



# MEMORANDUM

<b>DATE</b>	October 1, 2020
<b>TO</b>	Veterinary Medical Board
<b>FROM</b>	Jessica Sieferman, Executive Officer
<b>SUBJECT</b>	<b>Agenda Item 6A. Office of Professional Examination Services (OPES) Review of North American Veterinary Licensing Examination (NAVLE) and Occupational Analysis and Linkage Study</b>

**Background**

Pursuant to Business and Professions Code (BPC) section [139](#), occupational analyses and examination validation studies are fundamental components of licensure programs. The Department of Consumer Affairs (DCA) is required to develop a policy guiding the occupational analyses and validation studies.

DCA’s policy (OPES 18-02) states that licensure examinations with substantial validity evidence are essential in preventing unqualified individuals from obtaining professional licenses. To that end, licensure examinations must be:

- Developed following an examination outline that is based on a current occupational analysis.
- Regularly evaluated.
- Updated when tasks performed or prerequisite knowledge in a profession or on a job change, or to prevent overexposure of test questions.
- Reported annually, in terms of validation activities, to the California State Legislature.

Generally, an occupational analysis and examination outline should be updated every five years to be considered current.

BPC section [4848](#) currently requires the following three veterinary licensing examinations to determine competency to practice as a veterinarian:

1. A national examination (NAVLE).
2. A California state board examination (CSBE).
3. A veterinary law examination (VLE), which is an examination of the statutes and regulations of the Veterinary Medicine Practice Act (Practice Act) administered by regular mail, email, or both.

University of California and Western University of Health Sciences veterinary medical students who have successfully completed a Board-approved course on veterinary law and ethics covering the Practice Act are exempt from taking the VLE.

OPES conducted a comprehensive review of the NAVLE. In addition, OPES assessed the contents of the CSBE and the VLE in relation to the results of the NAVLE review to evaluate their continued use for veterinary licensure in California. OPES found that the procedures used to establish and support the validity and defensibility of the components listed above met professional guidelines and technical standards outlined in BPC section [139](#) and the Standards for Educational and Psychological Testing (2014) (Standards).

The results of the linkage study indicate that all practice areas of California veterinary practice are measured by the NAVLE, except for California law, rules, and regulations. Accordingly, OPES recommends that the CSBE be revised from a practice-based examination to a supplemental examination that measures California law, rules, and regulations only. OPES also recommends that passing this examination be required for entry level licensure in California, in addition to the NAVLE. The revised CSB supplemental examination, which all candidates would be required to pass, would replace the current VLE.

During the October Board meeting, OPES will present their findings and recommendations to the Board. In addition, the International Council for Veterinary Assessment ([ICVA](#)) and the American Association of Regulatory Boards ([AAVSB](#)) representatives will be available for any members who have questions regarding the NAVLE or other state requirements. To assist the presentation and Board discussion, Board members and the public are encouraged to email questions for OPES, ICVA, or AAVSB to the Board's Executive Officer at [Jessica.Sieferman@dca.ca.gov](mailto:Jessica.Sieferman@dca.ca.gov) prior to the meeting.

**Attachments:**

1. OPES PowerPoint Presentation
2. [Review of the North American Veterinary Licensing Examination 2020](#)
3. [2020 Occupational Analysis of the Veterinarian Profession](#)

# Veterinarian Occupational Analysis Results and Review of North American Veterinary Licensing Examination

October 2020



# Licensure Examinations

- Provide a reliable method for identifying practitioners who are able to practice **safely and competently**
- Focus on entry-level tasks and knowledge important for **public protection**
- Use input from **subject matter experts** (SMEs) and guidance from **test specialists**
- Adhere to **professional guidelines** and **technical standards**

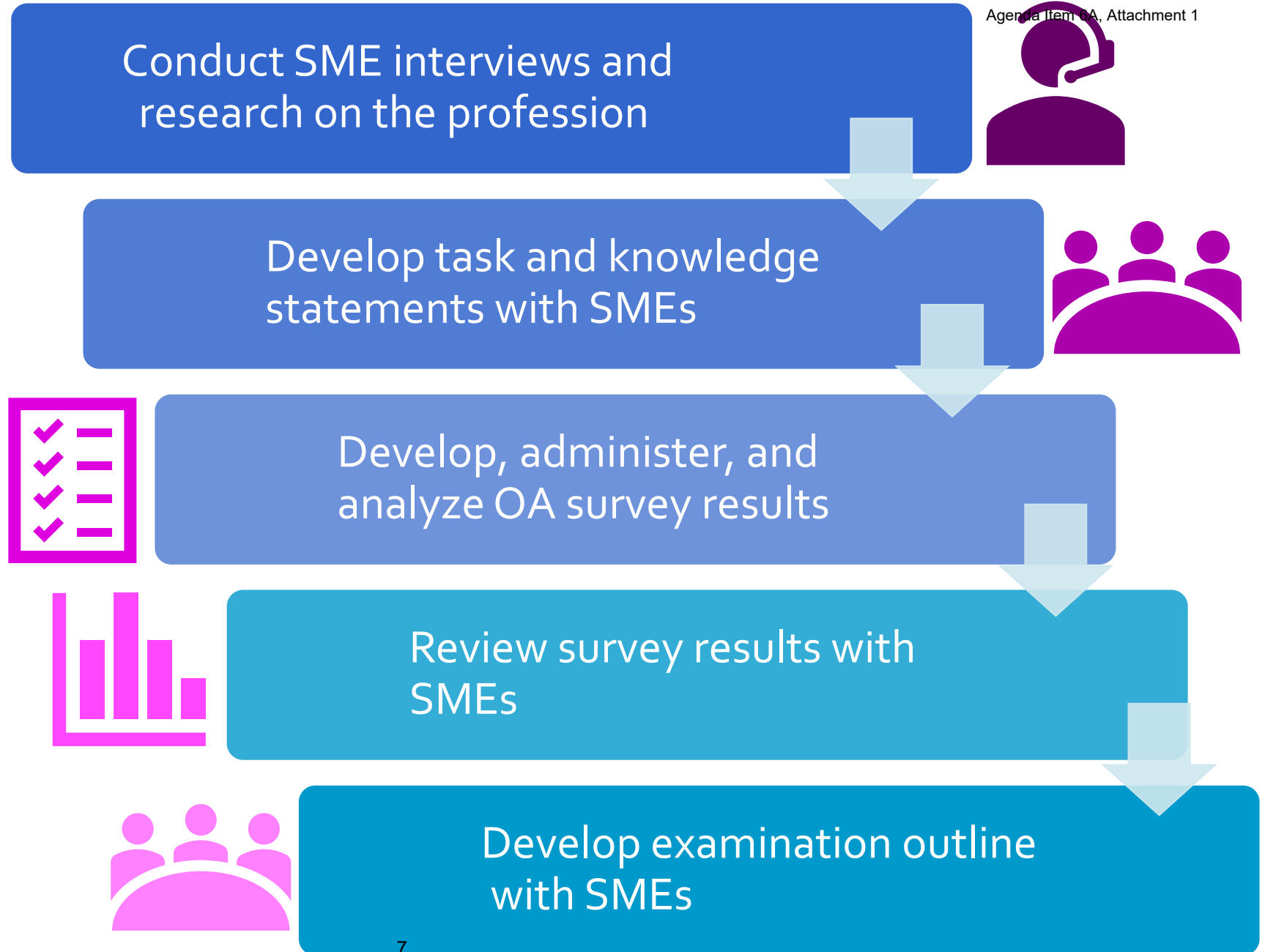


# Cycle of Examination Development

# Occupational Analysis (OA)

- 1 Provides a description of current practice
- 2 Provides the basis of job-related, fair, and legally defensible examinations
- 3 Establishes validity by linking examination content to critical job competencies
- 4 Provides the basis for legislation and policies

# Occupational Analysis (OA) Process

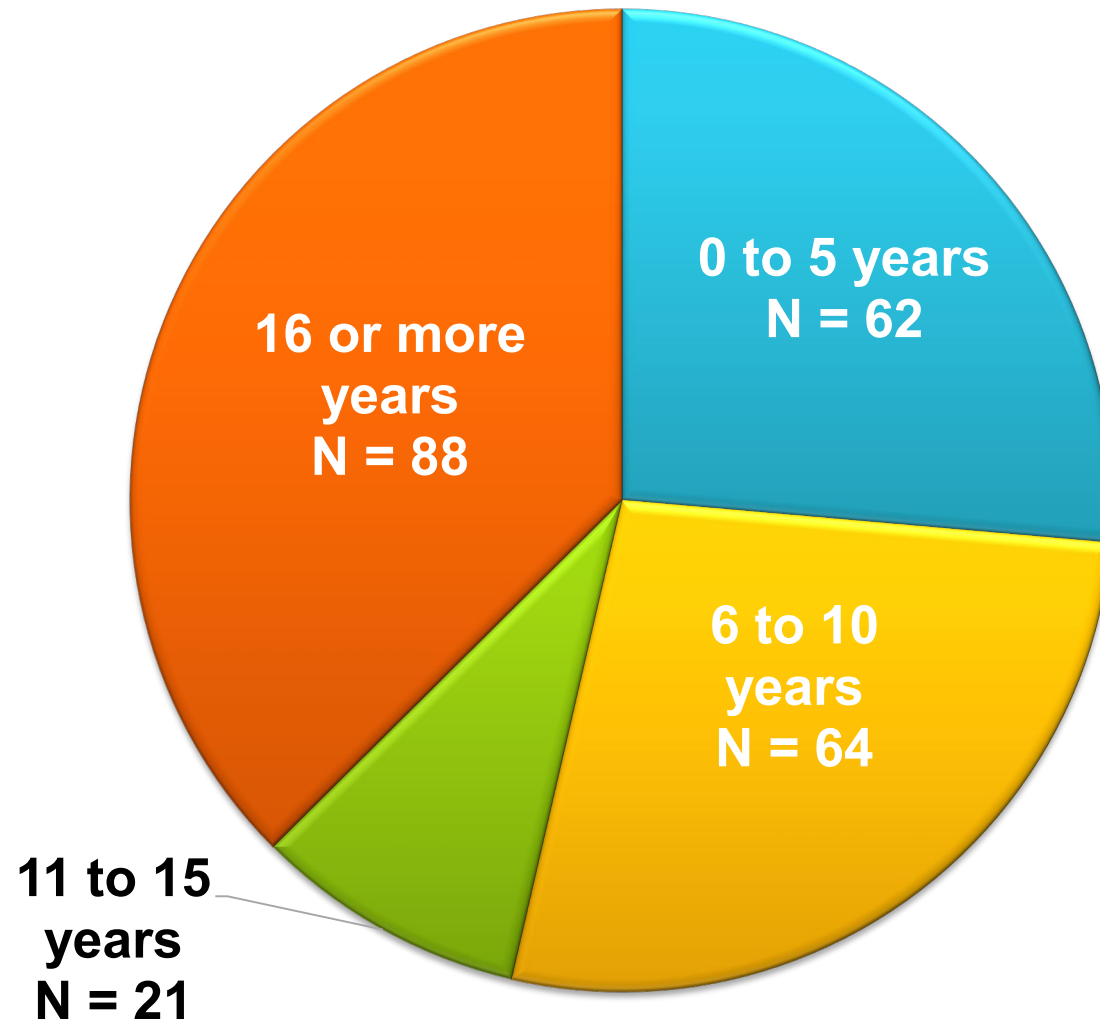


## Veterinarian Occupational Analysis Results

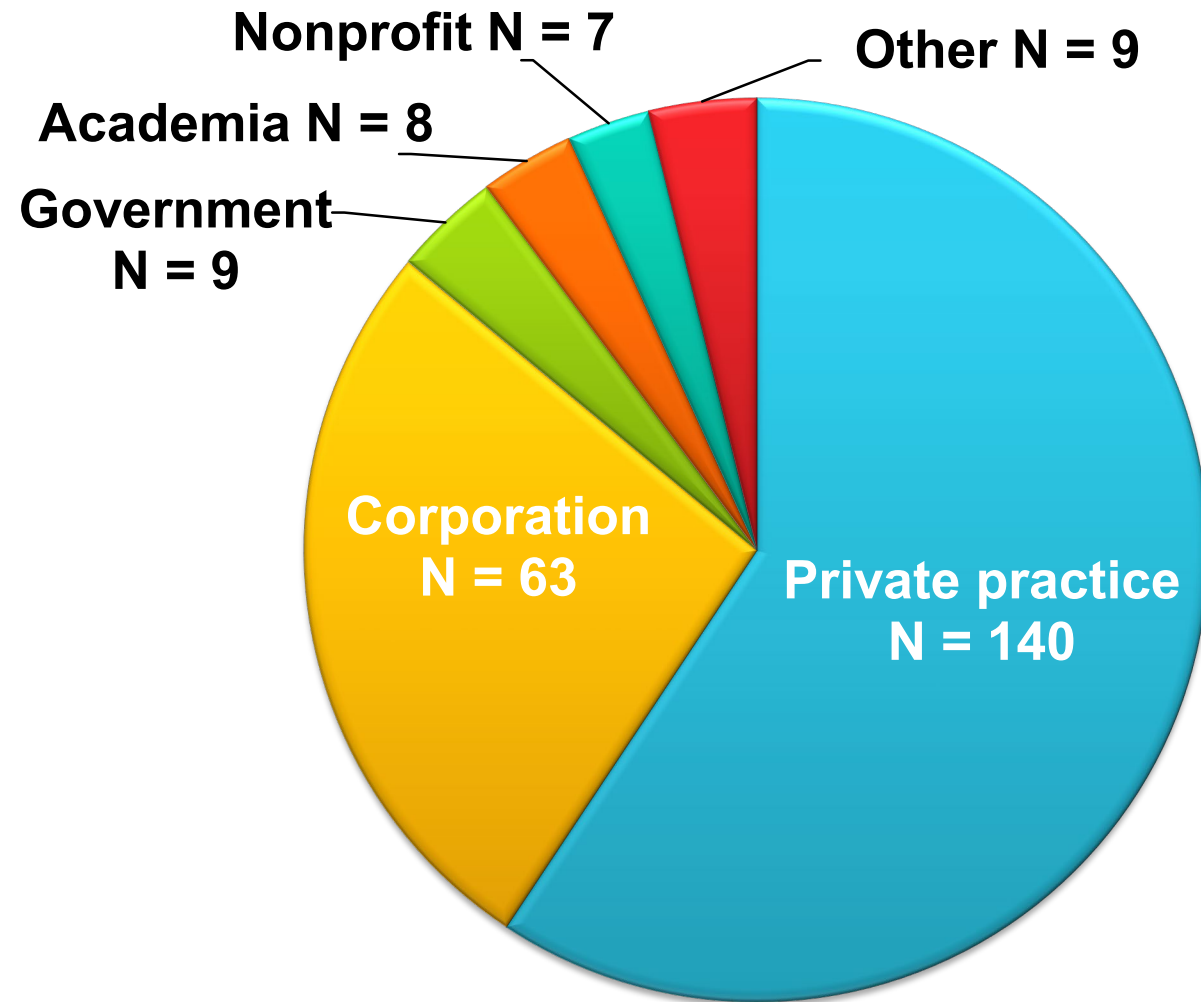
- Survey invitation to access web-based survey was mailed to 5,645 licensees
- Final sample size for data analysis was **236** or **4.18%**
- Demographic questions included in survey to provide context for interpreting results



