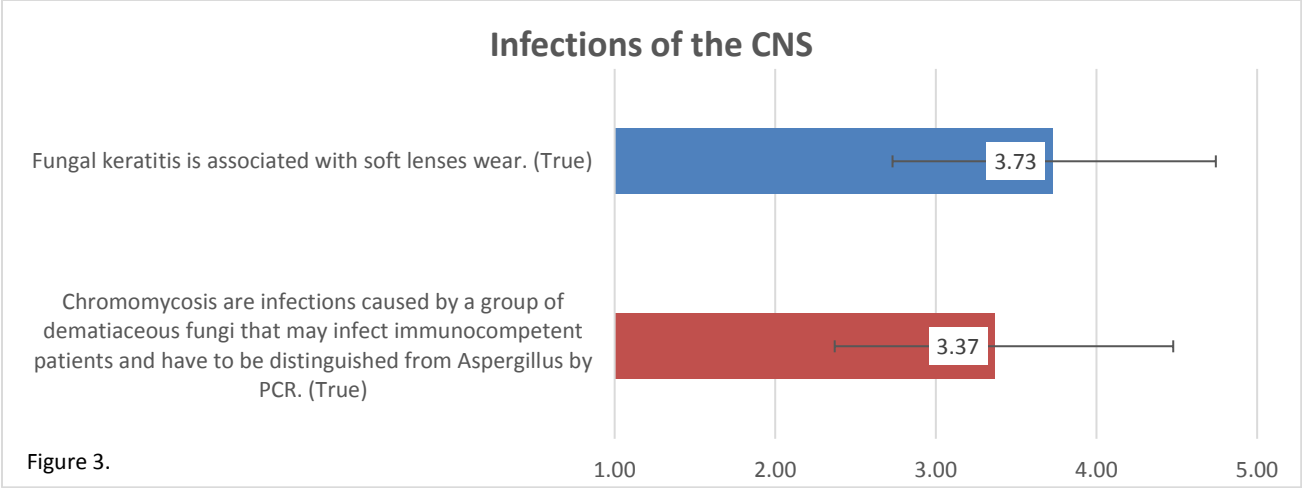


Figure 3.

Figure 4 provides the results for the two questions evaluating knowledge in the area of **pediatric neuropathology**. Both statements are false. Members selected responses in the desired direction for both questions in the area of pediatric neuropathology.

