



Real Ear to Coupler Difference: Helping Improve Fitting Outcomes Among the Veteran Population



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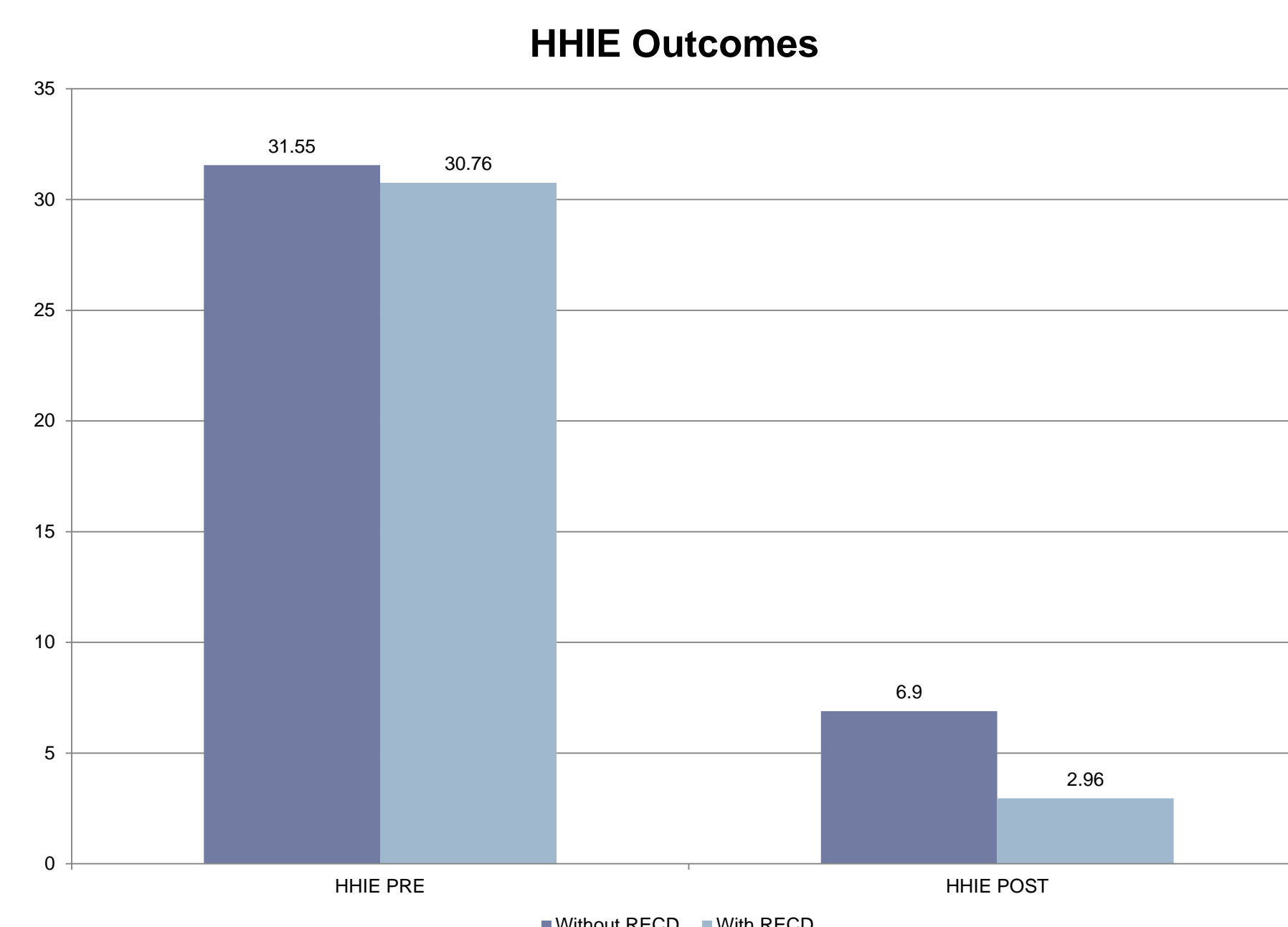
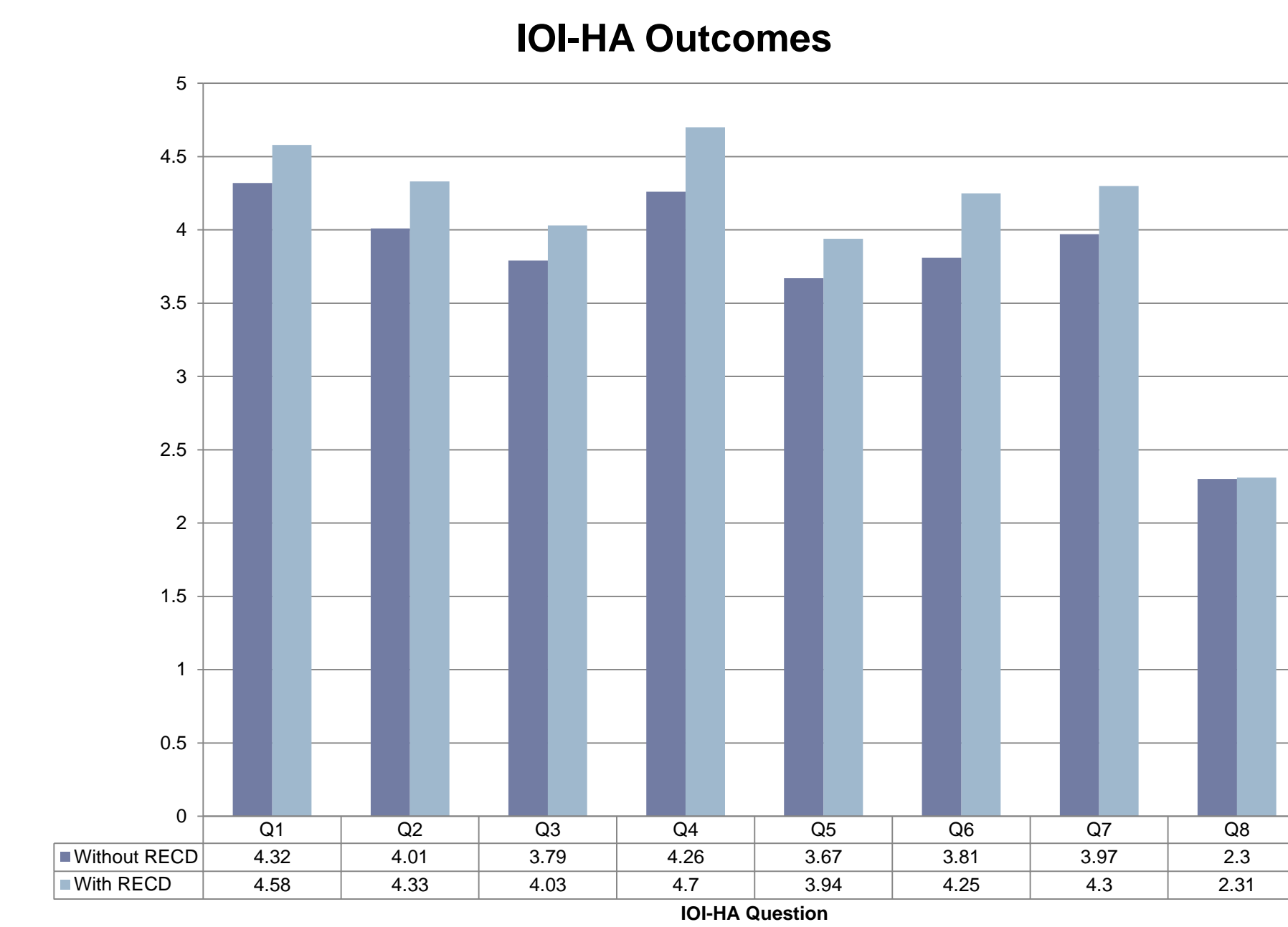
Introduction