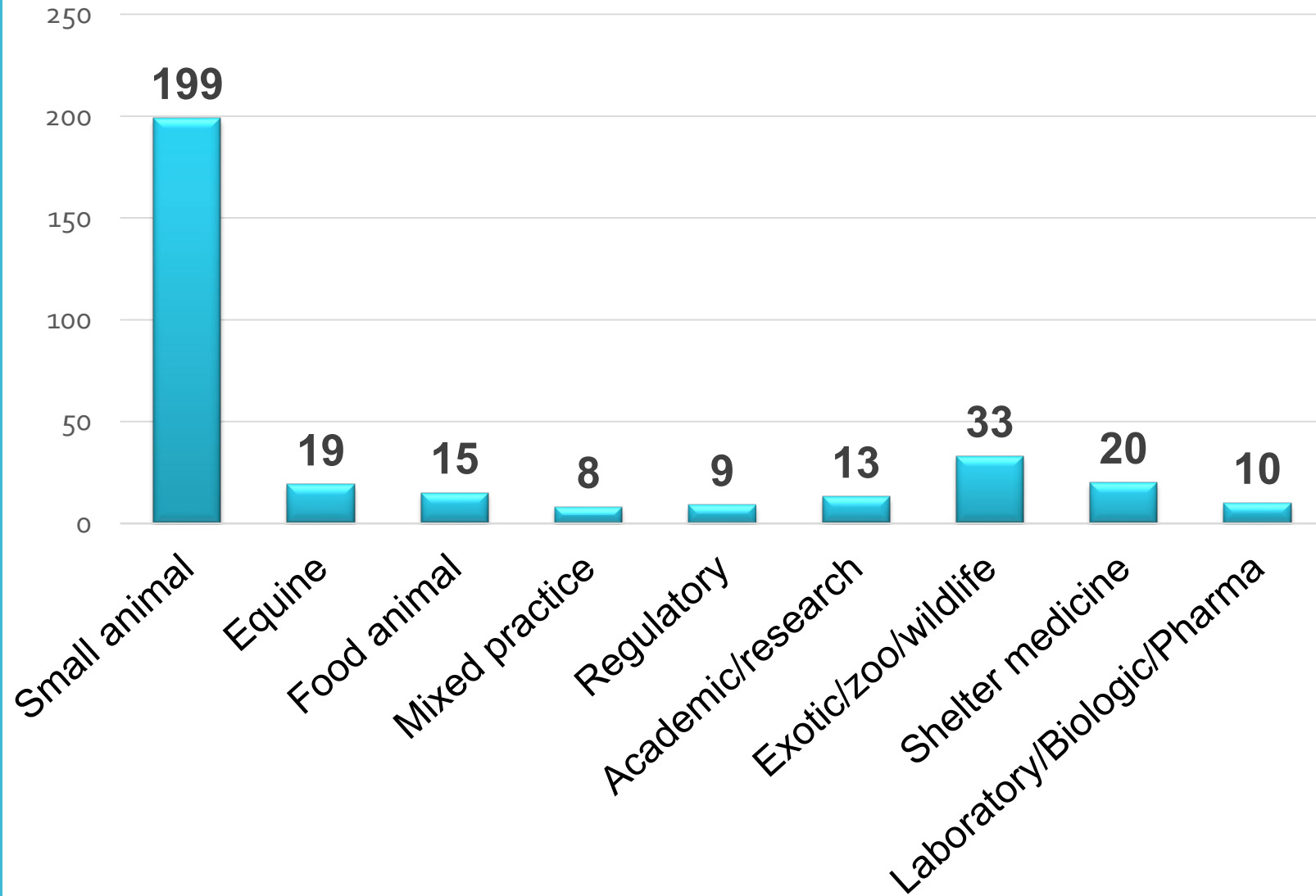
# Years Licensed as a Veterinarian



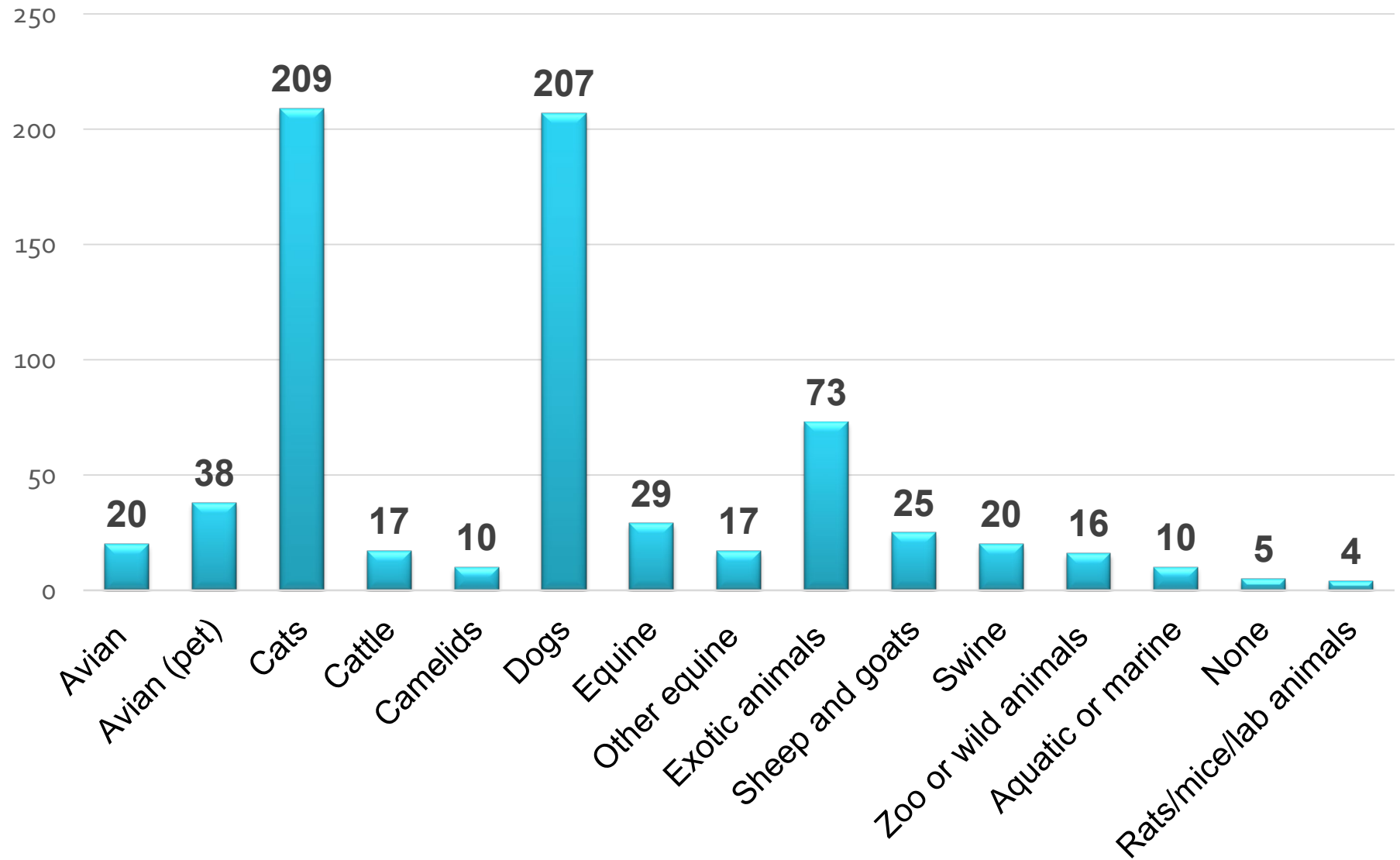
# Primary Employer



# Practice Specialty



# Patients Treated



# Respondents by Region

REGION NAME	NUMBER (N)	PERCENT
Los Angeles County and Vicinity	62	26.3%
San Francisco Bay Area	52	22.0%
San Joaquin Valley	24	10.2%
Sacramento Valley	19	8.1%
San Diego County and Vicinity	23	9.7%
Shasta - Cascade	4	1.7%
Riverside and Vicinity	17	7.2%
Sierra Mountain Valley	9	3.8%
North Coast	11	4.7%
South Coast and Central Coast	14	5.9%
<b>Total</b>	<b>235</b>	<b>100%*</b>

# Task and Knowledge Ratings

- **FREQUENCY SCALE**: How often do you perform this task in your current practice?
  - 0 – **DOES NOT APPLY.** “I do not perform this task in my current practice.”
  - 5 – **VERY OFTEN.** “This task is one of the tasks I perform most often in my current practice relative to other tasks I perform.”
- **IMPORTANCE SCALE**: How important is this task / knowledge for effective performance in your current practice?
  - 1 – **NOT IMPORTANT.** “This task is not important for effective performance in my current practice.”
  - 5 – **CRITICALLY IMPORTANT.** “This task is extremely important for effective performance in my current practice.”

## Examination Outline

Decisions made based on evaluation of data and on SME consensus

- Identify critical tasks and knowledge
- Confirm task-knowledge linkage
- Determine final content area weights

# California Veterinarian Examination Outline

<b>Content Area</b>	<b>Content Area Weight</b>
<b>1. Patient Signalment and History</b>	<b>12%</b>
<b>2 Patient Physical Examination</b>	<b>20%</b>
<b>3. Patient Data Assessment</b>	<b>8%</b>
<b>4. Diagnostic Planning and Procedures</b>	<b>13%</b>
<b>5. Diagnostic Interpretation</b>	<b>6%</b>
<b>6. Treatment Planning</b>	<b>11%</b>
<b>7. Treatment</b>	<b>12%</b>
<b>8. Disease Prevention and Health Management</b>	<b>5%</b>
<b>9. Professional and Legal Responsibilities</b>	<b>13%</b>
<b>Total</b>	<b>100%</b>



# Psychometric Review of the North American Veterinary Licensing Examination (NAVLE)

- Occupational Analysis
- Examination Development
- Passing Score Determination
- Examination Scoring and Passing Rates
- Examination Administration and Security
- Information Available to Candidates

# Linkage Study Process

California

- Review 2019 California OA task and knowledge statements

NAVLE

- Review NAVLE competencies

Link

- Link NAVLE competencies to California OA task and knowledge statements

Review

- Review results of linkage

Determine

- Determine need for California-specific exam based on linkage study results

# Examples of Recommendations Based on the OA and National Review Results



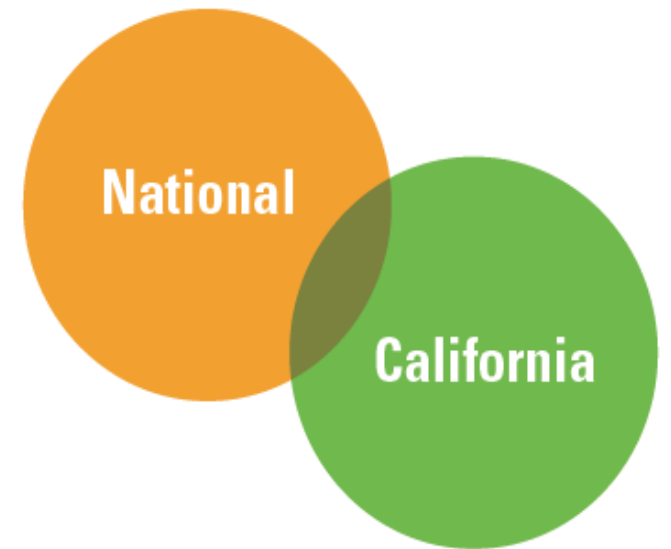
**OPES recommendation:**

- National examination
- California law examination



**OPES recommendation:**

- National examination
- California-specific law and practice examination



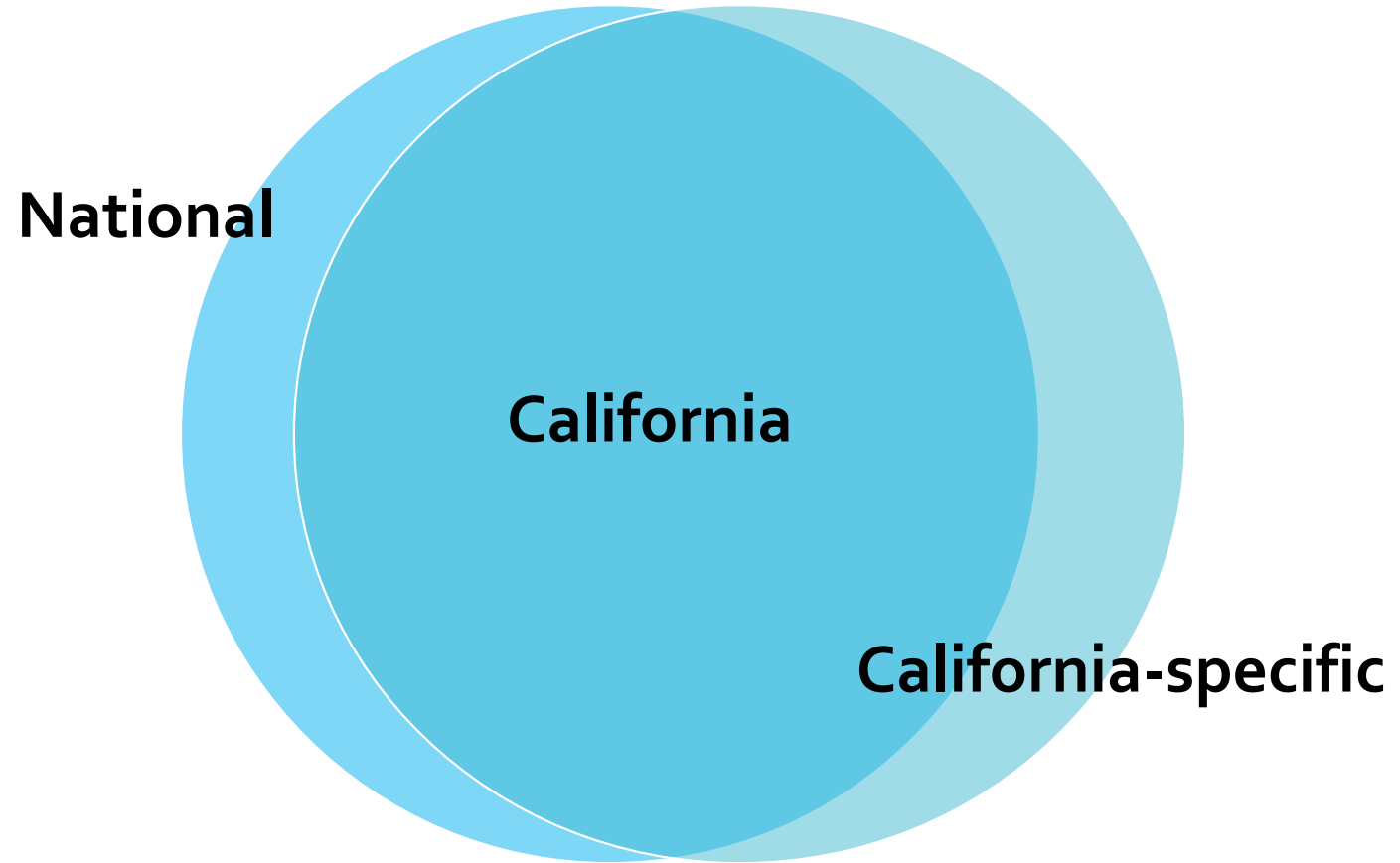
**OPES recommendation:**

- California examination

# Linkage Study Results

- NAVLE adequately assesses entry-level practice in California
- NAVLE does **NOT** assess all California laws and regulations related to veterinary practice

# Linkage Study Results



Comparison of  
NAVLE  
Species and  
Diagnoses with  
California-prevalent  
species and  
diagnoses

- NAVLE assesses majority of California-prevalent diseases and diagnoses
- California-specific diseases have become regional

## OPES Recommendations

- Replace current California practice-based state board examination with law and regulations examination
- Discontinue current mail-out Veterinary Licensing Examination

## Next Steps

### Develop new California-Specific Examination

- Work with SMEs to develop new examination outline and update reference list
- Review existing test questions based on updated examination outline
- Develop new test questions and examinations based on updated examination outline





REVIEW OF THE INTERNATIONAL COUNCIL FOR VETERINARY  
ASSESSMENT NORTH AMERICAN VETERINARY LICENSING EXAMINATION





VETERINARY MEDICAL BOARD

REVIEW OF THE INTERNATIONAL COUNCIL FOR  
VETERINARY ASSESSMENT NORTH AMERICAN  
VETERINARY LICENSING EXAMINATION



July 2020

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This national review report is mandated by California Business and Professions (B&P) Code § 139 and by DCA Licensure Examination Validation Policy OPES 18-02.