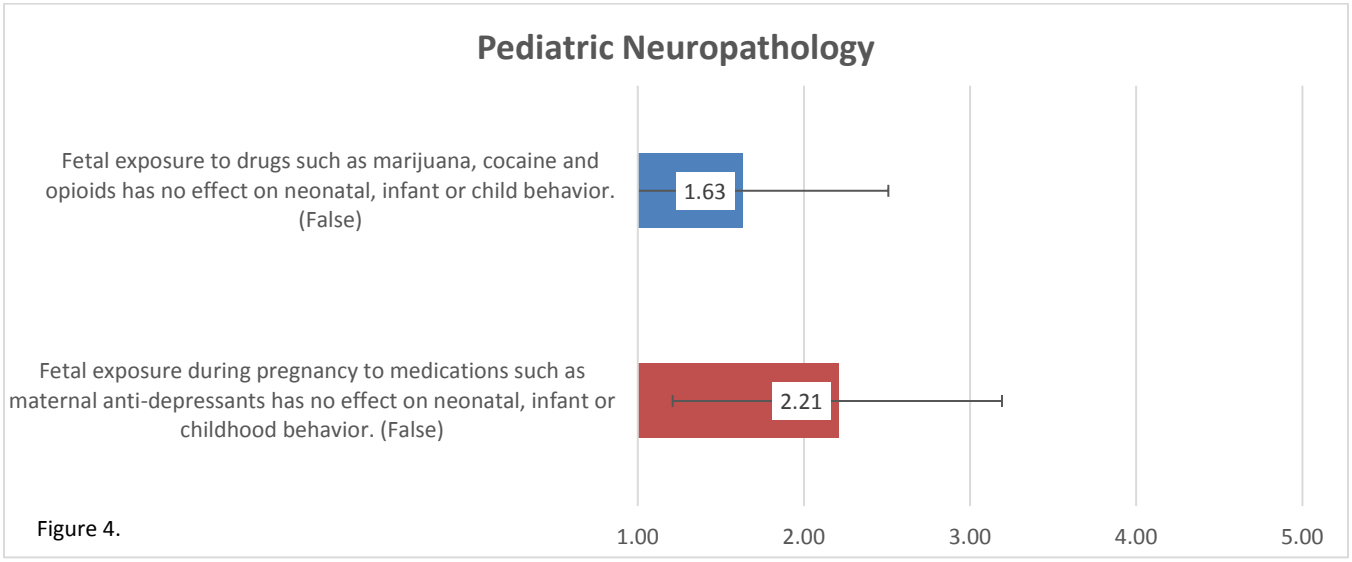


Figure 4.

Figure 5 provides the results for the two questions evaluating knowledge in the area of **forensic neuropathology**. Both statements are false. Statement two had a mean score in the desired direction, and statement one had a mean score on the incorrect side of the scale indicating where additional education is appropriate, this includes:

- A subdural hemorrhage showing proliferative fibroblasts of about 3-4 cell layers thick and early granules of hemosiderin accumulation best represents one to two-week duration bleed/organization. (False statement, mean score of 3.93)

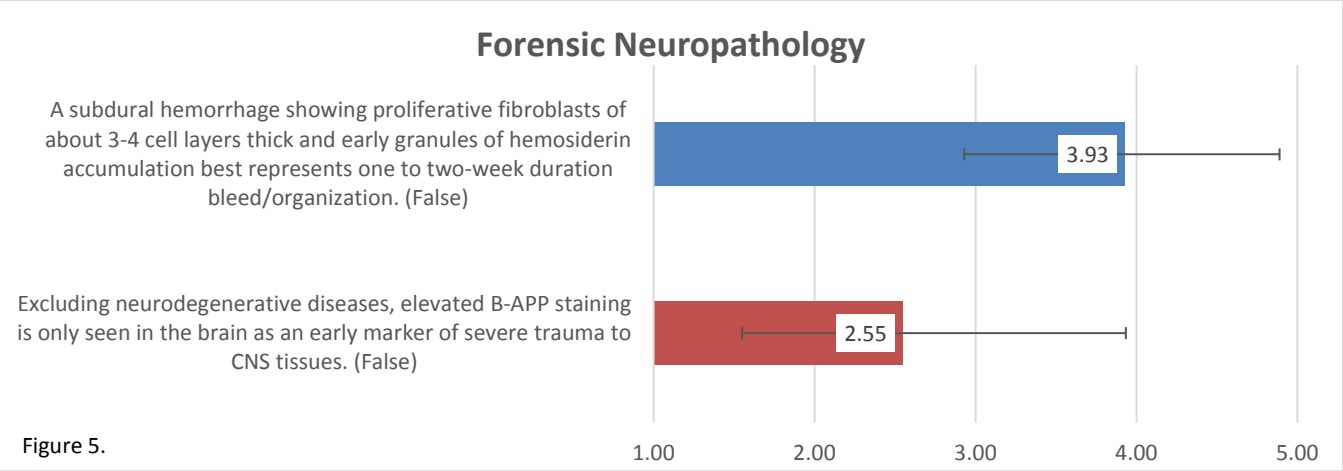


Figure 5.

Figure 6 provides the results for the three questions evaluating knowledge in the area of **changes in current healthcare practice**. Statements one and two are false while statement three is true. All three statements mean scores in the neutral position indicating where additional education is appropriate. To elaborate, statement one had 57% of respondents answer in the neutral position, while statement two had 50% and statement three had 75%. Areas of appropriate, additional education include:

- MIPS (Merit-Based Incentive Payment system) does apply to hospitals or facilities. (False statement, mean score of 3.13, 57% of respondents in the neutral position)
- The American Association of Cancer Research strongly supports the use of Laboratory Developed Tests because they ensure patient safety and promote precision cancer medicine. (False statement, mean score of 3.28, 50% of respondents in the neutral position)
- Under the PAMA Regulations, CMS established payment rates for the new private payor rate-based CLFS payment system, and the rates took effect on January 1, 2018. (True statement, mean score of 3.24, 75% of respondents in the neutral position)

