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Background

- The landscape of pediatric epilepsy is rife with difficult medication decisions in a vulnerable patient population.
- Decisions regarding antiseizure medications to use and side effect counseling can be overwhelming.
- The challenges are even greater for new child neurology trainees and rotating adult neurology residents.

Our project aims to improve trainees' comfort on overnight call, decrease medication dosing errors, and improve identification and counseling of medication side effects by an Antiseizure Medication (ASM) handbook. The ASM provides vetted weight-based dosing and clinical pearls for each medication.

Measures

Outcome: End-user post-survey data on self-assessed efficiency while on call, comfort answering seizure medication-related questions, and comfort prescribing new seizure medications.

Process: Handbook utilization rates and utilization circumstances.

Balancing: Assessment of reported medication dosing errors, incorrect counseling, or missed medication side effects identified on admitted patients, patients seen at follow up visits, or survey.

Methods

- A comprehensive list of antiseizure medications was compiled.
- A team of child neurology residents and faculty compiled key medication information from evidence-based resources (Lexicomp, FDA labels, etc...) and clinical expertise.
- Ishikawa diagrams/surveys were used to determine greatest barriers for first call providers in initiating these medications.
- This team performed an extensive review of each medication, highlighting clinical pearls, key counseling points, vetted dosing, and side effect monitoring.
- This handbook was further reviewed by the pediatric epilepsy faculty for verification and agreement.
- The handbook was deployed to all trainees in the child neurology department on March 15, 2023, as well as rotating adult neurology residents.
- Post-survey assessments were deployed to assess for utilization of the handbook, usefulness and efficiency metrics, and assess the above-defined outcome, process, and balancing measures.

Results

- There were seven (n=7) respondents to ASM handbook survey.
- Most (6/7) reported handbook use during the surveyed period.
- All (7/7) respondents agreed or strongly agreed that the ASM handbook was useful for overnight call and ER consults.
- Though the handbook was primarily designed for assistance on call, 4/7 respondents agreed or strongly agreed that it was helpful in the outpatient clinic setting, whereas 1 respondent disagreed.
- All respondents agreed or strongly agreed that the ASM handbook was easy to navigate.
- All respondents agreed or strongly agreed that the ASM handbook made them feel more confident on overnight call.