## EXECUTIVE SUMMARY

Licensing boards and bureaus within the California Department of Consumer Affairs (DCA) are required to ensure that examination programs used in the California licensure process comply with psychometric and legal standards. The Veterinary Medical Board of California (Board) requested that DCA's Office of Professional Examination Services (OPES) complete a comprehensive review of the International Council for Veterinary Assessment (ICVA) North American Veterinary Licensing Examination (NAVLE). The primary intent of the review was to evaluate the suitability of the NAVLE for continued use in California licensure of veterinarians.

The Board currently requires candidates to have the requisite education and experience and to pass three written examinations for veterinary licensure in California:

1. The North American Veterinary Licensing Examination (NAVLE).
2. The California Veterinary State Board Examination (CSB).
3. The mail-out Veterinary Law Examination (VLE), which covers information found in the California Veterinary Medicine Practice Act.

Candidates attending their senior year at either the University of California, Davis or Western University Health Sciences are exempt from taking the VLE.

The secondary intent of the review was to assess the contents of the CSB and the VLE in relation to the NAVLE review results to evaluate their continued use for veterinary licensure in California.

OPES, in collaboration with the Board, received and reviewed documents provided by ICVA. Follow-up emails were exchanged to clarify the procedures and practices used to validate and develop the NAVLE. OPES performed a comprehensive evaluation of the documents to determine whether the following NAVLE components met professional guidelines and technical standards: (a) occupational analysis (OA), (b) examination development, (c) passing scores, (d) test administration, (e) examination scoring and performance, (f) information available to candidates, and (g) test security.

OPES found that the procedures used to establish and support the validity and defensibility of the components listed above meet professional guidelines and technical standards outlined in the *Standards for Educational and Psychological Testing* (2014) (*Standards*) and in California Business and Professions (B&P) Code § 139. However, to better adhere to B&P Code § 139 and related policy, OPES recommends that NAVLE phase out the use of faculty members and educators in the examination development and passing score setting processes.

In May and June 2020, OPES convened a panel of California veterinarians to serve as subject matter experts (SMEs) to review the content of the NAVLE. The SMEs were selected by the Board to represent the profession based on their geographic location, experience, and practice specialty. The SMEs were asked to review the NAVLE competencies based on the ICVA 2017 NAVLE Veterinary Profession Practice Analysis (*ICVA 2017 OA*) and to compare them with the

tasks and knowledge statements that comprise the 2019 examination outline used for the CSB, which are based on the 2019 California Veterinary OA (2019 California OA) performed by OPES. This linkage was performed to identify whether there were areas of California veterinary practice not measured by the NAVLE.

In addition, the SMEs were asked to compare the California-prevalent diseases and diagnoses included in the California examination outline with the NAVLE Species and Diagnoses document, which outlines the species and diagnoses assessed by the NAVLE.

The results of the linkage study indicate that all practice areas of California veterinary practice are measured by the NAVLE except California law, rules, and regulations. OPES recommends that the CSB be revised from a practice-based examination to a CSB supplemental examination that measures California law, rules, and regulations only. OPES recommends that passing this examination be required for entry level licensure in California, in addition to the NAVLE. The revised CSB supplemental examination, which all candidates would be required to pass, would replace the current mail-out Veterinary Law Examination (VLE).

## TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	iii
<b>CHAPTER 1   INTRODUCTION.....</b>	<b>1</b>
<b>CHAPTER 2   OCCUPATIONAL ANALYSIS .....</b>	<b>3</b>
<b>CHAPTER 3   EXAMINATION DEVELOPMENT .....</b>	<b>9</b>
<b>CHAPTER 4   PASSING SCORES AND PASSING RATES.....</b>	<b>13</b>
<b>CHAPTER 5   TEST ADMINISTRATION .....</b>	<b>17</b>
<b>CHAPTER 6   EXAMINATION SCORING AND PERFORMANCE .....</b>	<b>19</b>
<b>CHAPTER 7   INFORMATION AVAILABLE TO CANDIDATES.....</b>	<b>21</b>
<b>CHAPTER 8   TEST SECURITY.....</b>	<b>23</b>
<b>CHAPTER 9   COMPARISON OF THE NAVLE EXAMINATION BLUEPRINT TO THE CALIFORNIA EXAMINATION OUTLINE .....</b>	<b>25</b>
<b>CHAPTER 10   CONCLUSIONS.....</b>	<b>29</b>
<b>CHAPTER 11   REFERENCES.....</b>	<b>31</b>

## LIST OF TABLES

TABLE 1 – CONTENT CATEGORIES OF THE NAVLE BLUEPRINT ..... 27

TABLE 2 – CONTENT AREAS OF THE 2019 CALIFORNIA EXAMINATION OUTLINE  
..... 28



## CHAPTER 1 | INTRODUCTION

### PURPOSE OF THE COMPREHENSIVE REVIEW

Licensing boards and bureaus within the California Department of Consumer Affairs (DCA) must ensure that examination programs used in the California licensure process comply with psychometric and legal standards. The public must be reasonably confident that an individual passing a licensure examination has the requisite knowledge and skills to competently and safely practice in the veterinary profession.

The Veterinary Medical Board (Board) requested that DCA's Office of Professional Examination Services (OPES) complete a comprehensive review of the International Council for Veterinary Assessment (ICVA) North American Veterinary Licensing Examination (NAVLE). The OPES review included the following:

1. Evaluating the suitability of the NAVLE for continued use in California.
2. Determining whether the NAVLE meets the professional guidelines and technical standards outlined in the *Standards for Educational and Psychological Testing* (2014) (*Standards*<sup>1</sup>) and in California B&P Code § 139.
3. Identifying any areas of California veterinary practice the NAVLE does not assess.
4. Assessing the content of the California Veterinary State Board Examination (CSB) and the Veterinary Law Examination (VLE) in relation to the NAVLE review results to evaluate their continued use for veterinary licensure in California.

OPES, in collaboration with the Board, requested documentation from ICVA, including the ICVA 2017 NAVLE Veterinary Profession Practice Analysis (*ICVA 2017 OA*), to determine whether the NAVLE examination components meet professional guidelines and technical standards outlined in the *Standards* and in B&P Code § 139: (a) occupational analysis,<sup>2</sup> (b) examination

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<sup>1</sup> *Standards* references information taken from: American Educational Research Association, American Psychological Association, and National Council on Measurement in Education. *Standards for Educational and Psychological Testing* (2014). Washington, DC: American Educational Research Association.

<sup>2</sup> An occupational analysis is also known as a job analysis, practice analysis, or task analysis.

development, (c) passing scores,<sup>3</sup> (d) test administration, (e) examination scoring and performance, (f) information available to candidates, and (g) test security protocols.

OPES used the *ICVA 2017 OA* in this review. The finalized OA was approved by the Collaboration for Veterinary Assessments Governance Committee (CVAGC) and by the ICVA Board of Directors.

## CALIFORNIA LAW AND POLICY

California B&P Code § 139 states:

The Legislature finds and declares that occupational analyses and examination validation studies are fundamental components of licensure programs.

It further requires that DCA develop a policy to address the minimum requirements for psychometrically sound examination validation, examination development, and occupational analyses, including standards for the review of state and national examinations.

DCA Licensure Examination Validation Policy OPES 18-02 specifies the *Standards* as the most relevant technical and professional standards to be followed to ensure that examinations used for licensure in California are psychometrically sound, job-related, and legally defensible (*OPES 18-02*).

DCA Participation in Examination Development Workshops Policy OPES 18-01 specifies that due to potential conflict of interest, undue influence, and security considerations, board members, committee members, and instructors should not serve as expert consultants in the licensure examination development process (*OPES 18-01*).

## FORMAT OF THE REPORT

The chapters of this report provide the relevant standards related to psychometric aspects of the NAVLE and describe the findings and recommendations that OPES identified during its review.

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<sup>3</sup> A passing score is also known as a pass point or cut score.

## CHAPTER 2 | OCCUPATIONAL ANALYSIS

### STANDARDS

The following standard is most relevant to conducting OAs for licensure examinations, as referenced in the *Standards*:

#### **Standard 11.13**

The content domain to be covered by a credentialing test should be defined clearly and justified in terms of the importance of the content for credential-worthy performance in an occupation or profession. A rationale and evidence should be provided to support the claim that the knowledge or skills being assessed are required for credential-worthy performance in that occupation and are consistent with the purpose for which the credentialing program was instituted (pp. 181-182).

The comment following Standard 11.13 emphasizes its relevance:

*Comment:* Typically, some form of job or practice analysis provides the primary basis for defining the content domain. If the same examination is used in the credentialing of people employed in a variety of settings and specialties, a number of different job settings may need to be analyzed. Although the job analysis techniques may be similar to those used in employment testing, the emphasis for credentialing is limited appropriately to knowledge and skills necessary for effective practice (p. 182).

In tests used for licensure, knowledge and skills that may be important to success but are not directly related to the purpose of licensure (i.e., protecting the public) should not be included (p. 182).

California B&P Code § 139 requires that each California licensing board, bureau, commission, and program report annually on the frequency of its occupational analysis and the validation and development of its examinations. *OPES 18-02* states:

Generally, an occupational analysis and examination outline should be updated every five years to be considered current; however, many factors are taken into consideration when determining the need for a different interval. For instance, an occupational analysis and examination outline must be updated whenever there are significant changes in a profession's job tasks and/or demands, scope of practice, equipment, technology, required knowledge, skills and abilities, or law and regulations governing the profession (p. 4).

## FINDINGS

ICVA, in collaboration with the National Board of Medical Examiners (NBME), conducted the OA for the NAVLE. The results of the study are documented in the *ICVA 2017 OA*.

### Occupational Analysis – Methodology and Time Frame

The purpose of the OA was to ensure that licensure examinations required for the practice of veterinary medicine remain highly job-related (*ICVA 2017 OA*). The methodology used to conduct the OA study was an online survey. A group of subject matter experts (SMEs) was established to participate during various stages of the project. The survey was developed by ICVA with the assistance of NBME staff and SMEs. The SMEs included veterinarians from the U.S. and Canada as well as qualified psychometricians. The survey was administered to a sample of 19,829 veterinarians throughout North America (all 50 states and 6 Canadian provinces), selected to reflect the current population of veterinarians with respect to age, gender, location, and practice characteristics.

Finding 1: Although it took three years to complete, the OA was conducted within a time frame considered to be current and legally defensible. The study began in December of 2014 and was completed in 2017.

### Occupational Analysis – Development of Survey and Sampling Plan

ICVA representatives and NBME staff facilitated survey development, beginning with the development of a project plan and a review of relevant literature. The SMEs outlined and designed the various sections and content of the main survey and developed a list of diagnoses by species and a list of competencies. The resulting lists were then used to develop a draft survey for pilot testing. The draft survey was provided to and approved by the ICVA Board, which comprises 13 directors, each designated by one of ICVA's constituent organizations (AAVSB, AAVMC, AVMA COE, and the CNEB), and 5 at-large directors. The final practice analysis survey consisted of three sections: Demographics and Practice Characteristics, Species and Diagnoses, and Clinical and Professional Competencies. Each respondent was asked to evaluate specific species and/or competency statements based on their responses to demographic questions at the beginning of the survey (*ICVA 2017 OA*).

“The purpose of the Demographics and Practice Characteristics section was to gather relevant individual participant information to (1) route respondents to specific sections of the questionnaire based on practice sector and particular types of species encountered; (2) gather required information for validity, generalizability, and data interpretation (i.e., to verify that the sample is comparable to known US and Canadian veterinary demographics); and (3) to compare groups of participants based on practice type, gender, or other factors” (*ICVA 2017 OA*, p. 5).

The purpose of the Species and Diagnoses section was to “evaluate individual species and diagnoses in order to estimate how often veterinarians in clinical practice encounter particular diagnoses” (*ICVA 2017 OA*, p. 5). Finally, the purpose of the Clinical and Professional Competencies section was to gather data to “determine the relative contribution of distinct competencies for safe and effective practice” (*ICVA 2017 OA*, p. 6).

For the Species and Diagnoses section, “respondents were asked to indicate the frequency with which they encountered a diagnosis in the practice of veterinary medicine. The possible frequency response options were Daily, Weekly, Monthly, Rarely, and Never” (*ICVA 2017 OA*, p. 6). Information on criticality or level of importance of each diagnosis for competent practice was gathered separately from information provided by a group of 135 SMEs.

For the Clinical and Professional Competencies section, “respondents were asked to indicate the response that most closely reflected the frequency with which he or she performed each behavior as they practiced veterinary medicine. The response options were Daily, Weekly, Monthly, and Quarterly or Less. Respondents could also indicate ‘I do not do this’” (*ICVA 2017 OA*, p. 7). Information on criticality or level of importance of each competency was gathered separately from information provided by a group of 25 SMEs.

The draft survey was pilot tested with a random sample of 265 veterinarians and consisted of a total of 1,034 diagnoses spanning 23 animal species and 103 work activities (competencies), including both clinical and professional behaviors.

Finding 2: The procedure used by ICVA to develop the survey meets professional guidelines and technical standards.

### Occupational Analysis – Sampling Plan

The sampling plan for the main survey included veterinarians close to the entry level of practice from all 50 states and from 6 Canadian provinces. For the Canadian sample, the Canadian Veterinary Medical Association (CVMA) contacted 3,564, or roughly 49% of its 7,200 members, on behalf of the ICVA, requesting they complete the survey. The survey and all communications were translated into French to include French-speaking veterinarians. For the U.S. sample, the American Veterinary Medical Association (AVMA) provided contact information for 16,000, or roughly 17%, of its 95,000 members.

A total of 6,975 responses to the survey were determined to be sufficiently complete to contribute to survey analysis, resulting in a response rate of 35%. Survey respondents from the U.S. made up the majority of the sample. The respondents were asked the geographic region, and not the state, in which they performed most of their work, with 13% of the respondents selecting the Pacific (Alaska, California, Hawaii, Oregon, Washington) region.

A separate survey aimed at gathering expert opinion on the potential impact (criticality) of the activities that appeared in the Clinical and Professional Competencies section of the *ICVA 2017*

OA survey was developed and sent to 25 SMEs familiar with ICVA and the purpose of the NAVLE. Each respondent was asked to rate the criticality of each competency to the well-being of animal patients, clients, and people in the work area, and to public health and environmental impact (*ICVA 2017 OA*). Another separate survey aimed at gathering information about the criticality of each diagnosis was developed and sent to 135 SMEs known to ICVA. This information was gathered “to ensure that our veterinary practice analysis study reflects the most accurate level of importance for each diagnosis potentially encountered by an entry-level veterinarian” (*ICVA 2017 OA*, p. 12).

The 25 SMEs described above were also asked to evaluate each of the competency statements and to sort them into meaningful groups (domains) based on perceived similarity. The results of the sorting exercise were subjected to multivariate analyses (cluster analysis or factor analysis) and SME review to develop a competency framework to serve as input for the NAVLE blueprint (*ICVA 2017 OA*).

After the main survey was administered and the additional criticality information was gathered, an additional group of 11 SMEs was convened. The primary objective of this meeting was to build consensus around the high-level blueprint for the diagnosis and competency domains. A final proposed blueprint was developed and shared with the ICVA Board (*ICVA 2017 OA*).

Finding 3: Although the criticality ratings were not obtained through the main survey, the intent of the sampling plan was reasonable and meets professional standards and technical guidelines. Practicing veterinarians in California comprised a sufficient proportion of the final respondent sample.