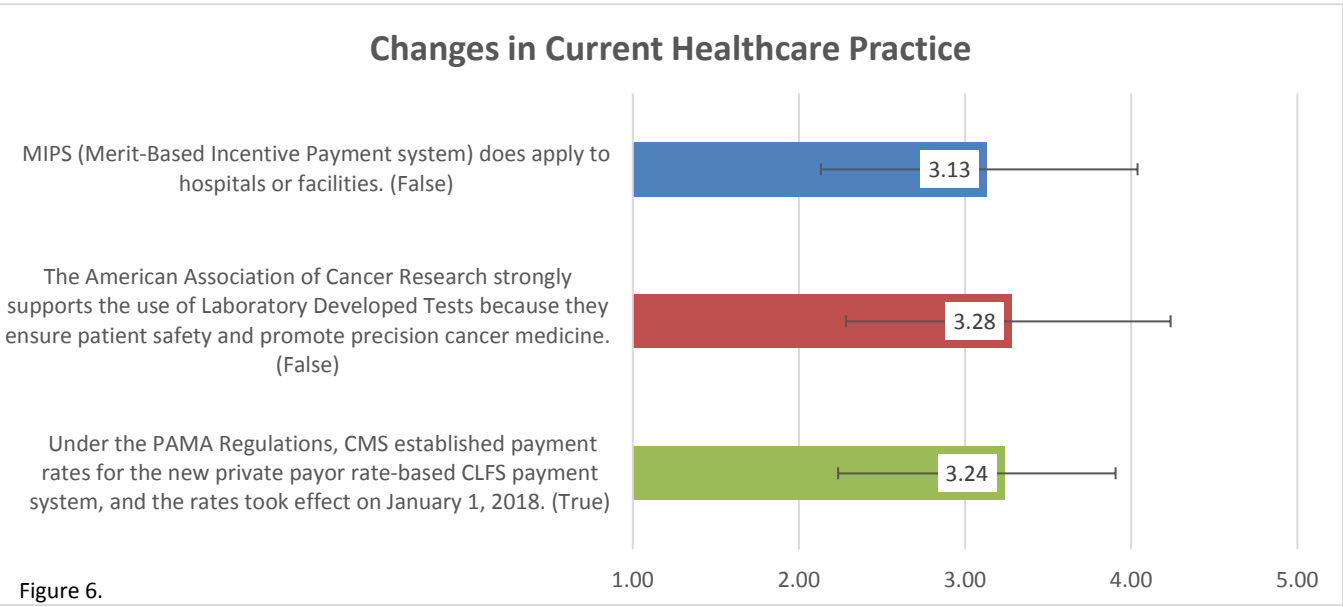


Figure 6.

Figure 7 provides the results for the two questions evaluating knowledge in the area of **maintenance of certification**. Both statements are false. Statement two had a mean score in the desired direction and statement one had a mean score in the neutral position indicating where additional education is appropriate, this includes:

- 70 CME credits are required of each ABP diplomate annually (for diplomates certified 2016 and after). (False statement, mean score of 2.97)

