

2022-2023 TECHNICAL REPORT

INTRODUCTION

The International Council for Veterinary Assessment (ICVA®) and the National Board of Medical Examiners (NBME®) work together to produce and provide the North American Veterinary Licensing Examination (NAVLE®) to assist the State Boards of Veterinary Medicine, the Canadian National Examining Board, and the individual Provincial Boards of Veterinary Medicine in assessing the practice competence of candidates for licensure as veterinarians. The primary objectives of the NAVLE are as follows:

- To provide a comprehensive, objective examination to state or provincial boards charged with the licensing of veterinarians;
- To protect the public by ensuring that veterinarians demonstrate a specified level of knowledge and skills before entering veterinary practice;
- To assess the professional competency of veterinarians in terms of their qualifications to enter practice;
- To provide a common standard in the evaluation of candidates that will be comparable from jurisdiction to jurisdiction;
- To contribute to the veterinary profession through the development of improved definitions of the relationship between knowledge and professional practice; and
- To facilitate interstate and interprovincial licensing reciprocity for practicing veterinarians.

The NAVLE is administered as a computer-based examination. Since the fall of 2000, it has replaced the National Board Examination (NBE: Part A) and the Clinical Competency Test (CCT: Part B) as the uniform licensing examination for veterinary medicine in North America.

The NAVLE has been developed through the cooperation of the state boards of veterinary medicine and is uniformly administered and scored under policies and procedures developed and approved by ICVA. Subject matter expertise is provided by ICVA committee members and item writers. ICVA has worked with the NBME in developing and supporting the NAVLE since the test's inception in the late 1990s. This report documents the development, administration, and psychometric analysis of the 2022-2023 NAVLE.

TEST DEVELOPMENT

During 2022-2023 NAVLE test development proceeded according to ICVA/NBME established procedures. Specifically, the ICVA identified 31 veterinarians to write new items for the NAVLE. All writers were trained and/or had written items previously. NBME staff prepared item-writing assignments based on species, organ system, and competency codes. Item-writing assignments, including instructional materials and information about electronic submission, were prepared and distributed to committee members in March 2021. A total of 848 items were submitted by item writers.

All items received from the committee members were edited and reviewed for technical flaws by NBME staff. Each author received his/her edited items for review and approval prior to inclusion in the item review meeting draft. A draft of edited materials was sent to the committee members for use at the item review meeting, which was held November 9-10, 2021.

At the item review meeting, the committee was divided into five groups: the canine group, feline group, exotics and public health group, food animal group, and the equine, camelidae, and cervidae group. Of the new items, 831 items were approved for addition to the pool. A list of item writers and reviewers is shown in Appendix A.

After the meeting, new items were then updated by NBME staff in the test item library and were made available to be pretested on the new test forms.

Multiple 300-item examination forms were generated using content and statistical constraints. Due to considerations of the pandemic, twenty-nine participants, including ICVA members, members of the ICVA's Assessment Development Committee (ADC), and recent veterinary graduates, met remotely on April 6, 7, 11, and 12, 2022, to review the forms. Small groups of the committee reviewed complete forms for quality and content overlap and to ensure content equivalence. Approximately 5% of the items in each form are usually replaced to accomplish this goal. Following the meeting, NBME staff then replace the items and created updated forms. The list of participants for the form review meetings is shown in Appendix B.

After the forms were finalized, live and pretest items sufficient to prepare multiple French forms were then sent to the Canadian National Examining Board for translation and proofreading. The final step in the test development process was creation of resource files for both the English and French versions of the examination for delivery by Prometric. Quality control procedures were implemented at each stage of the test development process to ensure that standards are being met.

TEST ADMINISTRATION

Pre-Administration

Seat Blocking: The NBME worked with the ICVA and Prometric to reserve seats at selected testing centers domestically and internationally. Data from the previous year were used to forecast the number of seats required for candidates during the 2022-2023 NAVLE cycle. Seats were reserved at international sites for both windows.

Eligibility Processing: The ICVA and the NBME processed eligibilities of 6,002 candidates for the November-December NAVLE (expanded from the standard four-week window), and of that group 5,874 candidates tested. For the April window (expanded from the standard two-week window), 2,411 were submitted, and 2,356 tested. Special accommodations according to the requirements of the Americans with Disabilities Act (ADA) and non-standard testing conditions due to temporary medical situations were approved by ICVA and were processed by NBME for 438 individuals for the expanded November-December NAVLE and 329 individuals for the expanded April NAVLE.

