

2021-2022 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 2021-2022 NAVLE.

TEST DEVELOPMENT

During 2021-2022 NAVLE test development proceeded according to ICVA/NBME established procedures. Specifically, the ICVA identified 29 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. Writing assignments, including instructional materials and information about electronic submission, were prepared and distributed to 29 committee members in March 2020. A total of 823 items were submitted by 28 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 10-12, 2020.

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. A total of 823 new items were reviewed. Of the new items, 802 items were approved for addition to the pool. A list of item writers and reviewers is shown in Appendix A.

With the established NAVLE development procedures, After the meeting, new items are then updated by NBME staff and entered into the test item library. Multiple 300-item examination forms are generated using content and statistical constraints. Due to considerations of the pandemic, twenty-five participants, including ICVA members, members of the ICVA's Assessment Development Committee (ADC), members of the American Association of Veterinary State Boards (AAVSB), and recent veterinary graduates, met remotely on April 7-9 2020, 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 are finalized, live and pretest items sufficient to prepare multiple French forms are then sent to the Canadian National Examining Board for translation and proofreading. The final step in the test development process is creation of resource files for both the English and French versions of the examination for delivery by Prometric. Quality control procedures are 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 2020-2021 NAVLE cycle. Seats were reserved at international sites for both windows.

Eligibility Processing: The ICVA and the NBME processed eligibilities of 5,445 candidates for the November-December NAVLE (expanded due to COVID-19 from the standard four-week window), and of that group 5,339 candidates tested. For the March-April window (expanded due to COVID-19 from the standard two-week window), 1,751 were submitted, and 1,680 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 333 individuals for the expanded November-December NAVLE and 214 individuals for the expanded March-April NAVLE.

Examination Summary

A summary of Prometric test center information from the November-December and March-April NAVLE is presented in Appendix C.

November-December 2021: Due to COVID-19, the testing window encompassed testing November 1, 2021 through December 31, 2021. All 5,339 examinees completed testing by December 31, 2021.

March-April 2022: Due to COVID-19, the testing window was scheduled for March 14 through April 30, 2022. All 1,680 examinees completed testing by April 30, 2022.

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 March-April NAVLE are presented in Appendix D.

SCORING AND ANALYSIS

Key Validation/Pool Review

According to ICVA/NBME established procedures for item review, live and pretest items were reviewed at the pool review meeting. 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 updated, the forms were built using banked items that met the psychometric requirements for inclusion.

Scoring Procedures

Statistical constraints were used to ensure that the test forms were as similar as possible in difficulty. Total test form difficulty varied by a small degree because forms had different items. Therefore, 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 candidates of those licensing boards, their three-digit scores were also translated into the applicable two-digit, locally derived score.

Summary Statistics

Summary statistics describing the performance of candidates on the November-December 2021, the March-April 2022 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

Initial standard setting exercises were held in Philadelphia in January 2001. Nineteen panelists used a content representative set of items from one of the NAVLE forms administered in November and December 2000. Based on the results of these exercises, a passing standard of 425 on the reported three-digit score scale was set. Standard setting exercises were held periodically in alignment with assessment best practices, with sessions in 2004, 2008, 2011, and most recently in 2019.

As examinations like the NAVLE receive ongoing updates, the passing standard -- the amount of knowledge required for passing -- is also periodically evaluated through a standard setting exercise to ensure that it 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.

The most recent NAVLE standard setting process included three standard setting exercises held in Philadelphia between October and November 2019 and included a total of 31 judges. Each panel of participants was made up 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 2021 NAVLE by Examinee Group

	Mean Scale Score	SD Scale Score	Number of Examinees Failing	Percent of Examinees Failing	Total Examinees
Criterion Group	493	68	646	15.2	4244
Non-Criterion Group	441	65	248	38.2	650
Non-Accredited Group	399	72	290	65.2	445
Total Group	479	74	1184	22.2	5339