Figure 1: Respondent Demographics

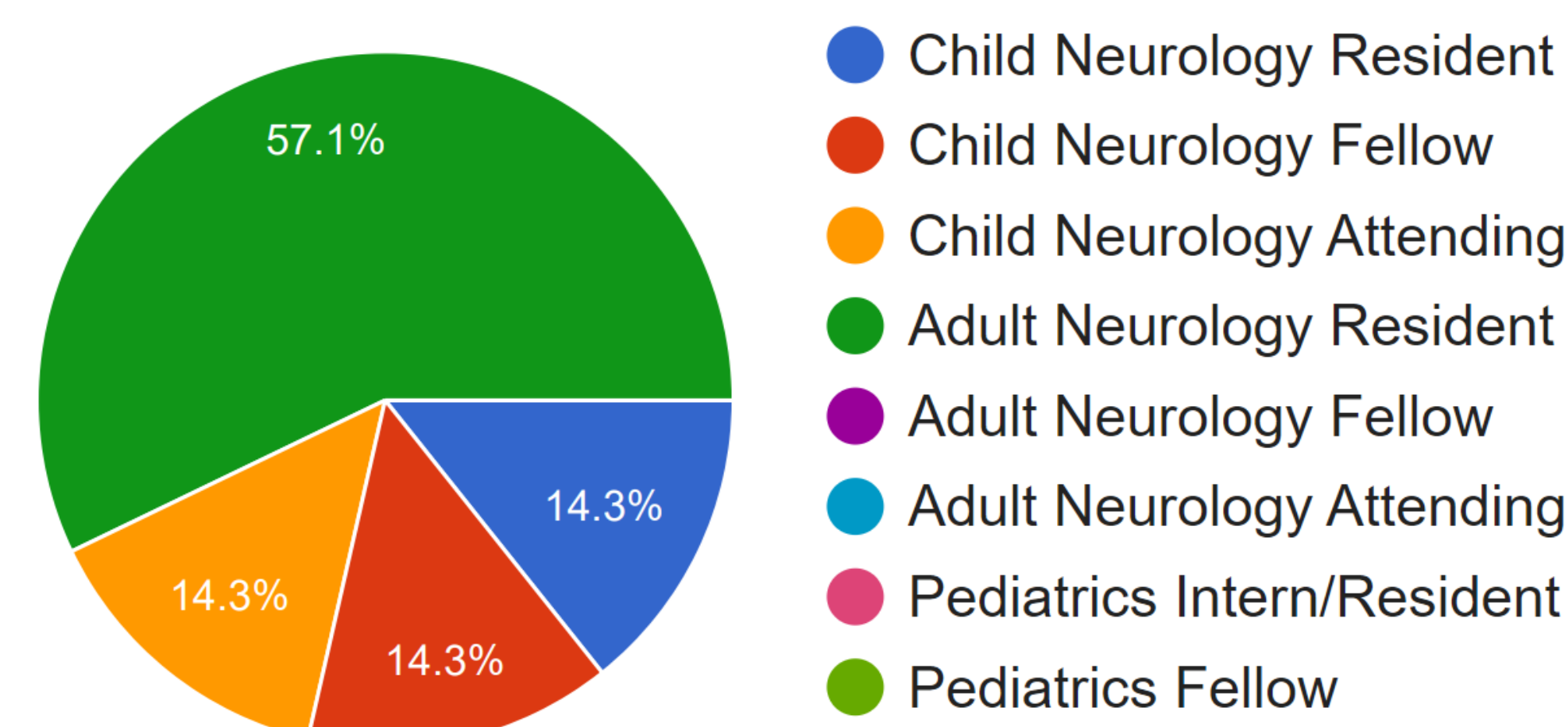


Figure 2: Primary reference prior to implementation of ASM Handbook

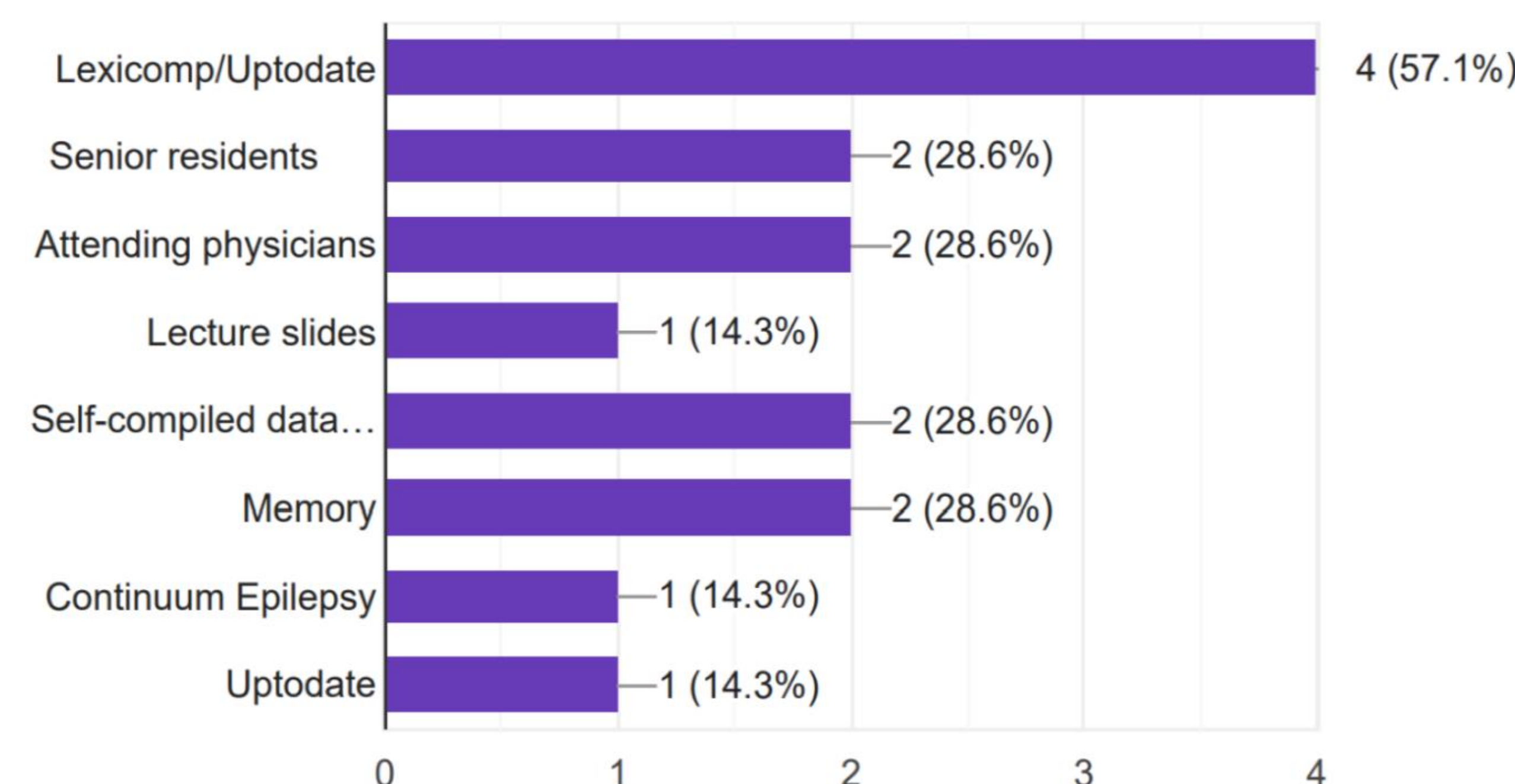