### Occupational Analysis – Survey Results

The key findings indicated that the diagnoses and competencies represent a complete description of the specific elements of the practice of entry level veterinarians.

Similar species were grouped together for the purposes of criticality analyses for the Species and Diagnoses section. Diagnoses within each organ system within each species group were evaluated for criticality. Criticality ratings were averaged and presented for each species group. Findings showed consistent levels of importance for each species group.

ICVA collected the survey competency data and analyzed the frequency rating results. The key findings showed that competencies within the Clinical Practice (Domain 1) and Communication (Domain 2) domains are performed more frequently than those in the Professionalism, Practice Management, and Wellness (Domain 3) and the Preventive Medicine and Animal Welfare (Domain 4) domains.

Competency criticality ratings obtained from the supplemental surveys were analyzed and averaged. The criticality ratings show that the competencies comprising the Clinical Practice

domain (Domain 1) are viewed as the most critical, closely followed by the Preventive Medicine and Animal Welfare (Domain 4) and the Communication (Domain 2) domains.

Finding 4: The respondents were practicing veterinarians from throughout the U.S. and Canada. A satisfactory percentage (38%) of the respondents reported that they had been practicing 10 years or fewer, and the majority reported working 40 hours or more per week as a veterinarian. Of the total respondents, the majority categorized their primary employment sector as private practice, with the next most frequent as academia.

#### Occupational Analysis – Development of Test Specifications

Weights for each species group were based on multiple sources of empirical information and SME judgments, including the percentage of veterinarians who work with each species, the percentage of time a veterinarian spends with each species, the frequency with which each diagnosis is encountered in practice, and the criticality of each diagnosis. The weights for the current test blueprint were also considered. SMEs were asked to integrate this information and assign weights as part of a two-stage exercise. Based on frequency and criticality results, various sources of information, and on the ability of the test item bank to support each content area, the blueprint topic weights were proposed (*ICVA 2017 OA*).

Finding 5: The linkage between the critical competencies required by entry level veterinarians and the major content areas of the NAVLE demonstrates a sufficient level of validity, thereby meeting professional guidelines and technical standards.

## CONCLUSIONS

Given the findings, the occupational analysis conducted by ICVA meets professional guidelines and technical standards. Additionally, the development of the test specifications for the NAVLE is based on the results of the *ICVA 2017 OA* and meets professional guidelines and technical standards.

## RECOMMENDATIONS

In future OA reports, OPES recommends that the survey frequency rating results for Species and Diagnoses be included as well as the criticality ratings for specific diagnoses or for specific organ systems.





## CHAPTER 3 | EXAMINATION DEVELOPMENT

### STANDARDS AND REGULATIONS

Examination development includes many steps within an examination program, from the development of an examination content outline to scoring and analyzing items after the administration of an examination. Several specific activities involved in the examination development process are evaluated in this section. The activities include item writing, linking items to the examination content outline, and developing the scoring criteria and the examination forms.

The following standards are most relevant to examination development for licensure examinations, as referenced in the *Standards*.

#### **Standard 4.7**

The procedures used to develop, review, and try out items and to select items from the item pool should be documented (p. 87).

#### **Standard 4.12**

Test developers should document the extent to which the content domain of a test represents the domain defined in the test specifications (p. 89).

The following regulations are relevant to the integrity of the examination development process:

California B&P Code § 139 requires the Department of Consumer Affairs to develop a policy on examination validation which includes minimum requirements for psychometrically sound examination development.

*OPES 18-01*, as mandated by B&P Code § 139, specifies that due to potential conflict of interest, undue influence, and security considerations, board members, committee members, and instructors should not serve as expert consultants in the licensure examination development process.

### FINDINGS

#### Examination Development – Subject Matter Experts

Examination development for the NAVLE is performed by ICVA's Assessment Development Committee (ADC) along with task forces comprising senior faculty members, educators, and clinicians with recognized prominence in their fields. ADC members are selected to provide broad representation from across the U.S. and Canada from the academic, clinical practice, and licensing communities. Members are appointed by ICVA to 3-year terms and may serve for a

maximum of three terms. Qualifications for appointment to the ADC include but are not limited to recognized achievement in two content areas:

1. Species (e.g., aquatics, bovine, camelid, etc.).
2. Competencies (e.g., clinical practice, communications, practice management, etc.).

Members of the ADC determine the main content areas of the NAVLE. Their duties include selecting and appointing NAVLE item writers each year and participating in item and examination form review meetings.

NAVLE item writers follow the item writing and review guidelines described in the National Board of Medical Examiners (NBME) publication, *Constructing Written Test Questions for the Basic and Clinical Sciences*. All item writers are trained in an item writing workshop before receiving a writing assignment. Writers are selected for their subject matter expertise based on the requirements of the item bank. A multifactor authentication system is used for all SMEs to access item information electronically.

Finding 6: The criteria used to select SMEs for item and test development are consistent with professional guidelines and technical standards, with the exception of using instructors, which is not in compliance with *OPES 18-01* as mandated by B&P Code § 139.

Finding 7: All SMEs are required to sign a pledge of confidentiality. SMEs participating in item and examination development are required to sign confidentiality agreements and are instructed about examination security, which is consistent with professional guidelines and technical standards.

#### Examination Development – Linkage to Examination Blueprint

The NAVLE is constructed according to the examination blueprint, which was derived from the *ICVA 2017 OA*. The two dimensions of the NAVLE blueprint are diagnoses and competencies.

Linkage of items to the examination blueprint is performed through a recoding process. SMEs drawn from the veterinary community and NBME SMEs recoded the NAVLE item bank based on the new diagnosis codes. The suggestion to develop a standardized approach for this process throughout all items came during initial discussions about using the new competency codes for the NAVLE items to replace previous competency codes. SMEs prepared a draft outline designed to ensure consistency, highlighting how and when to apply different competency codes to different items.

The draft document was further refined by SMEs from NBME and was subsequently sent to additional ADC members to continue its development. Finally, the NAVLE Competency Coding Guidelines were created to assist NAVLE item writers in correctly assigning the new codes to the existing and new NAVLE items. SMEs devoted several hours for multiple conference calls

until all the NAVLE items were correctly coded to ensure sufficient items exist in the bank pertaining to each competency.

Finding 8: Assignment of an item to a content area was performed by an SME committee through a standardized recoding process. The steps taken to link the examination items to the appropriate content areas are consistent with professional guidelines and technical standards.

#### Examination Development – Item Pilot Testing

All scored test items have first been pretested as part of regular examination administrations. The NAVLE examination forms consist of 360 four-option multiple choice items, with 300 scored and 60 pretest (unscored) items. Approximately 15%–20% of the items on the NAVLE include graphic or pictorial information relevant to the item (e.g., photograph, radiograph, drawing, chart, etc.).

The 60 pretest items are administered to obtain performance statistics. These new items and their statistics are reviewed by SMEs and the ADC before an item is approved for inclusion as a scored item on the NAVLE. Questions that seem problematic are revised or discarded. All accepted questions are then reviewed and validated by at least three experts in the field of veterinary medicine for accuracy, content relevance, importance, and difficulty.

Finding 9: The procedures used to develop, review, and pretest items, as well as to select and retire items from the item bank meet professional guidelines and technical standards.

#### Examination Development – Examination Forms

The ADC and SMEs select successfully pretested items for the scored portion of the NAVLE. Items are selected for an examination form based on the examination blueprint and statistical targets. SMEs are involved in an annual item bank review and in annual form reviews.

All examination forms are created using the same criteria to ensure that forms are comparable in terms of content and item difficulty.

Candidate responses are first converted into raw scores (i.e., the sum of the points earned from correct responses). Next, the raw scores are converted into three-digit scores using a non-linear algorithm that incorporates both the candidate's proficiency and the difficulty of the item to which they responded. This process, known as equating, statistically adjusts for differences in difficulty between forms of an examination to facilitate score comparisons across all NAVLE test takers. Equating also makes it possible to hold the passing standard at a constant proficiency level across forms and testing cycles.

Item statistics such as item difficulty are reviewed by the ADC before the item is approved for inclusion as a scored item on the NAVLE.

Finding 10: The procedure by which examination forms are equated is appropriate based on the examination item types, examination form length, and candidate sample sizes.

Finding 11: The criteria applied to create new examination forms meet professional guidelines and technical standards.

## CONCLUSIONS

Given the findings, the examination development procedures conducted by ICVA meet professional guidelines and technical standards.

## RECOMMENDATIONS

To reduce conflicts of interest, and as mandated by B&P Code § 139, OPES recommends that NAVLE consider phasing out the use of faculty members and educators in its examination development.

## CHAPTER 4 | PASSING SCORES AND PASSING RATES

### STANDARDS AND REGULATIONS

The passing score of an examination is the score that represents the level of performance that divides those candidates for licensure who are minimally competent from those who are not competent.

The following standards are most relevant to passing scores, cut points, or cut scores for licensure examinations, as referenced in the *Standards*.

#### **Standard 5.21**

When proposed score interpretations involve one or more cut scores, the rationale and procedures used for establishing cut scores should be documented clearly (p. 107).

#### **Standard 11.16**

The level of performance required for passing a credentialing test should depend on the knowledge and skills necessary for credential-worthy performance in the occupation or profession and should not be adjusted to control the number or proportion of persons passing the test (p. 182).

The supporting commentary on passing or cut scores in Chapter 5 of the *Standards*, “Scores, Scales, Norms, Score Linking, and Cut Scores” states that the standard-setting process used should be clearly documented and defensible. The qualifications and the process of selection of the judges involved should be part of the documentation. A sufficiently large and representative group of judges should be involved, and care must be taken to ensure that judges understand the process and procedures they are to follow (p.101).

In addition, the supporting commentary in Chapter 11 of the *Standards*, “Workplace Testing and Credentialing” states that the focus of tests used in credentialing is on “the standards of competence needed for effective performance (e.g., in licensure this refers to safe and effective performance in practice)” (p. 175). It further states, “Standards must be high enough to ensure that the public, employers, and government agencies are well served, but not so high as to be unreasonably limiting” (p. 176).

*OPES 18-01*, as mandated by B&P Code § 139, specifies that due to potential conflict of interest, undue influence, and security considerations, board members, committee members, and instructors should not serve as expert consultants in the licensure examination development process.

## FINDINGS

### Passing Scores – The NAVLE Process, Participation of SMEs, and Methodology

The process of establishing passing scores for licensure examinations relies upon the expertise and judgment of SMEs. For the NAVLE, standard setting is the process by which expert judgment (and content expertise) about the tested content is mapped to the test score scale to describe how much content mastery is required for candidates to pass.

Standard setting exercises are facilitated by psychometricians and use panels of SMEs to set the passing score.

The passing score is determined using a criterion-referenced modified Angoff standard-setting procedure. A group of SMEs with expertise in the various content areas covered by the NAVLE work individually and collectively to determine the minimum score that a candidate has to achieve to be judged minimally competent to enter private clinical practice. The SMEs are first trained on the standard-setting procedure and then complete an in-depth item review. The most recent group comprised 30 SMEs with diverse demographic characteristics, geographic location of practice, years of experience, and veterinary medicine area of focus. The SMEs were split into groups of three, and each group participated in a separate exercise. Multiple exercises allowed for more SMEs to participate.

NAVLE scores are expressed on a scale where the passing point is set at 425. If the licensing board requests the score to be reported on another scale (where 70 or 75 is passing), that will be done, with the scaled pass point of 425 equivalent to different local scores. The actual passing standard is the same in all jurisdictions. Once determined, the passing score is approved by ICVA, and is applied to each form of the NAVLE through equating.

Finding 12: The number of SMEs used in the setting of the passing score meets professional guidelines and technical standards.

Finding 13: The NAVLE incorporates the minimum competency standards by which candidate performance can be evaluated. This practice meets professional guidelines and technical standards.

Finding 14: The training of the SMEs and the modified Angoff passing score setting method are consistent with professional guidelines and technical standards.

## PASSING RATES

Finding 15: OPES reviewed the 2018-2019 NAVLE passing rates. The passing rate for the fall administration was 84%, and the passing rate for the spring administration was 58%, with the passing rate averaging 79% for the 2018-2019 administration year. Differences in passing rates between the two administrations are most likely related to

school graduation dates and first time takers vs. repeat takers. The California Veterinary State Board Examination (CSB) passing rates show a similar pattern.

## CONCLUSIONS

Given the findings, the passing score determination exercises conducted by ICVA and NBME demonstrate a sufficient degree of validity, thereby meeting professional guidelines and technical standards. However, NAVLE is not in compliance with *OPES 18-01*, as mandated by B&P Code § 139, which discourages the use of educators in the passing score process.

## RECOMMENDATIONS

To minimize conflicts of interest, and to ensure an entry level perspective is maintained, OPES recommends phasing out the use of faculty members as SMEs in the passing score process.





## CHAPTER 5 | TEST ADMINISTRATION

### STANDARDS

The following standards are most relevant to the test administration process for licensure examinations, as referenced in the *Standards*.

#### **Standard 6.1**

Test administrators should follow carefully the standardized procedures for administration and scoring specified by the test developer and any instructions from the test user (p. 114).

### FINDINGS

The NAVLE is administered during two testing windows (November–December and April) each year via computer at over 300 Prometric testing centers throughout the U.S., U.S. Territories, Canada, and in 13 testing regions overseas. A French translation is available. Examination administration is accompanied by instructions on the use of computer equipment and a brief tutorial before the examination begins to ensure standardized administration of the tests. ICVA provides a wide variety of information concerning the NAVLE to candidates and prospective candidates through its website at <https://www.icva.net/navle/>.

#### Test Administration – Test Centers

Prometric test center administrators and examination proctors receive training about how to administer and proctor secure examinations and receive standardized instructions based on policies and procedures specific to the NAVLE.

Finding 16: Prometric provides candidates access to test centers across the U.S., U.S. Territories, Canada, and in 13 testing regions overseas with trained proctors and controlled testing conditions.

#### Test Administration – Candidate Registration

ICVA has a detailed examination registration process that candidates can easily navigate on the ICVA website at <https://www.icva.net/navle/>. Candidates can verify eligibility to take the test, apply online, check the status of their application, and schedule their test date. The *NAVLE Bulletin of Information for Candidates (NAVLE Candidate Bulletin)*, which can also be found on the ICVA website, provides detailed information about registration and test administration.

Finding 17: The ICVA registration process is straightforward. The candidate registration process meets professional guidelines and technical standards.

## CONCLUSIONS

Given the findings, the test administration protocols put in place by ICVA and Prometric meet professional guidelines and technical standards.

## CHAPTER 6 | EXAMINATION SCORING AND PERFORMANCE

### STANDARDS

The following standards are most relevant to scoring and performance for licensure examinations, as listed in the *Standards*.

#### **Standard 2.3**

For each total score, subscore, or combination of scores that is to be interpreted, estimates of relevant indices of reliability/precision should be reported (p. 43).

#### **Standard 4.10**

When a test developer evaluates the psychometric properties of items, the model used for that purpose (e.g., classical test theory, item response theory, or another model) should be documented. The sample used for estimating item properties should be described and should be of adequate size and diversity for the procedure. The process by which items are screened and the data used for screening, such as item difficulty, item discrimination, or differential item functioning (DIF) for major examinee groups, should also be documented. When model-based methods (e.g., IRT) are used to estimate item parameters in test development, the item response model, estimation procedures, and evidence of model fit should be documented (pp. 88-89).

### FINDINGS

#### Examination Performance – Scoring of the NAVLE

The NAVLE consists of multiple-choice items that are scored as either correct or incorrect. After an individual finishes the NAVLE, the examination data file is delivered electronically to NBME for scoring. The data is encrypted before electronic transmission. Raw scores (the number of items that candidates answer correctly) are converted to scaled scores in order for them to be expressed on a scale where the passing point is set at 425. After all responses are recorded, classical item analysis statistics (i.e., item difficulty and discrimination) are calculated for each examination item. Descriptive statistics are also obtained.