Table 1.2. Performance on March-April 2022 NAVLE by Examinee Group

	Mean Scale Score	SD Scale Score	Number of Examinees Failing	Percent of Examinees Failing	Total Examinees
Criterion Group	453	69	83	30.7	270
Non-Criterion Group	427	51	429	45.7	939
Non-Accredited Group	404	66	296	62.8	471
Total Group	425	61	808	48.1	1680

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	490	68	729	16.1	4514
Non-Criterion Group	433	57	677	42.6	1589
Non-Accredited Group	401	69	586	64.0	916
Total Group	466	74	1992	28.4	7019

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 Item Writers/Reviewers

Dr. Rose Baker – Bovine/Cervidae
Dr. Madonna Benjamin - Porcine
Dr. Christine Calder - Feline
Dr. Heather Case—ICVA CEO
Dr. Serge Chalhoub – Feline
Dr. Jason Coe - Professional Behavior, Communication, and Practice Management
Dr. Allan Corber – Feline
Dr. Ryane Englar – Feline
Dr. Julie Fixman – Canine
Dr. Kent Hecker – ICVA Chief Assessment Officer
Dr. Bradley Heins – Bovine
Dr. E. Jane Kelly – Public Health
Dr. Lester Khoo – Aquatics
Dr. Lauren Kleine - Equine
Dr. Matthew Kornya – Feline
Dr. Gregory Lewbart – Aquatics
Dr. Kathleen MacMillan - Equine
Dr. Amanda F. Marino - Pet Bird
Dr. Fernando Marqués – Equine
Dr. Elizabeth Johnson Million – ICVA Assistant Director of Outreach & Engagement
Dr. Jeffrey Musser – Ovine/Caprine
Dr. Gilbert Patterson – Porcine
Dr. Keith Poulsen – Bovine
Dr. Maria Prado - Bovine
Dr. Karen Rosenthal - Other Small Mammal/Reptile
Dr. Christine Savidge – Canine
Dr. Jason Schewe - Poultry
Dr. Gretchen Schoeffler – Canine
Dr. Jean-Yin Tan - Equine
Dr. Karen Tefft - Canine
Dr. Helen Tuzio – Feline
Dr. Courtney Vengrin – ICVA Senior Director of Assessment

APPENDIX B

North American Veterinary Licensing Examination Form Review Meeting Participants

Dr. Rhett Bridger
Dr. Christine Calder
Dr. Heather Case—ICVA CEO
Dr. Mike Chaddock
Dr. Rob Coke
Dr. Benjamin Darien
Dr. Byron de la Navaree
Dr. Cheryl Dhein
Dr. Stephen Foulke
Dr. Kent Hecker – ICVA Chief Assessment Officer
Dr. Erich Hodges
Dr. Lester Khoo
Dr. Rachel Luoma
Dr. Fernando Marqués
Dr. Elizabeth Johnson Million – ICVA Assistant Director of Outreach & Engagement
Dr. Keith Poulsen
Dr. Maria Prado
Dr. Karen Rosenthal
Dr. Jason Schewe
Dr. Katie Steneroden
Dr. Tamara Swor
Dr. Rick Tubbs
Dr. Helen Tuzio
Dr. Courtney Vengrin – ICVA Senior Director of Assessment
Dr. Douglas Whiteside
Dr. Rheba Zimmerman

APPENDIX C

Test Administration Statistics	Nov-Dec 2021	March-April 2022
Eligible examinees (permits sent)	5,445	1,747
Examinees tested	5,339	1,680
Examinees with test accommodations	333	214
Number in Criterion Group	4,244	270
Percent in Criterion Group	79%	16%
Examinee Responses to Post-Test Survey	Nov-Dec 2021	March-April 2022
Received first choice of test site	83%	90%
Received first choice of test date	77%	79%
Traveled more than 50 miles to test site	22%	18%
Spent one or more nights away to take examination	25%	25%
No computer difficulties were encountered	81%	85%
Would recommend test site	92%	92%
No distractions in testing area, site, or outside site	56%	62%
Not enough time for test	27%	32%
Found test "very difficult"	54%	53%