

2020-2021 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 2020-2021 NAVLE.

TEST DEVELOPMENT

During 2020-2021 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. Writing assignments, including instructional materials and information about electronic submission, were prepared and distributed to 31 committee members in March 2020. A total of 848 items were submitted by the 31 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 848 new items were reviewed. Of the new items, 832 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 by a test construction engine (TCE) using content and statistical constraints. Meeting participants, including ICVA board members, members of the ICVA's Assessment Development Committee (ADC), members of the American Association of Veterinary State Boards (AAVSB), and recent veterinary graduates, then meet 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. 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 5,453 candidates for the September-December NAVLE (expanded due to COVID-19 from the standard four-week window), and of that group 5,179 candidates tested. For the March-May window (expanded due to COVID-19 from the standard two-week window), 1,607 were submitted, and 1,460 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 297 individuals for the expanded September-December NAVLE and 197 individuals for the expanded March-May NAVLE.

Examination Summary

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

September-December 2020: Due to COVID-19, the testing window encompassed testing September 1, 2020 through December 31, 2020. All 5,179 examinees completed testing by December 31, 2020.

March-May 2021: Due to COVID-19, the testing window was scheduled for March 1 through May 31, 2021 with extensions through June 11, 2021 to accommodate for individual accessibility and test site availability. Of the 1,460 examinees who tested in the March-May administration, 1,407 tested under the regular scheduled window and the remaining 53 tested during the extended period.

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 September-December and March-May NAVLE are presented in Appendix C.

SCORING AND ANALYSIS

Key Validation/Pool Review

According to ICVA/NBME established procedures for item analysis, 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, delete or re-key items from the NAVLE item bank. Once updated, the forms were built using banked items with psychometrically sound statistics. A list of pool reviewers is shown in Appendix B.

Scoring Procedures

The test construction engine used to generate the test forms ensured that forms were as similar as possible in difficulty. However, because forms had different items, their difficulties varied to some small degree. 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 September-December 2020, the March-May 2021 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

Original standards 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. Standards 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 September-December 2020 NAVLE by Examinee Group

	Mean Scale Score	SD Scale Score	Number of Examinees Failing	Percent of Examinees Failing	Total Examinees
Criterion Group	501	64	473	11.2	4219
Non-Criterion Group	445	60	194	35.5	547
Non-Accredited Group	390	74	270	65.4	413
Total Group	487	73	937	18.1	5179

Table 1.2. Performance on March-May 2021 NAVLE by Examinee Group

	Mean Scale Score	SD Scale Score	Number of Examinees Failing	Percent of Examinees Failing	Total Examinees
Criterion Group	452	71	108	36.4	297
Non-Criterion Group	433	50	291	40.8	713
Non-Accredited Group	407	73	258	57.3	450
Total Group	429	64	657	45.0	1460

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	498	66	581	12.9	4516
Non-Criterion Group	438	55	485	38.5	1260
Non-Accredited Group	399	74	528	61.2	863
Total Group	474	75	1594	24.0	6639

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 for 2020-2021

Dr. Rose Baker – Bovine/Cervidae
Dr. Madonna Benjamin - Porcine
Dr. Christine Calder - Feline
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 Pool Review Meeting Participants for 2020-2021

Dr. Beth Boynton
Dr. Heather Case—ICVA CEO
Dr. Jason Coe
Dr. Cheryl Dhein
Dr. Julie Fixman
Dr. Meg Glattly
Dr. Susan Gogolski
Dr. Thomas Hairgrove
Dr. Kent Hecker – ICVA Chief Assessment Officer
Dr. Bradley Heins
Dr. Lauren Kleine
Dr. Kathleen MacMillan
Dr. Elizabeth Johnson Million – ICVA Assistant Director of Outreach & Engagement
Dr. Teresa Morishita
Dr. Keith Poulsen
Dr. Maria Prado
Dr. Karen Robertson
Dr. Gretchen Schoeffler
Dr. Tamara Swor
Dr. Helen Tuzio
Dr. Courtney Vengrin – ICVA Senior Director of Assessment
Dr. Jonathan Yardley
Dr. Bianca Zaffarano

APPENDIX C

Test Administration Statistics	Sept-Dec 2020	March-May 2021
Eligible examinees (permits sent)	5,080	1,283
Examinees tested	5,179	1,460
Examinees with test accommodations	297	197
Number in Criterion Group	4,219	297
Percent in Criterion Group	81%	20%
Examinee Responses to Post-Test Survey	Sept-Dec 2020	March-May 2021
Received first choice of test site	82%	89%
Received first choice of test date	77%	71%
Traveled more than 50 miles to test site	24%	16%
Spent one or more nights away to take examination	29%	24%
No computer difficulties were encountered	81%	80%
Would recommend test site	92%	86%
No distractions in testing area, site, or outside site	51%	57%
Not enough time for test	26%	40%
Found test “very difficult”	59%	57%