Examination Summary

November-December 2022: The testing window encompassed testing from November 1, 2022 through December 16, 2022, with extensions ending on December 30, 2022. All 5,874 examinees completed testing by December 30, 2022.

April 2023: The testing window encompassed testing from April 3 through April 22, 2023, with extensions ending on May 31, 2023. All 2,356 examinees completed testing by May 31, 2023.

Exit Survey Information

Examinees were asked to complete an optional post-test survey after completing the last block of examination items. Survey results for all examinees from the November-December and April NAVLE are presented in Appendix C.

SCORING AND ANALYSIS

Key Validation/Pool Review

Based on the results of an item analysis, live and pretest items were selected to be reviewed at the January 2022 pool review. After reviewing the items and their associated statistics, content experts had the opportunity to either keep/add to the NAVLE item bank, re-write items for future pre-testing, or delete items from the NAVLE item bank. Once the item bank was updated, forms for the November-December 2022 and April 2023 administrations were built using items with statistics that met the psychometric requirements for inclusion.

Scoring Procedures

Statistical targets were used to ensure that the test forms were as similar as possible in difficulty. Because test forms contain different items, it was necessary to estimate examinee proficiency on a common scale using equating methods. This included a calibration of responses given by senior students of accredited programs taking the examination for the first time, under standard testing conditions.

These proficiency estimates were then translated into the reported scale scores that ranged from 200 to 800. The proficiency estimate corresponding to a minimum passing score had a scale score value of 425. Some licensing boards still list a two-digit number as the examination passing score in their rules and laws. To assist the licensing boards, three-digit scores for candidates who applied through their agency were also translated into the applicable two-digit, locally derived score.

Summary Statistics

Summary statistics describing the performance of candidates on the November-December 2022, the April 2023 and the two NAVLE administrations combined are shown in Tables 1.1, 1.2, and 1.3. These tables present the mean three-digit scaled scores and standard deviations for three primary groups:

1. *Criterion Group: senior students of accredited veterinary schools who took the NAVLE for the first time under standard testing conditions;*
2. *Non-Criterion Group: senior students of accredited veterinary schools who had previously taken the NAVLE or took the NAVLE with test accommodations or graduate veterinarians from accredited schools; and*
3. *Non-Accredited Group: graduates or senior students of foreign veterinary schools that are not accredited by the American Veterinary Medical Association's Council on Education.*

Also presented in these tables is information about the number and percentage of failing candidates in each group.

Passing Standard

A best practice in assessment is to hold periodic standard setting exercises to ensure that the exam continues to be relevant, valid, and defensible. This exercise serves as a mechanism to generate evidence on item level performance that corresponds with minimum competency, which is then used in establishing an appropriate pass/fail cut score for the examination.

Standard setting exercises for NAVLE have been held periodically in alignment with assessment best practices, with sessions in 2000, 2004, 2008, 2011, 2019, and most recently in 2022.

The most recent NAVLE standard setting process included three standard setting exercises held virtually between July and September 2022 and included a total of 25 judges. Each panel of participants consisted of 5-15 Subject Matter Experts with diverse demographic characteristics, geographical location of practice, years of experience, and veterinary medicine area of focus.

Failure rates resulting from applying this standard to the current administration are presented in Tables 1.1, 1.2, and 1.3.

SCORE REPORTING

Performance reports for candidates were generated by NBME and distributed to individual examinees, licensing boards, and ICVA. Score information was also distributed to the AAVSB for archival storage and use in official score transfer requests.

Table 1.1. Performance on November-December 2022 NAVLE by Examinee Group

	Mean Scale Score	SD Scale Score	Number of Examinees Failing	Percent of Examinees Failing	Total Examinees
Criterion Group	479	68	951	21.2	4480
Non-Criterion Group	422	66	409	50.9	804
Non-Accredited Group	392	67	410	69.5	590
Total Group	463	74	1770	30.1	5874

Table 1.2. Performance on April 2023 NAVLE by Examinee Group

	Mean Scale Score	SD Scale Score	Number of Examinees Failing	Percent of Examinees Failing	Total Examinees
Criterion Group	434	67	144	42.6	338
Non-Criterion Group	422	54	648	48.7	1331
Non-Accredited Group	395	67	463	67.4	687
Total Group	416	61	1255	53.3	2356