A final quality control check is performed to verify the scores on score reports before posting the reports to the candidates. A NAVLE score report shows the candidate their score, a pass/fail designation, and a breakdown of their performance on the major content areas of the NAVLE. Candidate score reports are sent to the licensing board through which they were approved. Score reports for all NAVLE candidates are accessible via a secure online portal, which licensing boards can also access. Candidates receive an email notifying them that their score report is available to access.

Uniform and precise procedures ensure that the score reported for each candidate to the licensing board is an accurate reflection of the responses recorded by the computer, and that the validity of scores has been historically verified. There is no rescoring or appeal of NAVLE scores once the reports are released. NAVLE candidates are not permitted to review their examinations.

The NAVLE is scored after the close of each testing window. Scores are reported to licensing boards and to candidates about 4 weeks after the close of each testing window.

Finding 18: The scoring criteria is applied equitably to ensure the validity and reliability of the examination results. The examination scoring process meets professional guidelines and technical standards.

Finding 19: The use of scaled scores and classical item analysis statistics is consistent with professional guidelines and technical standards.

## CONCLUSIONS

The steps taken by NBME to score the NAVLE appear to provide a fair and objective evaluation of candidate performance. The steps taken by NBME to evaluate examination performance are valid and legally defensible, and meet professional guidelines and technical standards.

## CHAPTER 7 | INFORMATION AVAILABLE TO CANDIDATES

### STANDARDS

The following standards are most relevant to the information communicated to licensure examination candidates by a test developer, as listed in the *Standards*.

#### **Standard 6.2**

When formal procedures have been established for requesting and receiving accommodations, test takers should be informed of these procedures in advance of testing (p. 115).

#### **Standard 6.5**

Test takers should be provided appropriate instructions, practice, and other support necessary to reduce construct-irrelevant variance (p. 116).

#### **Standard 8.1**

Information about test content and purposes that is available to any test taker prior to testing should be available to all test takers. Shared information should be available free of charge and in accessible formats (p. 133).

#### **Standard 8.2**

Test takers should be provided in advance with as much information about the test, the testing process, the intended test use, test scoring criteria, testing policy, availability of accommodations, and confidentiality protection as is consistent with obtaining valid responses and making appropriate interpretations of test scores (p. 134).

### FINDINGS

The ICVA website at <https://www.icva.net/> is a source of information about NAVLE policies and procedures. Candidates can find material on all necessary steps related to the examination process.

Through the “Preparation Tools” link, ICVA offers practice tests for purchase that are designed to help candidates identify their strengths and weaknesses as they prepare for the NAVLE, and to help them learn about the content and format of the NAVLE. Each assessment consists of 200 items, English and French versions are offered, and a score report is immediately available after completion of an assessment. The self-assessments do not include the on-screen calculator function available on the NAVLE.

Candidates requiring accommodations must contact ICVA to request information about test accommodations, including procedures and documentation requirements, before applying to

take the NAVLE. Candidates requesting accommodations must submit required documentation to ICVA. ICVA reviews and approves any accommodations necessary under the Americans with Disabilities Act.

In addition, ICVA provides a customer service phone number and an email form that candidates can use to submit questions.

Finding 20: The ICVA website provides extensive information to candidates regarding all aspects of the examination and testing process.

Finding 21: The examination accommodations procedure meets professional guidelines and technical standards.

## CONCLUSIONS

Given the findings, the information provided to candidates about the NAVLE program is comprehensive and meets professional guidelines and technical standards.

## CHAPTER 8 | TEST SECURITY

### STANDARDS

The following standards are most relevant to test security for licensure examinations, as referenced in the *Standards*.

#### **Standard 6.6**

Reasonable efforts should be made to ensure the integrity of test scores by eliminating opportunities for test takers to attain scores by fraudulent or deceptive means (p. 116).

#### **Standard 6.7**

Test users have the responsibility of protecting the security of test materials at all times (p. 117).

### FINDINGS

Prometric, through its internal examination administration and security protocols, provides a robust framework of test site and test security policies and procedures. Security of examination material is controlled through computerized electronic transmission of encrypted data. Every proctor at every Prometric testing center is trained to recognize potential test security breaches, and every location is monitored with advanced security equipment and subjected to multiple random security audits. In addition, the *NAVLE Candidate Bulletin* describes what constitutes improper acts and unethical conduct on the part of candidates and the consequences of such actions.

Finding 22: Prometric requires candidates to provide current and valid government-issued identification to sit for the examination. The identification must include a photograph and signature and must match the scheduling permit the candidates receive after registering for the examination. Candidates are prohibited from bringing any personal belongings into the testing rooms, and test center administrators verify that candidate pockets are empty.

Finding 23: Observation of the testing sessions at Prometric is aided by use of audio and video monitors and recording and other equipment available at the test centers. All testing sessions for the NAVLE are monitored by staff at the test center.

### CONCLUSIONS

Given the findings, the test center security procedures at Prometric meet professional guidelines and technical standards.





## CHAPTER 9 | COMPARISON OF THE NAVLE EXAMINATION BLUEPRINT TO THE CALIFORNIA EXAMINATION OUTLINE

### PARTICIPATION OF SUBJECT MATTER EXPERTS

OPES convened two workshops, one on May 28, 2020 and one on June 11, 2020, to critically evaluate the competency statements from the *ICVA 2017 OA* and to compare them with the tasks and associated knowledge statements from the *2019 California OA*. The Board, with direction from OPES, recruited 10 SMEs to participate in the workshops. The SMEs completed security agreements and personal data forms documenting demographic information. The forms are on file with OPES.

The SMEs represented both northern and southern California. Three of the SMEs had been licensed for 6–10 years, two for 11–20 years, and five for more than 20 years. All SMEs worked as veterinarians in various settings.

An orientation provided by OPES stated the purpose of the workshop, the role of the SMEs, and the project background leading to the workshop. Once the SMEs understood the purpose of the workshop, they independently reviewed the competency statements from the *ICVA 2017 OA* and compared this content with the tasks and associated knowledge statements contained in the *2019 California OA*. This review was conducted to identify whether there were areas of California veterinary practice not measured by the NAVLE and to identify the extent to which California law, rules, and regulations are covered on the NAVLE.

After the SMEs completed this review, OPES asked the SMEs to review California-prevalent diseases and diagnoses described in CCR Title 16 § 2021.3, California Curriculum – Content. SMEs then evaluated the extent to which these diseases and diagnoses are measured by the NAVLE. To accomplish this, SMEs reviewed the NAVLE Species and Diagnoses section of the curriculum document, which provides an outline of the species and diagnoses assessed on the NAVLE, and compared it with California-prevalent diseases and diagnoses.

Finally, OPES engaged the SMEs in discussions about the current CSB to determine if the SMEs believed the practice-based content included in the examination was already covered on the NAVLE.

## FINDINGS

Finding 24: The SMEs evaluated the NAVLE competencies against the *2019 California OA* tasks and associated knowledge statements. The SMEs concluded that the NAVLE adequately assesses entry level veterinary practice in California.

Finding 25: The SMEs evaluated the NAVLE competencies against the *2019 California OA* tasks and associated knowledge statements. The SMEs concluded that the NAVLE does not assess all California law, rules, and regulations related to veterinary practice.

Finding 26: The SMEs evaluated California-prevalent diseases and diagnoses against the NAVLE Species and Diagnoses content. The SMEs concluded that the NAVLE assesses all California-prevalent diseases and diagnoses related to veterinary practice.

## CONCLUSIONS

Given the findings, the content of the NAVLE, which is based on the *ICVA 2017 OA*, is consistent with the tasks and associated knowledge in the California examination outline for determining competence for entry level California veterinary practice. The NAVLE does not measure California veterinary law, rules, and regulations. The SMEs recommended that the current practice-based CSB be changed to a CSB supplemental examination that measures California law, rules, and regulations only. Passing this supplemental examination, in addition to the NAVLE, would be required for licensure in California.

The content categories for the NAVLE and the content areas for the *2019 California OA* examination outline are provided in Tables 1 and 2.

TABLE 1 – CONTENT CATEGORIES OF THE NAVLE BLUEPRINT

<b>Competency Domains</b>	<b>Weight</b>
Domain 1. Clinical Practice	<b>70%</b>
Data Gathering and Interpretation	35%
Health Maintenance and Prevention	35%
Domain 2. Communication	<b>8%</b>
Communication with Clients	5%
Communication with Veterinary and Other Professionals	3%
Domain 3. Professionalism, Practice Management, and Wellness	<b>7%</b>
Professional Development and Lifelong Learning	3%
Veterinary Practice Management	4%
Domain 4. Preventive Medicine and Animal Welfare	<b>15%</b>
Environmental Health and Safety	5%
Veterinary Public Health	4%
Animal Welfare Issues and Concerns	6%
<b>Total</b>	<b>100%</b>

TABLE 2 – CONTENT AREAS OF THE 2019 CALIFORNIA EXAMINATION OUTLINE

<b>Content Area</b>	<b>Content Area Description</b>	<b>Weight</b>
1. Patient Signalment and History	This area assesses the candidate's knowledge of determining signalment, chief complaint, prior health status, and historical factors pertinent to current condition.	12%
2. Patient Physical Examination	This area assesses the candidate's knowledge of gathering data by inspection and physical examination to evaluate current health and environmental status.	20%
3. Patient Data Assessment	This area assesses the candidate's knowledge of determining clinical status, forming differential diagnoses, identifying health risks to animal and human populations, and determining presence of abuse or neglect.	8%
4. Diagnostic Planning and Procedures	This area assesses the candidate's knowledge of determining diagnostic plans, and performing or ordering tests and procedures to establish diagnoses.	13%
5. Diagnostic Interpretation	This area assesses the candidate's knowledge of evaluating the results of tests and procedures to establish patient diagnoses and prognoses.	6%
6. Treatment Planning	This area assesses the candidate's knowledge of formulating treatment plans based on diagnostics and communicating treatment options to client.	11%
7. Treatment	This area assesses the candidate's knowledge of administering medical, surgical, and therapeutic procedures indicated by the treatment plan.	12%
8. Disease Prevention and Health Management	This area assesses the candidate's knowledge of developing preventative plans and programs to promote animal health and public safety.	5%
9. Professional and Legal Responsibilities	This area assesses the candidate's knowledge of compliance with state and federal law and regulations, including veterinary practice standards, reportable diseases, animal movement, and disaster response.	13%
<b>Total</b>		<b>100%</b>

## CHAPTER 10 | CONCLUSIONS

### COMPREHENSIVE REVIEW OF THE ICVA NAVLE PROGRAM

OPES completed a comprehensive analysis and evaluation of the documents provided by ICVA. The procedures used to establish and support the validity and defensibility of the NAVLE (i.e., occupational analysis, examination development, passing scores, test administration, examination scoring and performance, information available to candidates, and test security procedures) were found to meet professional guidelines and technical standards as outlined in the *Standards* and in B&P Code § 139. However, to be fully compliant with *OPES 18-01*, OPES recommends that NAVLE discontinue the use of faculty members and educators. This will reduce conflicts of interest, allow the participation of additional practitioners, and help ensure that an entry level perspective is maintained.

Given the findings regarding the NAVLE, OPES supports the Veterinary Medical Board's continued use of the NAVLE for licensure in California. In addition, OPES recommends revising the practice-based CSB to a CSB supplemental examination that measures California law, rules, and regulations only.

During the linkage study workshop, the SMEs could not identify any California-specific veterinary practices or diagnoses that were not covered on the NAVLE. Therefore, OPES believes that continuing to assess candidates on the full breadth of veterinary practice on the CSB is redundant and could be perceived as an unnecessary barrier to licensure. OPES also recommends that the revised CSB supplemental examination be used in place of the mail-out Veterinary Law Examination (VLE), which would be discontinued.



## CHAPTER 11 | REFERENCES

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OCCUPATIONAL ANALYSIS OF THE  
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VETERINARY MEDICAL BOARD

OCCUPATIONAL ANALYSIS OF THE  
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This occupational analysis report is mandated by California Business and Professions (B&P) Code § 139 and by DCA Licensure Examination Validation Policy OPES 18-02.

## EXECUTIVE SUMMARY

The Veterinary Medical Board (Board) requested that the Department of Consumer Affairs' Office of Professional Examination Services (OPES) conduct an occupational analysis (OA) of veterinary medical practice in California. The purpose of the OA is to define practice for veterinarians in terms of the actual tasks that new licensees must be able to perform safely and competently at the time of licensure. The results of this OA provide a description of practice for the veterinarian profession that can then be used to review the North American Veterinary Licensing Examination (NAVLE) for continued use in California; to develop the California Veterinary State Board Examination (CSB); and to develop the California Veterinary Law Examination (VLE).

OPES test specialists began by researching the profession and conducting telephone interviews with licensed veterinarians working in locations throughout California. The purpose of these interviews was to identify the tasks performed by veterinarians and to specify the knowledge required to perform those tasks in a safe and competent manner. Using the information gathered from the research and the interviews, OPES test specialists developed a preliminary list of tasks performed in veterinary medical practice along with statements representing the knowledge needed to perform those tasks.

In November 2018, OPES convened a workshop to review and refine the preliminary lists of task and knowledge statements derived from the telephone interviews. The workshop comprised licensed veterinarians, or subject matter experts (SMEs), with diverse backgrounds in the profession (i.e., location of practice, years licensed, specialty). These SMEs also identified changes and trends in veterinary medical practice, determined demographic questions for the OA questionnaire, and performed a preliminary linkage of the task and knowledge statements to ensure that all tasks had a related knowledge and all knowledge statements had a related task. Additional task and knowledge statements were created as needed to complete the scope of the content areas of the description of practice. A second workshop was held in March 2019 with a different group of veterinarians to review and refine the results from the initial workshop.

Upon completion of the second workshop, OPES test specialists developed a three-part OA questionnaire to be completed by licensed veterinarians statewide. Development of the OA questionnaire included a pilot study that was conducted using a group of licensed veterinarians. The pilot study participants' feedback was incorporated into the final questionnaire, which was administered in May 2019.

In the first part of the OA questionnaire, veterinarians were asked to provide demographic information relating to their work settings and practice. In the second part, veterinarians were asked to rate how often they perform specific tasks in their current practice (Frequency) and how important the tasks are to effective performance of their current practice (Importance). In the third part, veterinarians were asked to rate how important specific knowledge statements are to effective performance of their current practice.

In May 2019, on behalf of the Board, OPES sent an email to a sample of 5,645 actively licensed veterinarians with a California address (55% of the total population of 10,227 actively licensed veterinarians with a California address), asking them to complete the online OA questionnaire. The email invitation was sent to veterinarians with a California address for whom the Board had an email address on file.

A total of 564 veterinarians responded by accessing the online OA questionnaire. The final sample size included in the data analysis was 236, or approximately 4% of the sample. This response rate reflects two adjustments. First, OPES excluded data from respondents who indicated they were not currently licensed and practicing as veterinarians in California. Second, questionnaires containing a large volume of incomplete or unresponsive data were removed. Despite the low response rate, the demographic composition of the respondent sample appears representative of the licensed veterinarian population in California.

OPES test specialists then performed data analyses of the task and knowledge ratings obtained from the OA questionnaire respondents. The task frequency and importance ratings were combined to derive an overall criticality index for each task statement. The mean importance rating was used as the criticality index for each knowledge statement.

Once the data was analyzed, OPES conducted an additional workshop with veterinarians in July 2019. The SMEs evaluated the criticality indices and determined whether any task or knowledge statements should be eliminated. The SMEs in this group also established the final linkage between tasks and knowledge statements, organized the task and knowledge statements into content areas, and wrote descriptions of those areas. The SMEs then evaluated and confirmed the content area weights of the examination outline.