Figure 2A: The ASM Handbook was more efficient than my prior reference material...

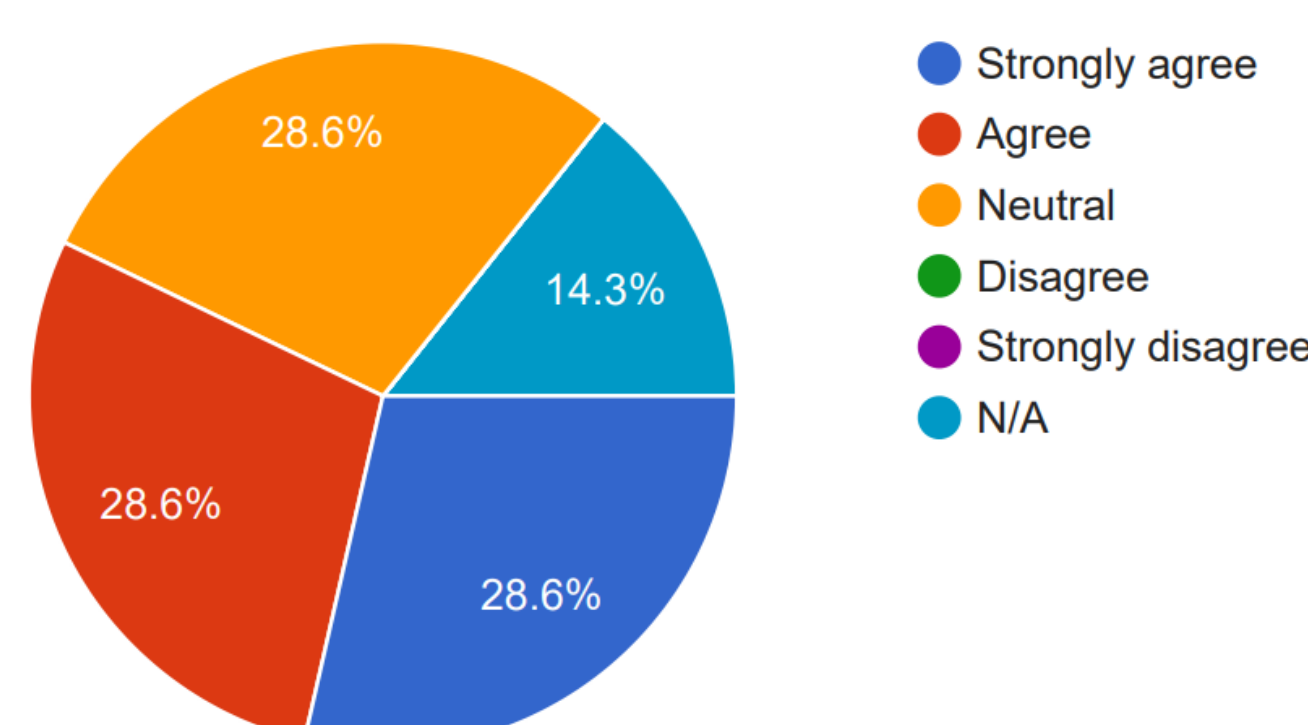


Figure 2B: The ASM Handbook has made me more confident in my decisions than my prior reference material...