Table 1.3. Performance on Both Administrations by Examinee Group

	Mean Scale Score	SD Scale Score	Number of Examinees Failing	Percent of Examinees Failing	Total Examinees
Criterion Group	476	69	1095	22.7	4818
Non-Criterion Group	422	59	1057	49.5	2135
Non-Accredited Group	394	67	873	68.4	1277
Total Group	449	74	3025	36.8	8230

1. The Criterion group consists of senior students in accredited veterinary schools who took the NAVLE for the first time under standard testing conditions.
2. The Non-Criterion group consists of senior students of accredited veterinary schools who had previously taken the NAVLE or who took the NAVLE with test accommodations, or graduate veterinarians from accredited veterinary schools.
3. The Non-Accredited group graduates or senior students of foreign veterinary schools that are not accredited by the American Veterinary Medical Association's Council on Education.

APPENDIX A

North American Veterinary Licensing Examination 2021 Item Review Meeting November 9-19, 2021

Dr. Rose Baker – Communications
Dr. Christine Calder – Canine, Feline, Behavior
Dr. Serge Chalhoub -Feline
Dr. Jason Coe - Communications
Dr. Allan Corber - Feline
Dr. Ryane Englar - Feline
Dr. Julie Fixman - Canine
Dr. Brad Heins – Bovine (Beef)
Dr. E. Jane Kelly – Public Health
Dr. Lester Khoo - Aquatics
Dr. Lauren Kleine - Equine
Dr. Matthew Kornya - Feline
Dr. Gregory Lewbart – Aquatics, Reptile
Dr. Wesley Lyons - Porcine
Dr. Kathleen MacMillan - Equine
Dr. Amanda Marino – Pet Bird
Dr. Fernando Marquez – Equine
Dr. Teresa Morishita - Poultry
Dr. Jeffrey Musser – Bovine (Dairy)
Dr. Gil Patterson - Porcine
Dr. Keith Poulsen – Bovine (Dairy)
Dr. Maria Prado – Bovine (Beef)
Dr. Karen Rosenthal – Other Small Mammal/Reptile
Dr. Christine Savidge -Canine
Dr. Gretchen Schoeffler – Canine
Dr. Clare Scully – Ovine, Caprine, Cervidae
Dr. Amy Snyder – Professional Behavior, Practice Management
Dr. Ricardo Stockler – Ovine, Caprine,Camelidae
Dr. Jean-Yin Tan - Equine
Dr. Karen Tefft - Canine
Dr. Helen Tuzio - Feline

APPENDIX B

North American Veterinary Licensing Examination 2022 Form Review Meeting Participants April 6, 7, 11, and 12, 2022

Dr. Rose Baker
Dr. Christine Calder
Dr. Alexandra Delheimer
Dr. Cheryl Dhein
Dr. Hilari French
Dr. Bradley Heins
Dr. Jared Janke
Dr. Lester Khoo
Dr. Lauren Kleine
Dr. Matthew Kornya
Dr. Rachel Larson
Dr. Gregory Lewbart
Dr. Kathleen MacMillan
Dr. Amanda Marino
Dr. Teresa Morishita
Dr. Victoria Neff
Dr. Keith Poulsen
Dr. Maria Prado
Dr. Kaitlin Quinter
Dr. Garrett Ryerson
Dr. Jason Schewe
Dr. Clare Scully
Dr. Amy Snyder
Dr. Katie Steneroden
Dr. Tamara Swor
Dr. Rick Tubbs
Dr. Helen Tuzio
Dr. Maureen Wichtel

APPENDIX C

Test Administration Statistics	Nov-Dec 2022	April 2023
Eligible examinees (permits sent)	6,002	2,411
Examinees tested	5,874	2,356
Examinees with test accommodations	435	328
Number in Criterion Group	4,480	338
Percent in Criterion Group	76%	14%
Examinee Responses to Post-Test Survey (Criterion candidates)	Nov-Dec 2022	April 2023
Received first choice of test site	91%	89%
Received first choice of test date	84%	70%
Traveled more than 50 miles to test site	21%	25%
Spent one or more nights away to take examination	25%	22%
No computer difficulties were encountered	82%	82%
Would recommend test site	96%	95%
No distractions in testing area, site, or outside site	56%	51%
Not enough time for test	26%	29%
Found test "very difficult"	55%	47%