- VHA Directive states “VA audiologists **must** verify hearing aid performance using probe tube (real-ear) techniques. Gain or sound pressure verification (e.g. real-ear aided response or real-ear insertion gain) is essential to ensure audibility and alignment with target gain values”.
- Despite this requirement, not all audiologists or audiology facilities provide this mandatory service to the Veterans. While not all audiologists report using real-ear probe tube measures, even fewer report measuring real-ear to coupler difference (RECD).
- Despite the lack of use of probe tube measures being completed in and outside of the VA, a significant amount of research has proven the various positive outcomes from completing these measures.
- RECD measurements are quick, easy to administer, and provide a more accurate fitting by correcting for the difference in dB across frequencies, between the SPL measured in the real-ear and in a 2cc coupler.

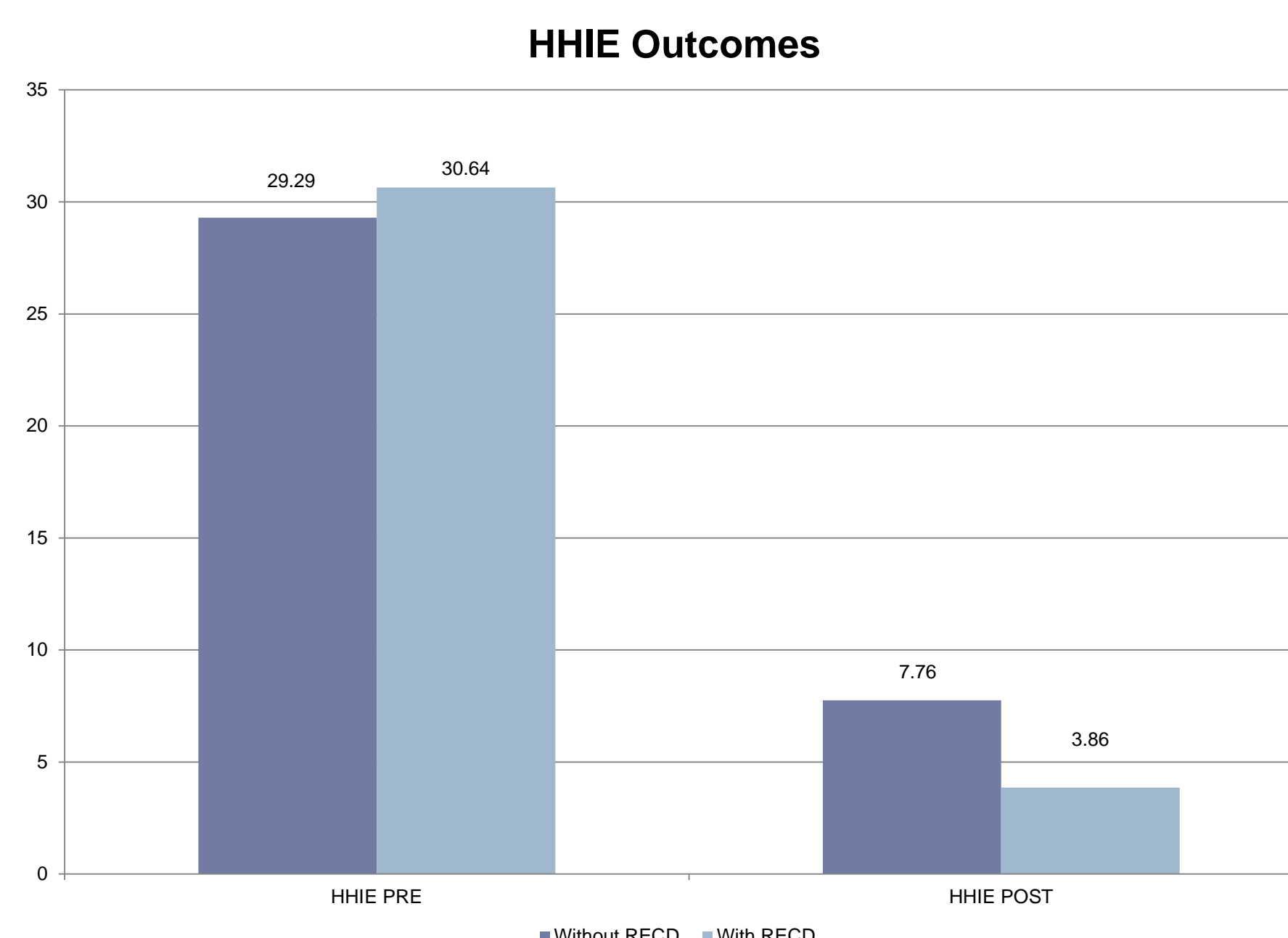
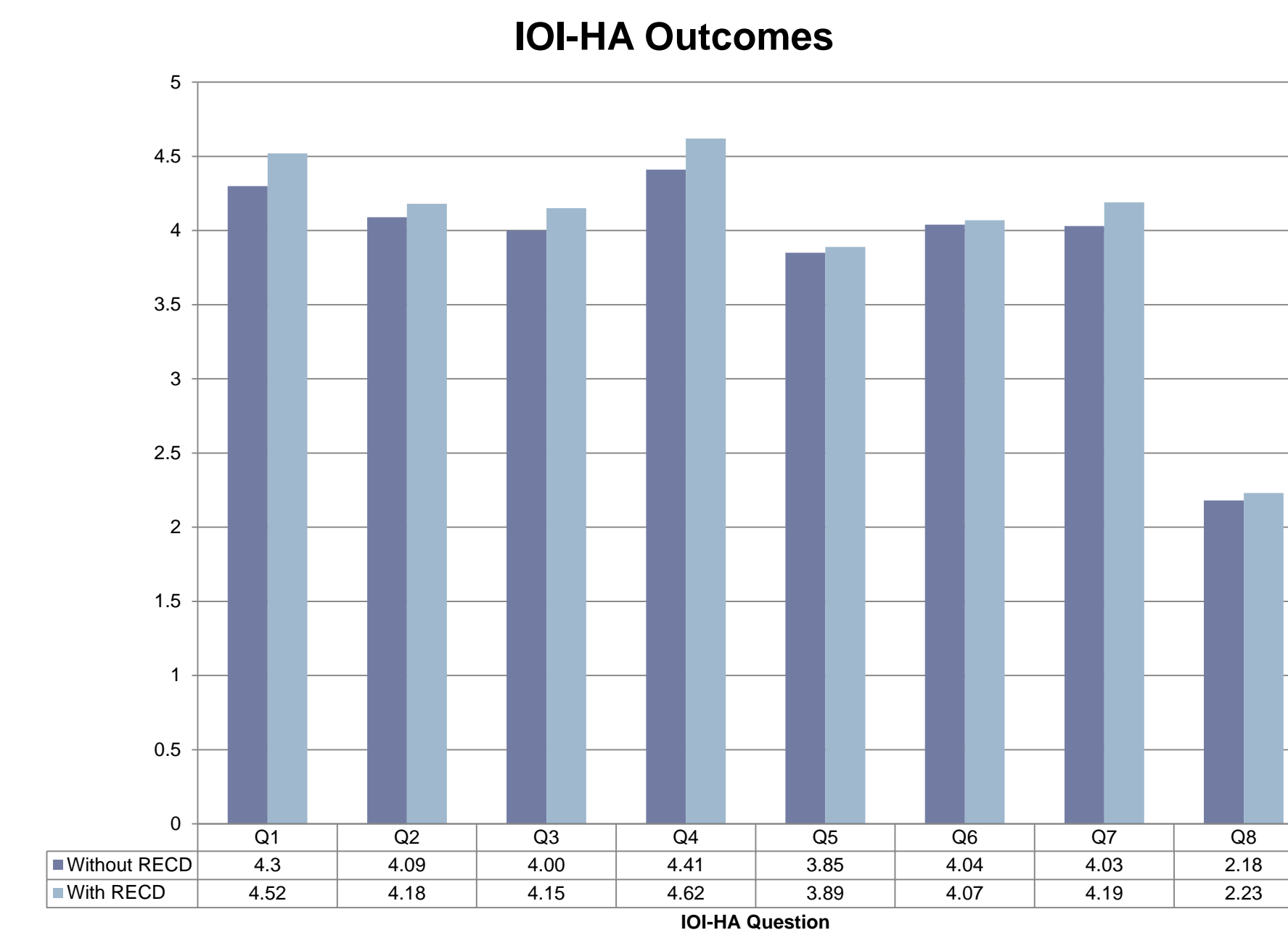
Methods