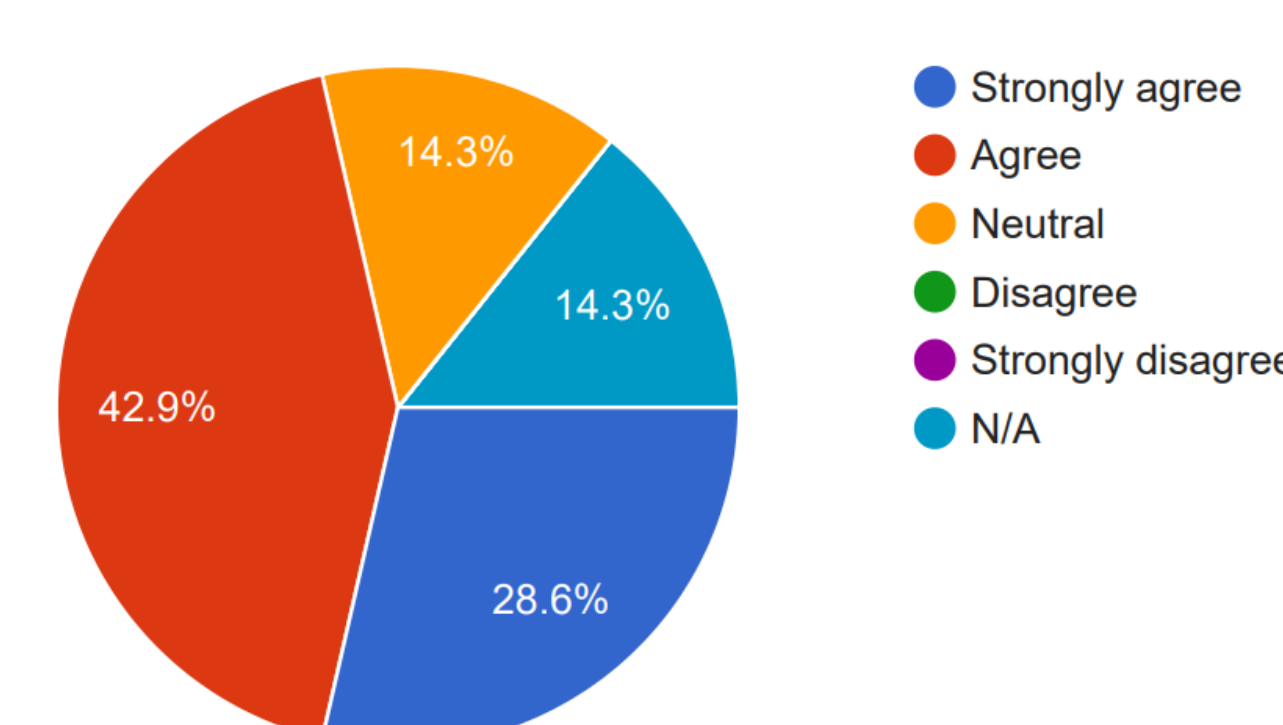
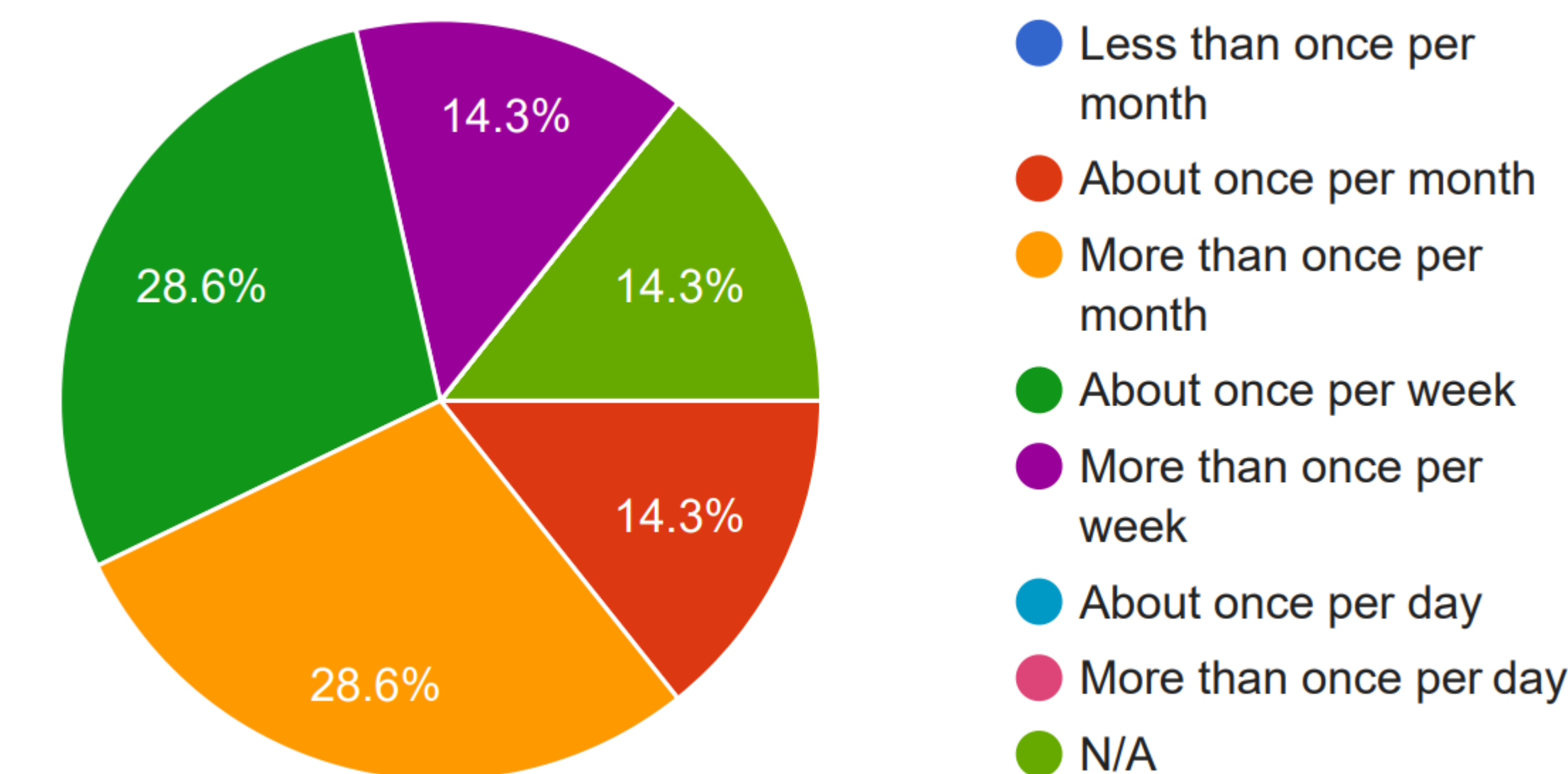


Figure 3: Frequency of ASM Handbook Use



Discussion

- Early post data indicates the ASM handbook has been well received in its first months since implementation
- The survey responses highlight that the handbook has reached its target audience (primarily rotating adult neurology residents) and achieved its primary goal of improved comfort on overnight call.
- The ASM handbook has seen a high utilization rate.
- There have not been identified patient safety issues or medical errors thus far after ASM handbook implementation.
- Several minor edits have been made to the content of the book from resident and attending feedback.
- Recommendations for future additions have been provided through verbal feedback and survey responses such as:
 - Addition of new medications such as cenobamate
 - Hyperlinking the table of contents to ease navigation
 - Highlighting black box warnings to emphasize this important patient safety mechanism.
- Overall, this first round of implementation has been a great pilot prior to the start of new trainees for AY '23-'24.

Conclusion and Future Works

The ASM handbook was successfully completed and implemented in March of 2023. First-round survey assessments suggest that the initial months of the handbook's implementation have been successful in its primary goal of improving early child neurology resident and rotating adult neurology resident comfort on overnight call. After further refinement, we hope to have broader internal distribution of this handbook with the potential long-term goal of publication to a broader audience.