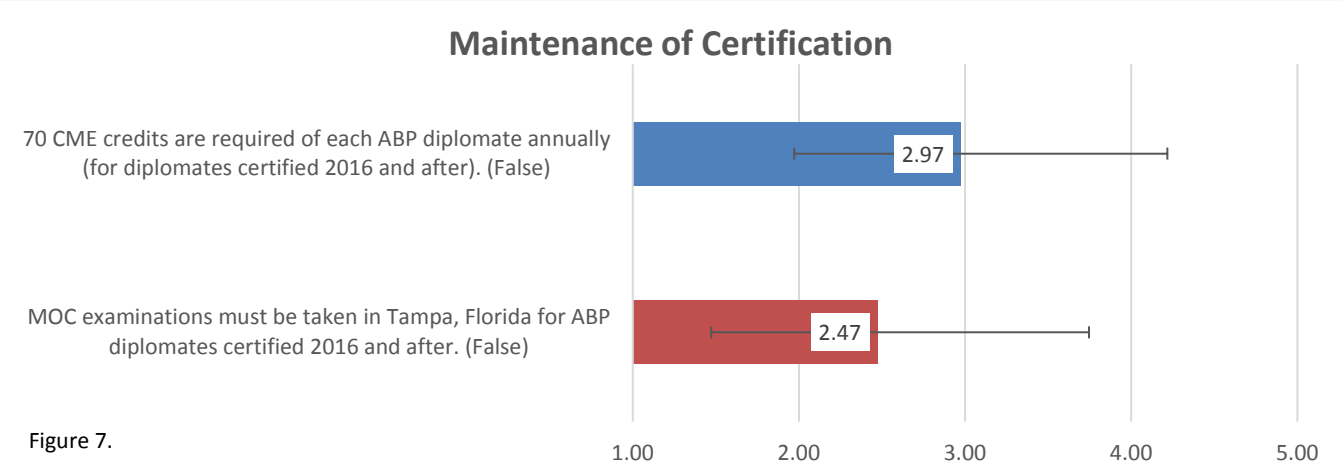


Figure 7.

Figure 8 provides the results for the two questions evaluating knowledge in the area of **neuromuscular diseases**. Both statements are true. Members selected responses in the desired direction for statement one and statement two had a mean score in the neutral position indicating where additional education is appropriate, this includes:

- Myopathy with thick filament loss is characterized by large numbers of atrophic myofibers with heightened sarcoplasmic esterase activity. (True statement, mean score of 3.11)

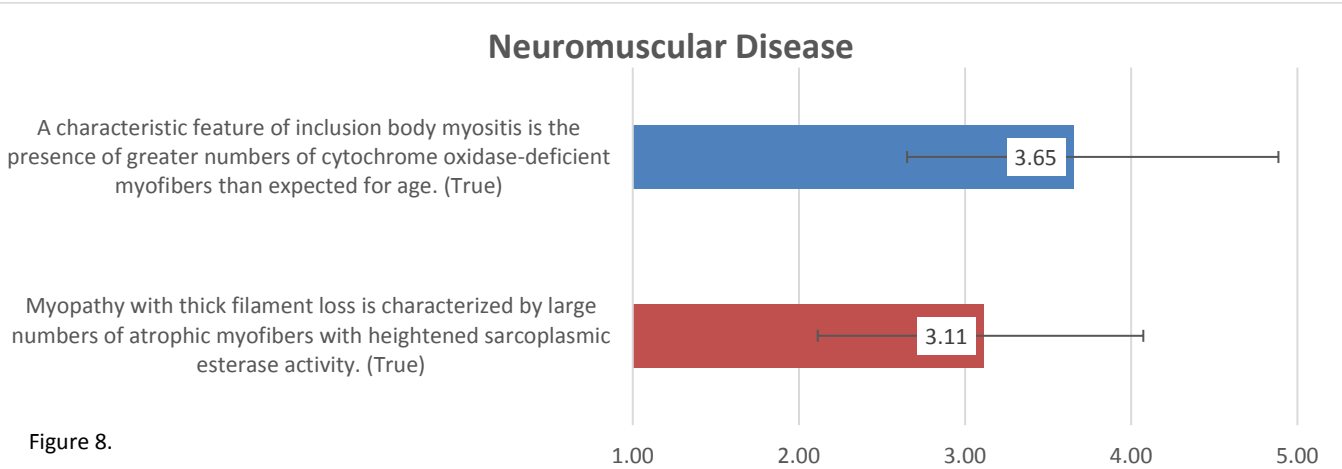
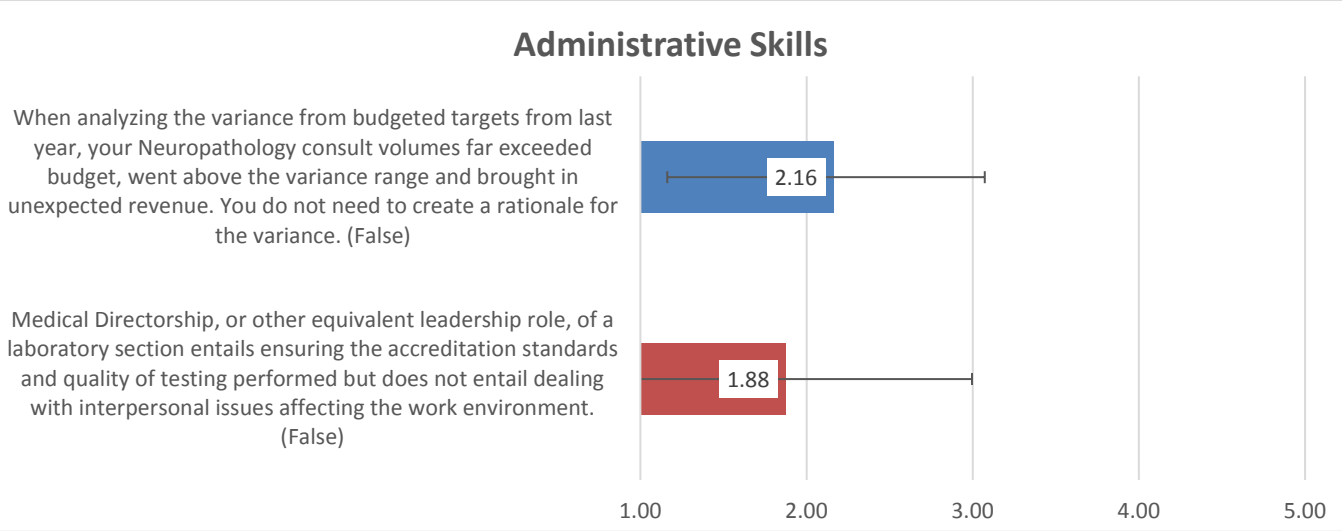