- All of the Veterans in this project had real-ear aided response (REAR) measures completed. Outcome measures were recorded comparing the results of those respondents who were fit using estimated RECD values vs. those who had RECD measurements completed bilaterally.
- In the current study, 400 Veterans were fit with hearing aids and completed the IOI-HA and HHIE outcome measurement tools. These were grouped to compare: NAL-NL1 vs NAL-NL2, New vs Previous Users, and those with RECD vs without RECD.
- The breakdown of previous / new Veterans is as follows:
 - 98 previous users fit without RECD measurements
 - 102 new users fit without RECD measurements
 - 99 previous users fit with RECD measurements
 - 101 new users fit with RECD measurements
- The breakdown of NAL-NL1 / NAL-NL2 Veterans is as follows:
 - 112 previous users fit using NAL-NL1
 - 88 new users fit using NAL-NL1
 - 85 previous users fit using NAL-NL2
 - 115 new users fit using NAL-NL2

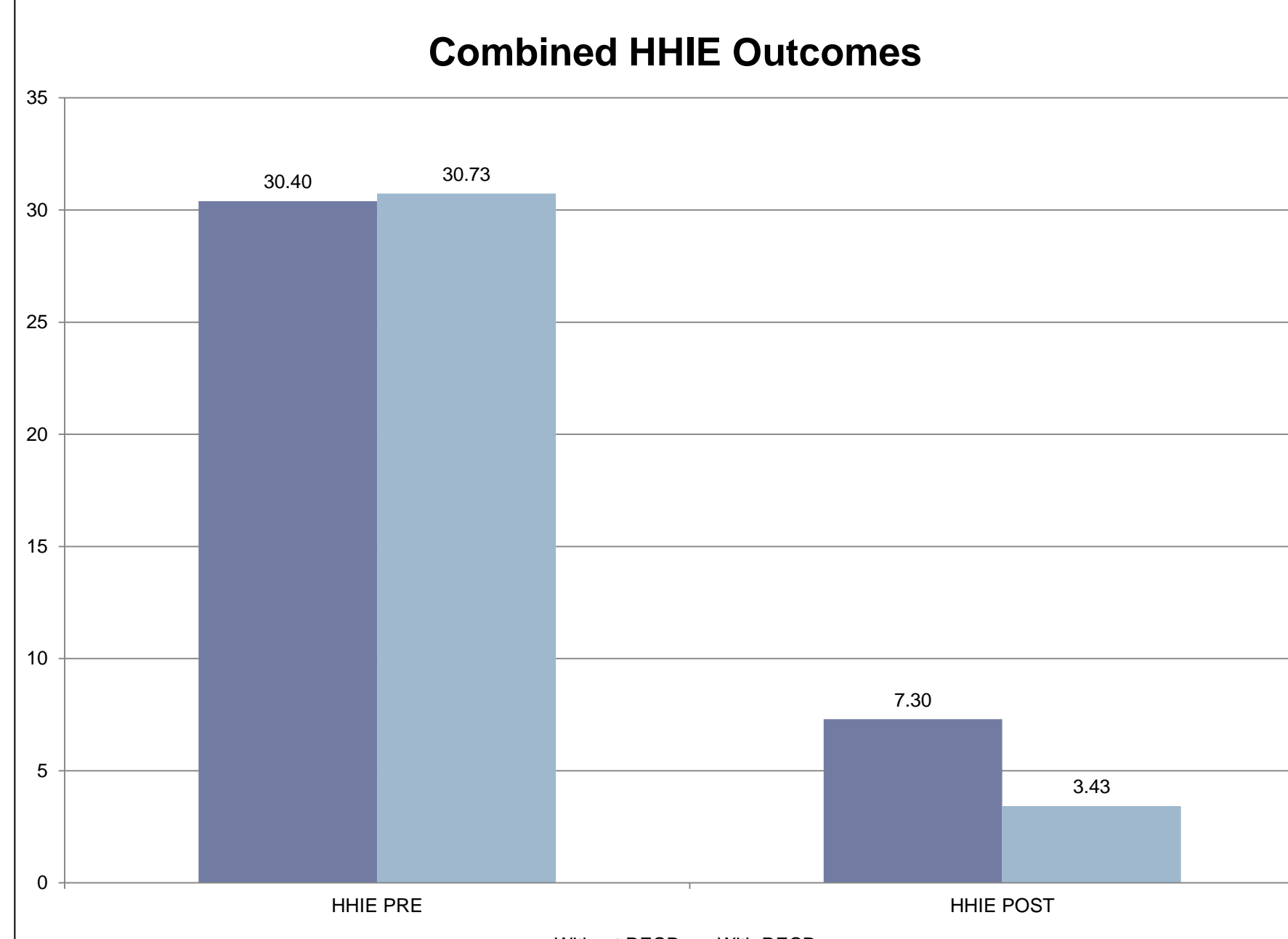
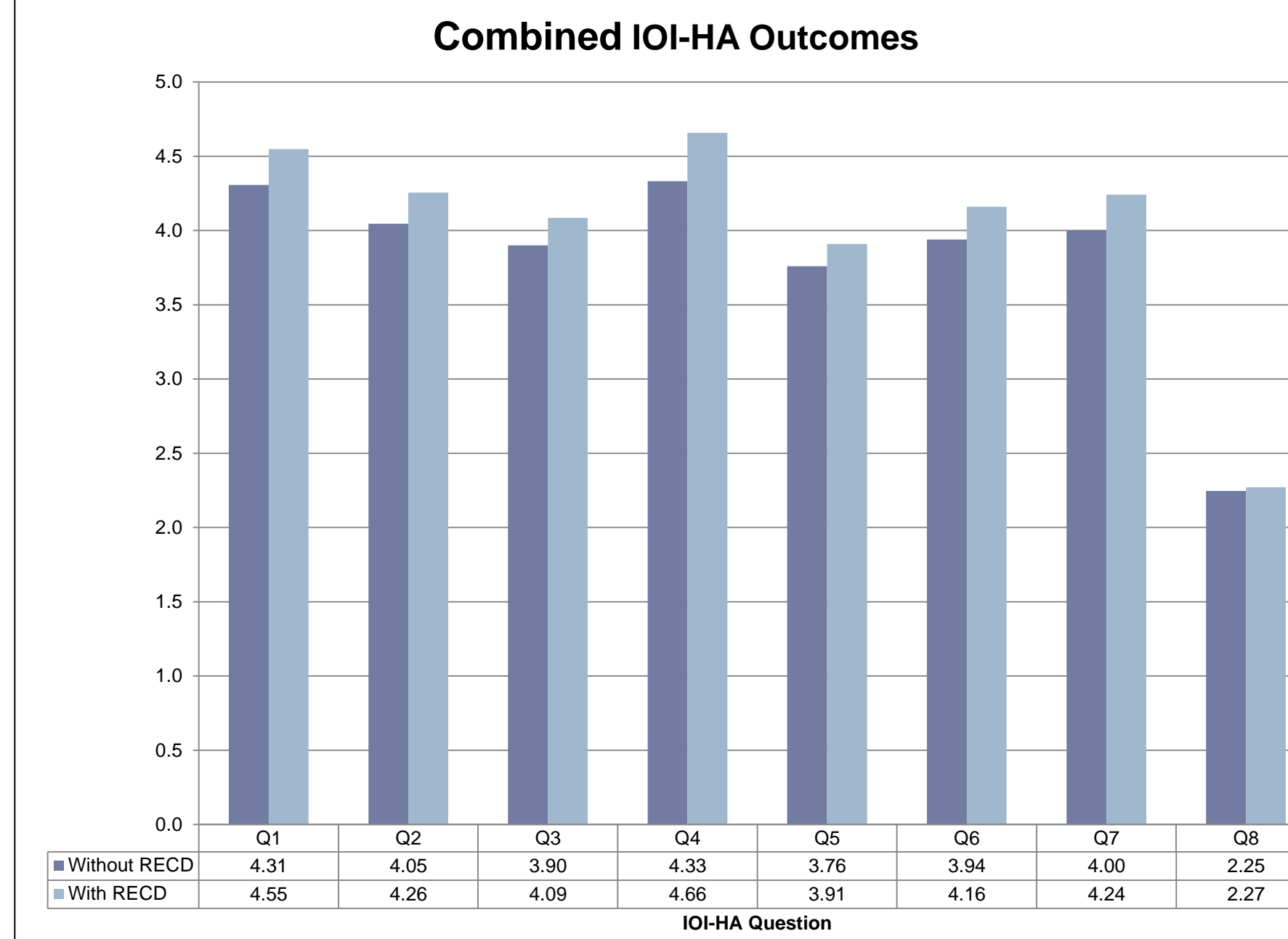
RECD Results - NAL-NL1