The examination outline is structured into nine content areas weighted by criticality relative to the other content areas. This outline provides a description of practice for veterinarians, and it also identifies the tasks and knowledge critical to safe and effective practice of veterinary medicine in California at the time of licensure. Additionally, this examination outline provides a basis for evaluating the degree to which the content of any examination under consideration measures content critical to veterinary practice in California.

At this time, California licensure as a veterinarian is granted by meeting the requisite educational and experience requirements; passing the NAVLE; passing the CSB; and passing the VLE, if the applicant is a reciprocity license applicant or a graduate of a non-California veterinary school.

## OVERVIEW OF THE VETERINARIAN EXAMINATION OUTLINE

<b>Content Area</b>	<b>Content Area Description</b>	<b>Percent Weight</b>
1. Patient Signalment and History	This area assesses the candidate's knowledge of determining signalment, chief complaint, prior health status, and historical factors pertinent to current condition.	12
2. Patient Physical Examination	This area assesses the candidate's knowledge of gathering data by inspection and physical examination to evaluate current health and environmental status.	20
3. Patient Data Assessment	This area assesses the candidate's knowledge of determining clinical status, forming differential diagnoses, identifying health risks to animal and human populations, and determining presence of abuse or neglect.	8
4. Diagnostic Planning and Procedures	This area assesses the candidate's knowledge of determining diagnostic plans, and performing or ordering tests and procedures to establish diagnoses.	13
5. Diagnostic Interpretation	This area assesses the candidate's knowledge of evaluating the results of tests and procedures to establish patient diagnoses and prognoses.	6
6. Treatment Planning	This area assesses the candidate's knowledge of formulating treatment plans based on diagnostics and communicating treatment options to client.	11
7. Treatment	This area assesses the candidate's knowledge of administering medical, surgical, and therapeutic procedures indicated by the treatment plan.	12
8. Disease Prevention and Health Management	This area assesses the candidate's knowledge of developing preventative plans and programs to promote animal health and public safety.	5
9. Professional and Legal Responsibilities	This area assesses the candidate's knowledge of compliance with state and federal laws and regulations, including veterinary practice standards, reportable diseases, animal movement, and disaster response.	13
<b>Total</b>		<b>100</b>

## TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	iii
<b>CHAPTER 1   INTRODUCTION.....</b>	<b>1</b>
PURPOSE OF THE OCCUPATIONAL ANALYSIS.....	1
CONTENT VALIDATION STRATEGY .....	1
PARTICIPATION OF SUBJECT MATTER EXPERTS.....	1
ADHERENCE TO LEGAL STANDARDS AND GUIDELINES.....	2
DESCRIPTION OF OCCUPATION.....	2
<b>CHAPTER 2   OCCUPATIONAL ANALYSIS QUESTIONNAIRE.....</b>	<b>5</b>
SUBJECT MATTER EXPERT INTERVIEWS .....	5
TASK AND KNOWLEDGE STATEMENTS.....	5
QUESTIONNAIRE DEVELOPMENT .....	6
PILOT STUDY .....	6
<b>CHAPTER 3   RESPONSE RATE AND DEMOGRAPHICS.....</b>	<b>7</b>
SAMPLING STRATEGY AND RESPONSE RATE .....	7
DEMOGRAPHIC SUMMARY.....	7
<b>CHAPTER 4   DATA ANALYSIS AND RESULTS.....</b>	<b>19</b>
RELIABILITY OF RATINGS.....	19
TASK CRITICALITY INDICES .....	20
KNOWLEDGE IMPORTANCE RATINGS .....	21
<b>CHAPTER 5   EXAMINATION OUTLINE.....</b>	<b>23</b>
TASK-KNOWLEDGE LINKAGE.....	23
CONTENT AREAS AND WEIGHTS .....	23
<b>CHAPTER 6   CONCLUSION .....</b>	<b>45</b>

## LIST OF TABLES

TABLE 1 – NUMBER OF YEARS LICENSED AS A VETERINARIAN .....	9
TABLE 2 – NUMBER OF YEARS PRACTICING AS A VETERINARIAN.....	10
TABLE 3 – HOURS WORKED PER WEEK AS A LICENSED VETERINARIAN.....	11
TABLE 4 – OTHER LICENSED VETERINARIANS WORKING IN PRACTICE.....	12
TABLE 5 – MAJORITY OF WORK RESPONSIBILITIES .....	13
TABLE 6 – PRIMARY EMPLOYER.....	14
TABLE 7 – PRACTICE SPECIALTY .....	15
TABLE 8 – PATIENTS TREATED.....	16
TABLE 9 – PRIMARY WORK SETTING .....	17
TABLE 10 – RESPONDENTS BY REGION.....	17
TABLE 11 – TASK SCALE RELIABILITY.....	19
TABLE 12 – KNOWLEDGE SCALE RELIABILITY.....	20
TABLE 13 – CONTENT AREA WEIGHTS .....	24
TABLE 14 – EXAMINATION OUTLINE FOR THE VETERINARIAN PROFESSION ....	25



## LIST OF FIGURES

FIGURE 1 – NUMBER OF YEARS LICENSED AS A VETERINARIAN.....	9
FIGURE 2 – NUMBER OF YEARS PRACTICING AS A VETERINARIAN.....	10
FIGURE 3 – HOURS WORKED PER WEEK AS A LICENSED VETERINARIAN .....	11
FIGURE 4 – OTHER LICENSED VETERINARIANS WORKING IN PRACTICE .....	12
FIGURE 5 – MAJORITY OF WORK RESPONSIBILITIES.....	13
FIGURE 6 – PRIMARY EMPLOYER.....	14
FIGURE 7 – PRACTICE SPECIALTY .....	15
FIGURE 8 – PATIENTS TREATED.....	16

## LIST OF APPENDICES

<b>APPENDIX A   RESPONDENTS BY REGION .....</b>	<b>47</b>
<b>APPENDIX B   CRITICALITY INDICES FOR ALL TASKS BY CONTENT AREA.....</b>	<b>51</b>
<b>APPENDIX C   KNOWLEDGE IMPORTANCE RATINGS .....</b>	<b>61</b>
<b>APPENDIX D   INVITATION TO PRACTITIONERS .....</b>	<b>71</b>
<b>APPENDIX E   QUESTIONNAIRE .....</b>	<b>73</b>



## CHAPTER 1 | INTRODUCTION

### PURPOSE OF THE OCCUPATIONAL ANALYSIS

The Veterinary Medical Board (Board) requested that the Department of Consumer Affairs' Office of Professional Examination Services (OPES) conduct an occupational analysis (OA) as part of the Board's comprehensive review of veterinary practice in California. The purpose of the OA is to identify critical activities performed by veterinarians in California.

The results of this OA provide a description of practice for the veterinarian profession that can then be used to review or develop the examinations currently required for licensure as a veterinarian in California. At this time, licensure is granted by fulfilling requirements that include:

- Passing the North American Veterinary Licensing Examination (NAVLE).
- Passing the California Veterinary State Board Examination (CSB).
- Passing the California Veterinary Law Examination (VLE), a mail-out examination that tests knowledge of information in the California Veterinary Medicine Practice Act, if the applicant is a graduate of a non-California veterinary school or a reciprocity license applicant. University of California, Davis and Western University of Health Sciences senior students are exempt from the VLE requirement.
- Meeting educational and experience requirements.

The description of practice resulting from this OA can be used to review the NAVLE, develop the CSB, and develop the VLE. Candidates must pass all three examinations within 60 months of passing the first of the three.

### CONTENT VALIDATION STRATEGY

OPES used a content validation strategy to ensure that the OA reflected the actual tasks performed by practicing veterinarians. OPES incorporated the technical expertise of California veterinarians throughout the OA process to ensure that the identified task and knowledge statements directly reflect requirements for performance in current practice.

### PARTICIPATION OF SUBJECT MATTER EXPERTS

The Board selected California veterinarians to participate as subject matter experts (SMEs) during the phases of the OA. These SMEs were selected from a broad range of practice settings, geographic locations, and experience backgrounds. During the development phase of the OA, the SMEs provided information regarding the different aspects of current practice of veterinary medicine. The SMEs also provided technical expertise during the three workshops that were convened to evaluate and refine the content of task and knowledge statements before administration of the OA questionnaire. After the administration of the OA questionnaire, OPES convened an additional group of SMEs to review the results and finalize the examination outline, which ultimately provides the basis of the description of practice.

## ADHERENCE TO LEGAL STANDARDS AND GUIDELINES

Licensing, certification, and registration programs in the State of California adhere strictly to federal and state laws and regulations, as well as professional guidelines and technical standards. For the purposes of occupational analyses, the following laws and guidelines are authoritative:

- California Business and Professions Code section 139.
- Uniform Guidelines on Employee Selection Procedures (1978), Code of Federal Regulations, title 29, section 1607.
- California Fair Employment and Housing Act, Government Code section 12944.
- *Principles for the Validation and Use of Personnel Selection Procedures* (2018), Society for Industrial and Organizational Psychology (SIOP).
- *Standards for Educational and Psychological Testing* (2014), American Educational Research Association, American Psychological Association, and National Council on Measurement in Education.

For a licensure examination to meet these standards, it must be solidly based upon the activities required for practice.

## DESCRIPTION OF OCCUPATION

The veterinarian occupation is described as follows in section 4826 of the California Business and Professions Code:

A person practices veterinary medicine, surgery, and dentistry, and the various branches thereof, when he or she does any one of the following:

(a) Represents himself or herself as engaged in the practice of veterinary medicine, veterinary surgery, or veterinary dentistry in any of its branches.

(b) Diagnoses or prescribes a drug, medicine, appliance, application, or treatment of whatever nature for the prevention, cure, or relief of a wound, fracture, bodily injury, or disease of animals.

(c) Administers a drug, medicine, appliance, application, or treatment of whatever nature for the prevention, cure, or relief of a wound, fracture, bodily injury, or disease of animals, except where the medicine, appliance, application, or treatment is administered by a registered veterinary technician or a veterinary assistant at the direction of and under the direct supervision of a licensed veterinarian subject to Article 2.5 (commencing with Section 4832) or where the drug, including, but not limited to, a drug that is a controlled substance, is administered by a registered veterinary technician or a veterinary assistant pursuant to Section 4836.1. However, no person, other than a

licensed veterinarian, may induce anesthesia unless authorized by regulation of the board.

(d) Performs a surgical or dental operation upon an animal.

(e) Performs any manual procedure for the diagnosis of pregnancy, sterility, or infertility upon livestock or Equidae.

(f) Uses any words, letters, or titles in such connection or under such circumstances as to induce the belief that the person using them is engaged in the practice of veterinary medicine, veterinary surgery, or veterinary dentistry. This use shall be prima facie evidence of the intention to represent himself or herself as engaged in the practice of veterinary medicine, veterinary surgery, or veterinary dentistry.



## CHAPTER 2 | OCCUPATIONAL ANALYSIS QUESTIONNAIRE

### SUBJECT MATTER EXPERT INTERVIEWS

The Board provided OPES with a list of licensed veterinarians to contact for telephone interviews. During the semi-structured interviews, seven veterinarians were asked to identify activities they perform on the job that are specific to the veterinarian profession and to identify current developments, trends, and needs related to the profession.

### TASK AND KNOWLEDGE STATEMENTS

To develop task and knowledge statements, OPES test specialists integrated the information gathered from literature reviews of profession-related sources (e.g., laws and regulations, previous OA reports, articles, industry publications) and from interviews with veterinarian SMEs.

In November 2018, OPES test specialists facilitated a workshop with seven veterinarians from diverse backgrounds (i.e., years licensed, specialty, and practice location) to evaluate the task and knowledge statements for technical accuracy and comprehensiveness.

In March 2019, OPES test specialists facilitated a second workshop with a group of four additional SMEs. OPES presented the task and knowledge statements to the SMEs, and they assigned each statement to a content area and verified that the content areas were independent and nonoverlapping. In addition, the SMEs performed a preliminary linkage of the task and knowledge statements to ensure that every task had a related knowledge and every knowledge statement had a related task. The SMEs also verified proposed demographic questions for the OA questionnaire, including questions regarding scope of practice and practice setting.

After SME verification of the lists of task and knowledge statements and of the demographic questions, OPES used this information to develop an online questionnaire that was sent to California veterinarians for completion and evaluation.



## QUESTIONNAIRE DEVELOPMENT

OPES test specialists developed an online OA questionnaire designed to solicit veterinarians' ratings of the task and knowledge statements. The surveyed veterinarians were instructed to rate how often they perform each task (Frequency) and how important the task is to the effective performance of their current practice (Importance). In addition, they were instructed to rate how important each knowledge statement is to the effective performance of their current practice (Importance). The OA questionnaire also included a demographic section for purposes of developing an accurate profile of the respondents. The OA questionnaire can be found in Appendix E.

## PILOT STUDY

Before administering the final questionnaire, OPES conducted a pilot study of the online questionnaire. The draft questionnaire was reviewed by the Board and then sent to 12 SMEs who had participated in the task and knowledge statement development workshops. OPES received feedback to the pilot study from 7 respondents. The respondents reviewed the online questionnaire, provided the estimated time for completion, and reviewed the online navigation and ease of use of the questionnaire. OPES used this feedback to administer the final questionnaire.

## CHAPTER 3 | RESPONSE RATE AND DEMOGRAPHICS

### SAMPLING STRATEGY AND RESPONSE RATE

In May 2019, on behalf of the Board, OPES sent an email to a sample of 5,645 actively licensed veterinarians with a California address (55% of the total population of 10,227 actively licensed veterinarians with a California address), asking them to complete the online OA questionnaire. The email invitation was sent to veterinarians with a California address for whom the Board had an email address on file.

A total of 564 veterinarians responded by accessing the online OA questionnaire. The final sample size included in the data analysis was 236, or approximately 4% of the sample. This response rate reflects two adjustments. First, OPES excluded data from respondents who indicated they were not currently licensed and practicing as veterinarians in California. Second, questionnaires containing a large volume of missing or unresponsive data were also excluded. Despite the low response rate, the respondent sample appears representative of the population of California veterinarians based on the sample's demographic composition.

### DEMOGRAPHIC SUMMARY

As shown in Table 1 and Figure 1, 37.3% of the respondents included in the analysis reported that they have been practicing as a veterinarian for 16 or more years, 27.1% reported that they have been practicing between 6 and 10 years, 26.3% reported that they have been practicing for 5 years or less, and 8.9% reported that they have been practicing between 11 and 15 years.

As shown in Table 2 and Figure 2, when asked to indicate the number of years they have been practicing veterinary medicine in California, 39% of respondents reported that they have been practicing for 5 years or less, 30.9% of respondents reported that they have been practicing 16 years or more, 22.5% of respondents reported that they have been practicing between 6 and 10 years, and 7.6% of respondents reported that they have been practicing between 11 and 15 years.

As shown in Table 3 and Figure 3, most respondents (55.1%) reported working 41 hours or more per week as a licensed veterinarian, 26.7% reported working 31 to 40 hours per week, 10.2% reported working 21 to 30 hours per week, 3.8% reported working 0 to 10 hours per week, and 4.2% reported working 11 to 20 hours per week.

As shown in Table 4 and Figure 4, most practitioners (47%) reported that they worked with a group of 1 to 3 other veterinarians, 16.5% reported that they worked in a larger group of 11 or more other veterinarians, 16.1% reported working as the sole veterinarian, 11% reported that they worked with a group of 4 to 5 other veterinarians, and 9.3% reported that they worked with a group of 6 to 10 other veterinarians.

The majority of respondents (88.5%) reported working primarily as a practitioner, 4.7% reported having other work responsibilities, 2.5% reported working primarily in education/research, 2.1%

reported working as a consultant, and 2.1% reported having management responsibilities (see Table 5 and Figure 5).

When asked to describe their primary employer, 59.3% of the respondents reported private practice, 26.7% reported corporation, 3.8% reported government, 3.8% reported other, 3.4% reported academia, and 3% reported nonprofit (see Table 6 and Figure 6).