Figure 8.

Figure 9 provides the results for the two questions evaluating knowledge in the area of **administrative skills**. Both statements are false. Members selected responses in the desired direction for both questions in the area of administrative skills.



Conclusion:
Based on the analysis of the 2018 Membership Survey, there were many questions where responses were close to neutral and many respondents answered in the neutral position which provides several areas where there may be need for additional education. Further, several scores were on the opposite/wrong side of the scale. Both situations indicate that the following are areas of need for additional education:

- **Neoplastic Disease**: FGFR-TACC fusions are present in a subset of glioblastoma and have not been identified in lower grade gliomas. (False statement, mean score of 3.05);
    - Neutral: BCOR gene alteration can be seen in pediatric ependymomas. (False statement, mean score of 2.87)
- **Neurodegenerative Diseases and Age-Associated Brain Changes**:
    - Neutral: Homozygous null mutations of TREM2 is associated with Nasu-Hakola disease. (True statement, mean score of 3.44, 64% of respondents answered in the neutral position)
    - Neutral: Homozygous mutation in the progranulin gene is associated with neuronal ceroid lipofuscinosis. (True, mean score of 2.76)
    - Neutral: Exposure to hormone replacement therapy in female patients with Apo E carrier status has no effect on prognosis. (False, mean score of 2.89)
    - Neutral: The histologic features of age-related tau astrogliopathy (ARTAG) are the same to those seen in PSP or CBD except that they are less severe in extent and occur in more restricted anatomic distribution. (False, mean score of 2.72)
- **Forensic Neuropathology**: A subdural hemorrhage showing proliferative fibroblasts of about 3-4 cell layers thick and early granules of hemosiderin accumulation best represents one to two-week duration bleed/organization. (False statement, mean score of 3.93)
- **Changes in Current Healthcare Practice**:
    - Neutral: MIPS (Merit-Based Incentive Payment system) does apply to hospitals or facilities. (False statement, mean score of 3.13, 57% of respondents in the neutral position)

- Neutral: The American Association of Cancer Research strongly supports the use of Laboratory Developed Tests because they ensure patient safety and promote precision cancer medicine. (False statement, mean score of 3.28, 50% of respondents in the neutral position)
- Neutral: Under the PAMA Regulations, CMS established payment rates for the new private payor rate-based CLFS payment system, and the rates took effect on January 1, 2018. (True statement, mean score of 3.24, 75% of respondents in the neutral position)

- **Maintenance of Certification**:
  - Neutral: 70 CME credits are required of each ABP diplomate annually (for diplomates certified 2016 and after). (False statement, mean score of 2.97)
- **Neuromuscular Diseases:**
  - Neutral: Myopathy with thick filament loss is characterized by large numbers of atrophic myofibers with heightened sarcoplasmic esterase activity. (True statement, mean score of 3.11)