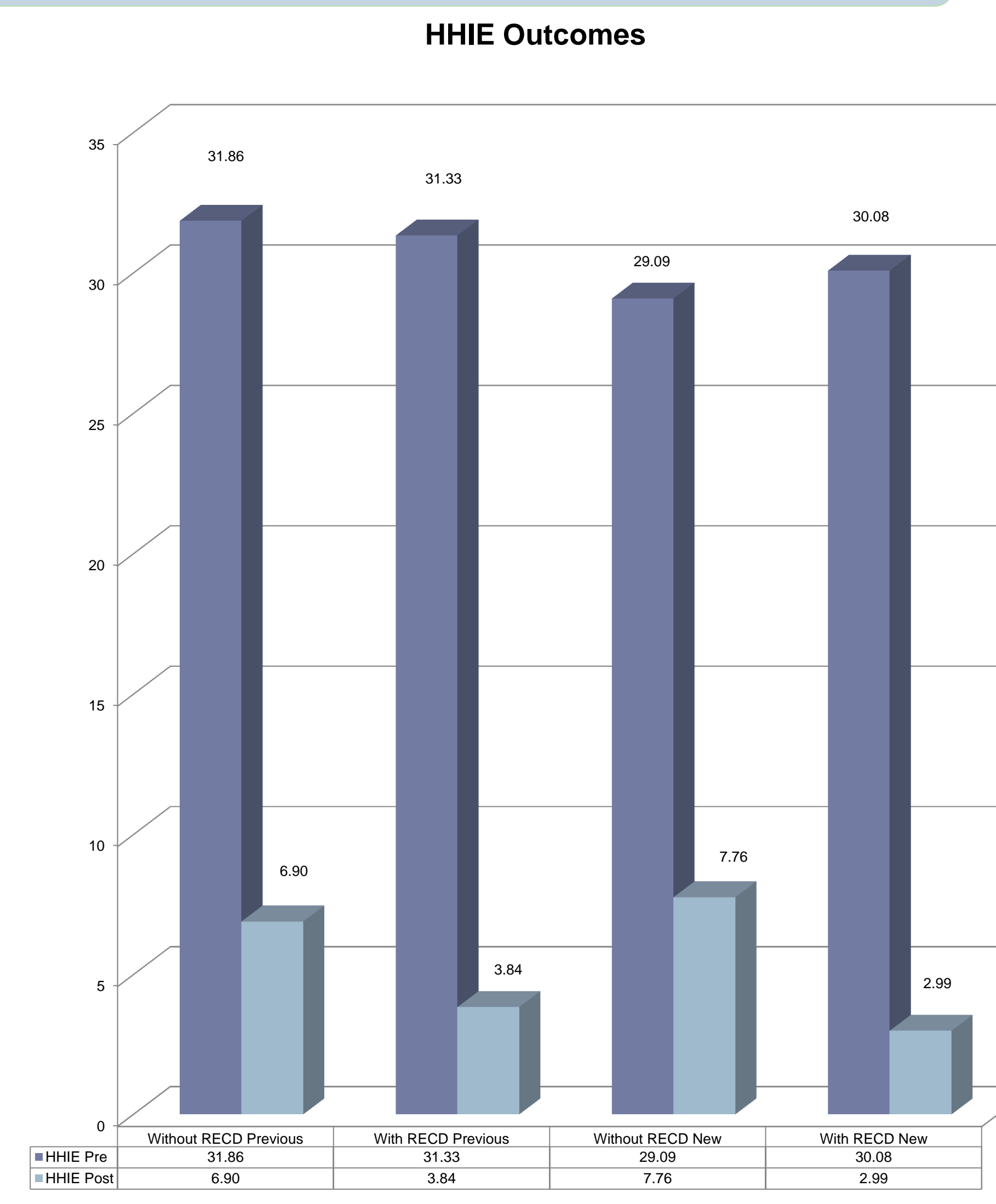
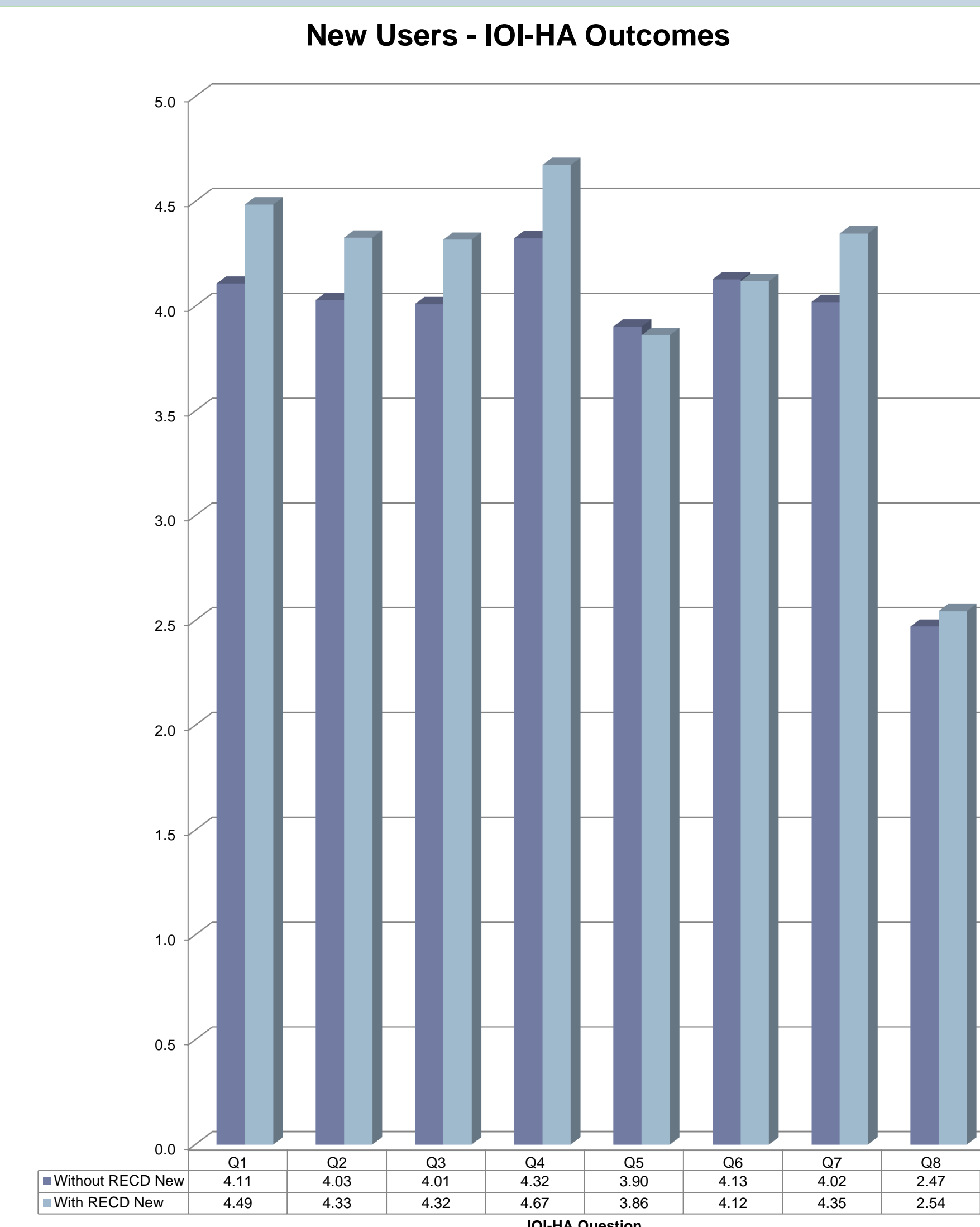
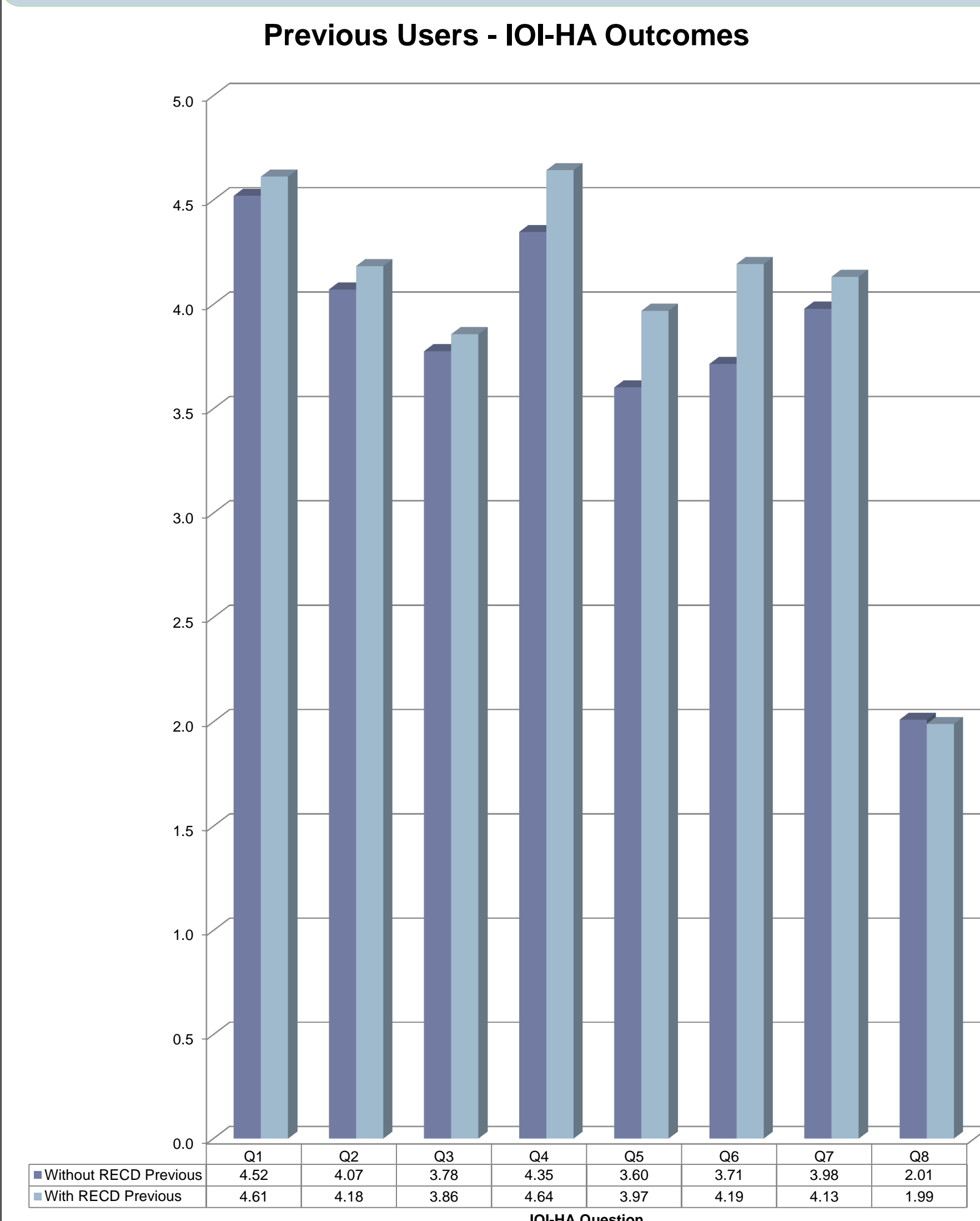
RECD Results - NAL-NL2



Combined NL1/NL2 W/RECD



Outcomes Comparing New and Previous Users – With and Without RECD



Findings

- New and previous users had significantly better HHIE scores when RECD measures were completed in comparison to those who did not have RECD measures completed.
- IOI-HA scores trended slightly better for those who had RECD measures completed versus those who did not.
- The fitting formula did not have an effect for new or previous users.
- Overall the results are consistent with other RECD research that patients report increased satisfaction when measured RECD is completed and best fitting practices are followed.

Implications

- Measuring RECD for all patients during hearing aid fittings lead to better overall outcomes.
- RECD measurements allow for more precise fittings providing more accurate targets for the patient to ensure that audibility is achieved.
- As required by the VA, real-ear probe tube measures are to be completed on all patients to properly verify appropriate target gain values.

References

- VHA Directive: VHA Audiology and Speech-Language Pathology Services. Appendix E, Hearing Aid Program, Section 6.
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