Table 7 and Figure 7 show the practice specialties reported by the respondents. The majority (84.3%) reported small animal practice, 14% reported exotic/zoo/wildlife practice, 8.5% reported shelter medicine, 8.1% reported equine practice, and 6.4% reported food animal practice.

Table 8 shows the types of patients treated by veterinarians: 88.6% reported treating cats; 87.7% reported treating dogs; 30.9% reported treating exotic animals such as amphibians, reptiles, chinchillas, fish, guinea pigs, hamsters, and rabbits; 16.1% reported treating avian patients (pet birds); and 12.3% reported treating equine patients.

Table 9 shows primary work setting (urban or rural), and Table 10 shows respondents by region.

More detailed demographic information from respondents can be found in Tables 1 through 10 and Figures 1 through 8.

TABLE 1 – NUMBER OF YEARS LICENSED AS A VETERINARIAN

YEARS	NUMBER (N)	PERCENT
0 to 5 years	62	26.3
6 to 10 years	64	27.1
11 to 15 years	21	8.9
16 or more years	88	37.3
Total	235	100*

\*NOTE: Percentages do not add to 100 due to rounding.

FIGURE 1 – NUMBER OF YEARS LICENSED AS A VETERINARIAN

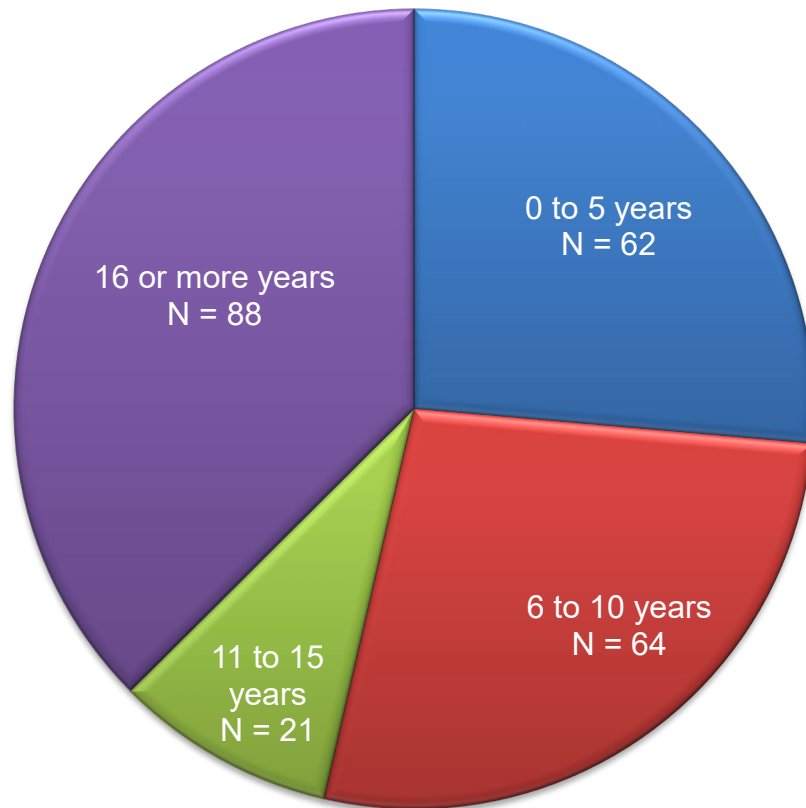


TABLE 2 – NUMBER OF YEARS PRACTICING AS A VETERINARIAN

DEGREE	NUMBER (N)	PERCENT
0 to 5 years	92	39.0
6 to 10 years	53	22.5
11 to 15 years	18	7.6
16 or more years	73	30.9
Total	236	100

FIGURE 2 – NUMBER OF YEARS PRACTICING AS A VETERINARIAN

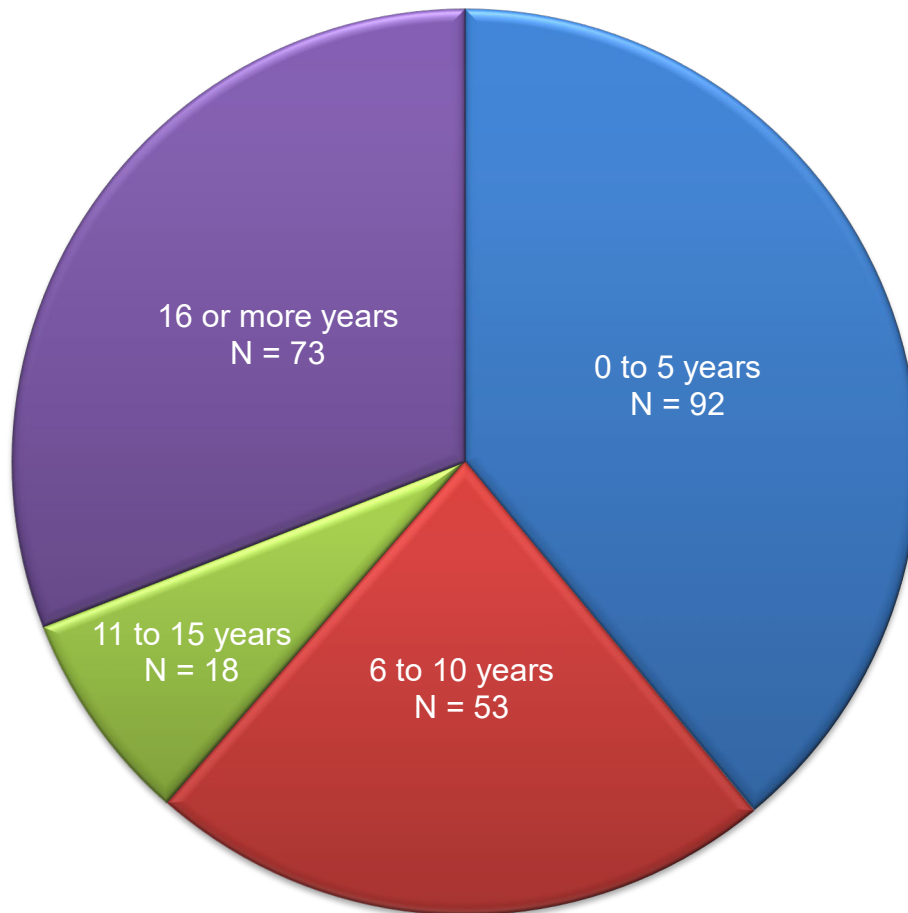


TABLE 3 – HOURS WORKED PER WEEK AS A LICENSED VETERINARIAN

SUBJECT	NUMBER (N)	PERCENT
0 to 10 hours	9	3.8
11 to 20 hours	10	4.2
21 to 30 hours	24	10.2
31 to 40 hours	63	26.7
41 or more hours	130	55.1
Total	236	100

FIGURE 3 – HOURS WORKED PER WEEK AS A LICENSED VETERINARIAN

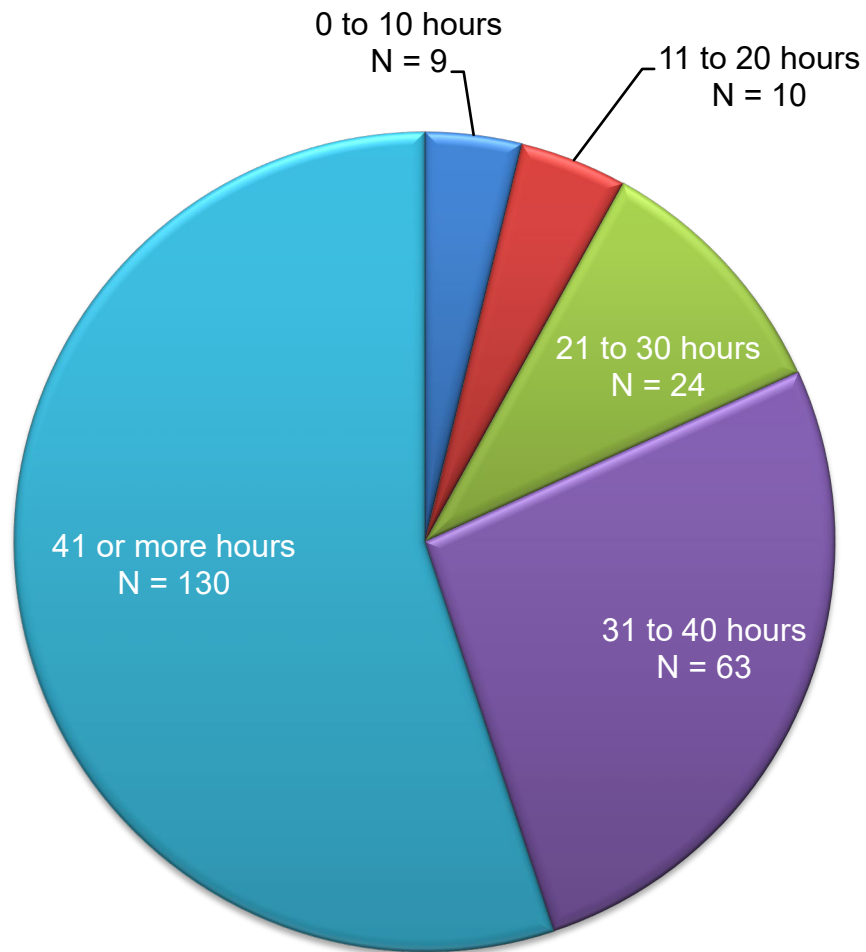


TABLE 4 – OTHER LICENSED VETERINARIANS WORKING IN PRACTICE

SETTING	NUMBER (N)	PERCENT
I am the sole veterinarian	38	16.1
1 to 3 other veterinarians	111	47.0
4 to 5 other veterinarians	26	11.0
6 to 10 other veterinarians	22	9.3
11 or more other veterinarians	39	16.5
Total	236	100*

\*NOTE: Percentages do not add to 100 due to rounding.

FIGURE 4 – OTHER LICENSED VETERINARIANS WORKING IN PRACTICE



TABLE 5 – MAJORITY OF WORK RESPONSIBILITIES

SETTING	NUMBER (N)	PERCENT
Practitioner	208	88.5
Consultant	5	2.1
Education/Research	6	2.5
Management	5	2.1
Other	11	4.7
Total	235	100*

\*NOTE: Percentages do not add to 100 due to rounding.

FIGURE 5 – MAJORITY OF WORK RESPONSIBILITIES

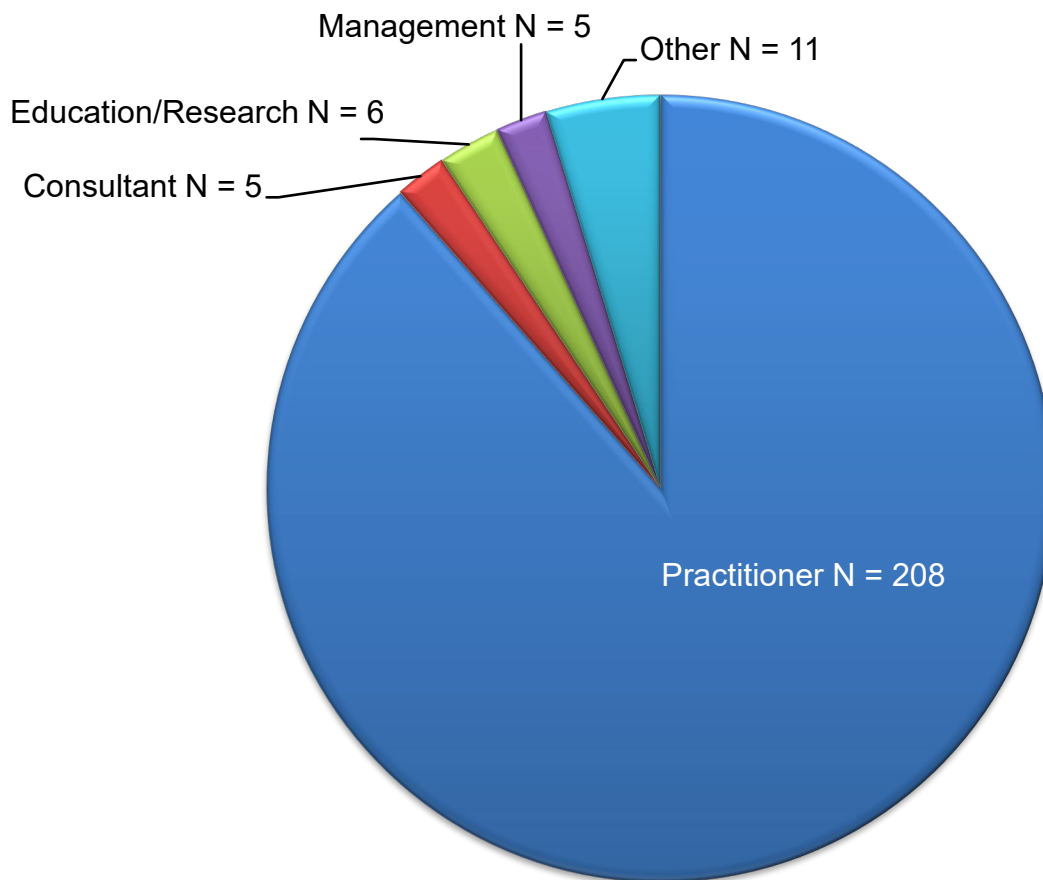




TABLE 6 – PRIMARY EMPLOYER

HOURS	NUMBER (N)	PERCENT
Private practice	140	59.3
Corporation	63	26.7
Government	9	3.8
Academia	8	3.4
Nonprofit	7	3.0
Other	9	3.8
Total	236	100

FIGURE 6 – PRIMARY EMPLOYER

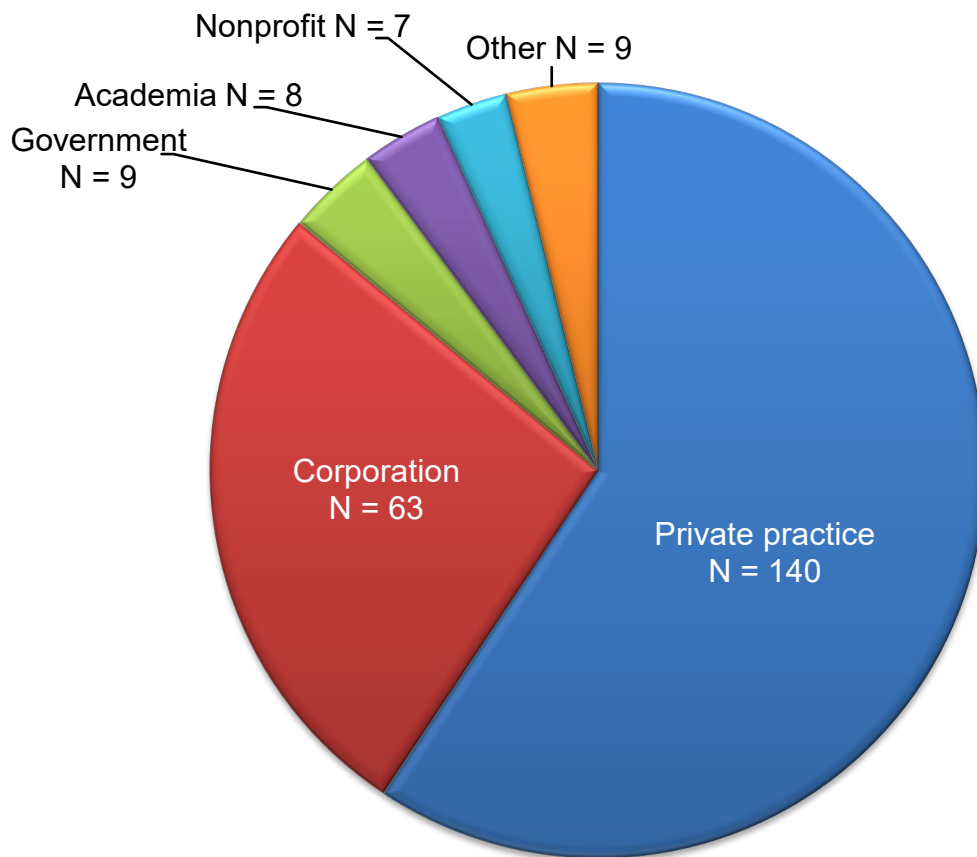


TABLE 7 – PRACTICE SPECIALTY\*

ACTIVITY	NUMBER (N)	PERCENT*
Small animal	199	84.3
Equine	19	8.1
Food animal	15	6.4
Mixed practice	8	3.4
Regulatory	9	3.8
Academic/research	13	5.5
Exotic/zoo/wildlife	33	14.0
Shelter medicine	20	8.5
Laboratory/Biologic/Pharmaceutical	10	4.2

\*NOTE: Respondents were asked to select all that apply. Percentages indicate the proportion in the sample of respondents.

FIGURE 7 – PRACTICE SPECIALTY

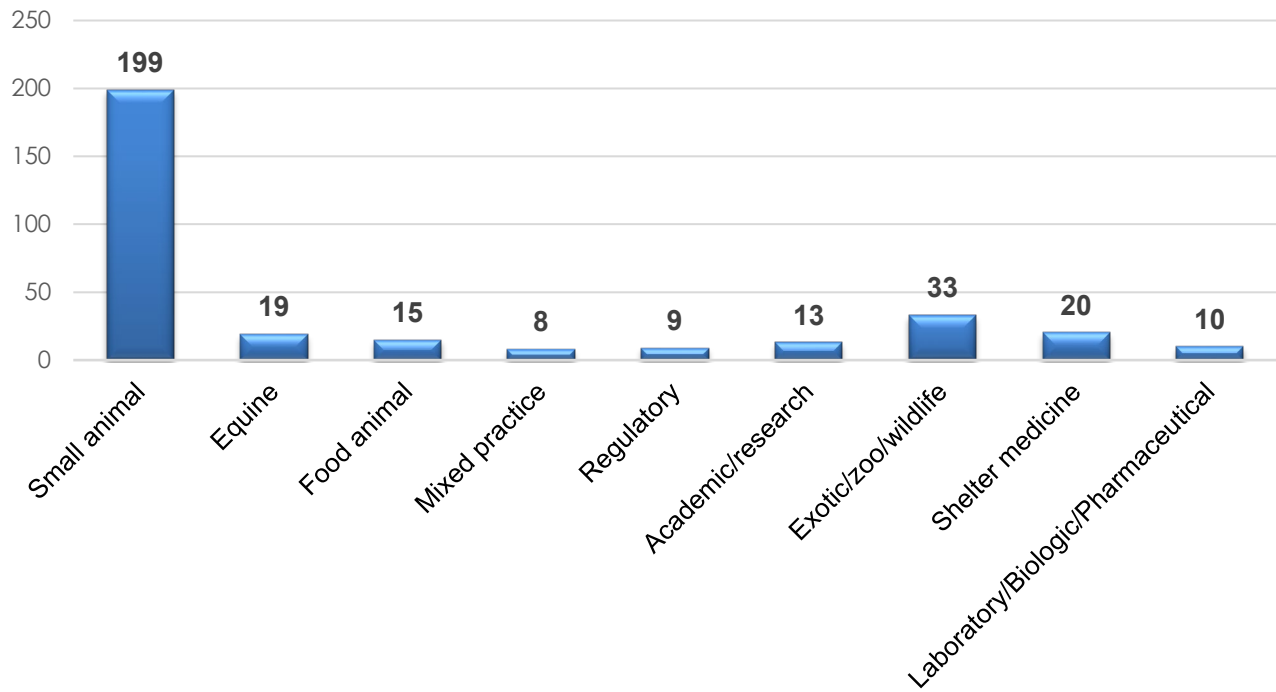


TABLE 8 – PATIENTS TREATED\*

TYPES OF PATIENTS*	NUMBER (N)	PERCENT*
Avian (commercial poultry or fowl)	20	8.5
Avian (pet bird)	38	16.1
Cats	209	88.6
Cattle (beef or dairy)	17	7.2
Camelids	10	4.2
Dogs	207	87.7
Equine (horses)	29	12.3
Other equine (e.g., donkeys, mules)	17	7.2
Exotic animals (e.g., amphibians, reptiles, chinchillas, fish, guinea pigs, hamsters, rabbits)	73	30.9
Sheep and goats	25	10.6
Swine	20	8.5
Zoo or wild animals (e.g., nonhuman primates)	16	6.8
Aquatic or marine	10	4.2
None, I do not treat animals	5	2.1
Rats/mice/lab animals	4	1.6

\*NOTE: Respondents were asked to select all that apply. Percentages indicate the proportion in the sample of respondents.

FIGURE 8 – PATIENTS TREATED

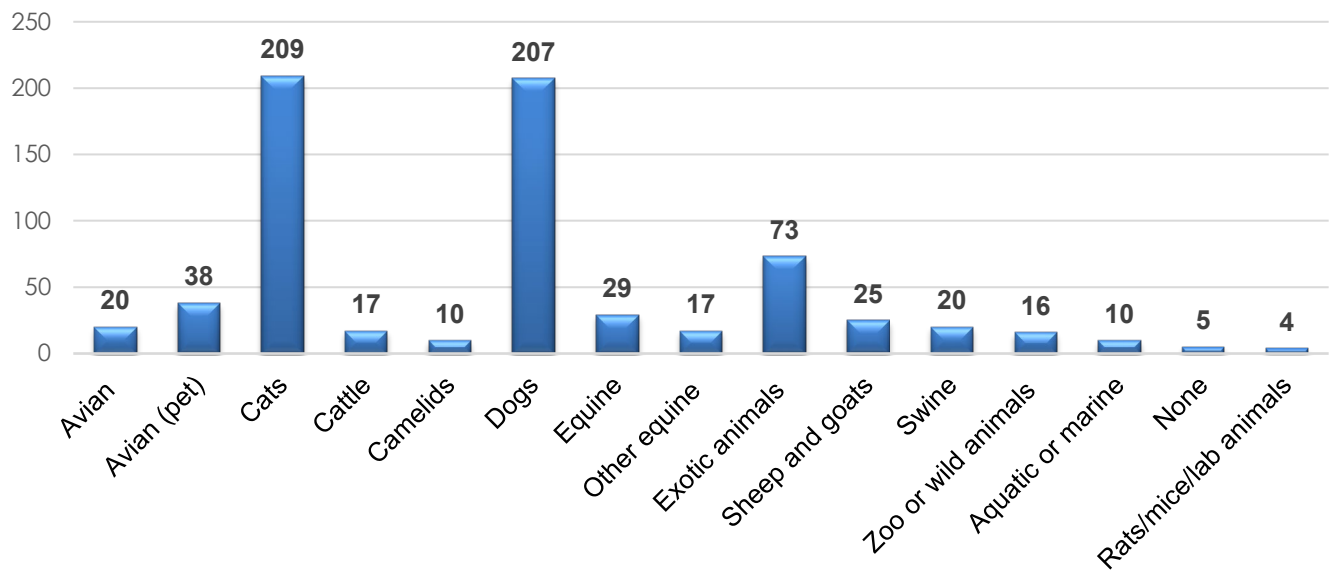


TABLE 9 – PRIMARY WORK SETTING

LOCATION	NUMBER (N)	PERCENT
Urban (more than 50,000 people)	201	85.2
Rural (fewer than 50,000 people)	35	14.8
Total	236	100

TABLE 10 – RESPONDENTS BY REGION

REGION NAME	NUMBER (N)	PERCENT
Los Angeles County and Vicinity	62	26.3
San Francisco Bay Area	52	22.0
San Joaquin Valley	24	10.2
Sacramento Valley	19	8.1
San Diego County and Vicinity	23	9.7
Shasta - Cascade	4	1.7
Riverside and Vicinity	17	7.2
Sierra Mountain Valley	9	3.8
North Coast	11	4.7
South Coast and Central Coast	14	5.9
Total	235	100*

\*NOTE: Percentages do not add to 100 due to rounding.

Appendix A shows a more detailed breakdown of the frequencies by region.



## CHAPTER 4 | DATA ANALYSIS AND RESULTS

### RELIABILITY OF RATINGS

OPES evaluated the task and knowledge ratings obtained by the questionnaire with a standard index of reliability, coefficient alpha ( $\alpha$ ), which ranges from 0 to 1. Coefficient alpha is an estimate of the internal consistency of the respondents' ratings of the task and knowledge statements. A higher coefficient value indicates more consistency between respondent ratings. Coefficients were calculated for all respondent ratings.

Table 11 displays the reliability coefficients for the task statement rating scale in each content area. The overall ratings of task frequency and task importance across content areas were highly reliable (frequency  $\alpha = .969$ ; importance  $\alpha = .971$ ). Table 12 displays the reliability coefficients for the knowledge statement rating scale in each content area. The overall ratings of knowledge importance across content areas were highly reliable ( $\alpha = .984$ ). These results indicate that the responding veterinarians rated the task and knowledge statements consistently throughout the questionnaire.

TABLE 11 – TASK SCALE RELIABILITY

CONTENT AREA	NUMBER OF TASKS	$\alpha$ FREQUENCY	$\alpha$ IMPORTANCE
1. Patient Signalment and History	11	.905	.899
2. Patient Physical Examination	16	.932	.924
3. Patient Data Assessment	7	.779	.917
4. Diagnostic Planning and Procedures	6	.770	.762
5. Diagnostic Interpretation	5	.756	.750
6. Treatment Planning	10	.833	.829
7. Treatment	12	.881	.886
8. Disease Prevention and Health Management	13	.853	.853
9. Professional and Legal Responsibilities	19	.820	.858
Total	99	.969*	.971*

\*NOTE: The total shown is not the sum of the individual content area ratings of task frequency and importance but rather the overall rating of task frequency and task importance.

TABLE 12 – KNOWLEDGE SCALE RELIABILITY

CONTENT AREA	NUMBER OF KNOWLEDGE STATEMENTS	$\alpha$ IMPORTANCE
1. Patient Signalment and History	12	.898
2. Patient Physical Examination	9	.848
3. Patient Data Assessment	13	.922
4. Diagnostic Planning and Procedures	7	.850
5. Diagnostic Interpretation	6	.848
6. Treatment Planning	14	.897
7. Treatment	15	.831
8. Disease Prevention and Health Management	15	.941
9. Professional and Legal Responsibilities	26	.956
Total	117	.984*

\*NOTE: The total shown is not the sum of the individual content area ratings of task frequency and importance but rather the overall rating of task frequency and task importance.

## TASK CRITICALITY INDICES

OPES convened a workshop consisting of seven SMEs in July 2019. The purpose of this workshop was to identify the essential tasks and knowledge required for safe and effective veterinary medical practice at the time of licensure. The SMEs reviewed the mean frequency, mean importance, and criticality index for each task. They also reviewed the mean importance ratings for each knowledge statement.

To calculate the criticality indices of the task statements, OPES test specialists used the following formula. For each respondent, OPES first multiplied the frequency rating ( $F_i$ ) and the importance rating ( $I_i$ ) for each task. Next, OPES averaged the multiplication products across respondents as shown below:

$$\text{Task criticality index} = \text{mean} [(F_i) \times (I_i)]$$

The task statements were sorted in descending order by criticality index and by content area. The task statements, their mean frequency and importance ratings, and their associated criticality indices are presented in Appendix B.

The SMEs who participated in the July 2019 workshop evaluated the task criticality indices derived from the questionnaire results. OPES test specialists instructed the SMEs to identify a cutoff value in order to determine if any of the tasks did not have a high enough criticality index to be retained. The SMEs determined that all tasks should be retained.

## KNOWLEDGE IMPORTANCE RATINGS

To determine the criticality of each knowledge statement, the mean importance (K Imp) rating for each knowledge statement was calculated. The knowledge statements and their mean importance ratings, sorted by descending order and content area, are presented in Appendix C.

The SMEs who participated in the July 2019 workshop that evaluated the task criticality indices also reviewed the knowledge statement mean importance ratings. The SMEs determined that all knowledge statements should be retained.





## CHAPTER 5 | EXAMINATION OUTLINE

### TASK-KNOWLEDGE LINKAGE

The SMEs who participated in the July 2019 workshop reviewed the preliminary assignments of the task and knowledge statements to content areas from the November 2018 and March 2019 workshops. The SMEs established the final linkage of specific knowledge statements to task statements. The SMEs reviewed the content areas and wrote descriptions for each content area.

### CONTENT AREAS AND WEIGHTS

The SMEs in the July 2019 workshop were also asked to finalize the weights for the content areas on the veterinarian examination outline. OPES test specialists presented the SMEs with preliminary weights of the content areas that were calculated by dividing the sum of the criticality indices for the tasks in each content area by the overall sum of the criticality indices for all tasks, as shown below.

$$\frac{\textit{Sum of Criticality Indices for Tasks in Content Area}}{\textit{Sum of Criticality Indices for All Tasks}} = \textit{Percent Weight of Content Area}$$

The SMEs evaluated the preliminary weights by reviewing the following elements for each content area: the group of tasks and knowledge, the linkage established between the tasks and knowledge, and the relative importance of the tasks to veterinary practice in California. The SMEs adjusted the preliminary weights based on what they perceived as the relative importance of the tasks' content to veterinary practice in California. A summary of the preliminary and final content area weights for the veterinarian examination outline is presented in Table 13.

TABLE 13 – CONTENT AREA WEIGHTS

<b>CONTENT AREA</b>	<b>Preliminary Weights</b>	<b>Final Weights</b>
1. Patient Signalment and History	12%	12%
2. Patient Physical Examination	19%	20%
3. Patient Data Assessment	8%	8%
4. Diagnostic Planning and Procedures	6%	13%
5. Diagnostic Interpretation	6%	6%
6. Treatment Planning	11%	11%
7. Treatment	13%	12%
8. Disease Prevention and Health Management	9%	5%
9. Professional and Legal Responsibilities	17%	13%
<b>Total</b>	<b>101%*</b>	<b>100%</b>

\*NOTE: Preliminary weights may not add to 100%. SMEs adjust preliminary weights and ensure that final weights add to 100%.

The examination outline for the veterinarian profession is presented in Table 14.

TABLE 14 – EXAMINATION OUTLINE FOR THE VETERINARIAN PROFESSION

**1. PATIENT SIGNALMENT AND HISTORY (12%):** This area assesses the candidate’s knowledge of determining signalment, chief complaint, prior health status, and historical factors pertinent to current condition.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T1. Obtain patient signalment.	K1. Knowledge of problems associated with signalment. K2. Knowledge of client interviewing techniques to obtain patient history. K4. Knowledge of regional animal diseases. K11. Knowledge of normal growth and development in animals.
T2. Identify patient presenting complaints.	K2. Knowledge of client interviewing techniques to obtain patient history. K3. Knowledge of methods to extract patient information from medical records. K7. Knowledge of effects of interactions with humans and other animals on animal health. K9. Knowledge of effects of prior medical history on current health status of animals.
T3. Obtain duration, severity, and rate of progression of patient condition.	K3. Knowledge of methods to extract patient information from medical records. K5. Knowledge of ranges of normal animal behavior.
T4. Obtain patient past and current medical health history.	K3. Knowledge of methods to extract patient information from medical records. K7. Knowledge of effects of interactions with humans and other animals on animal health. K8. Knowledge of effects of management practices on animal health. K9. Knowledge of effects of prior medical history on current health status of animals. K10. Knowledge of normal attitude, eating, elimination patterns, and nutritional needs of animals. K11. Knowledge of normal growth and development in animals. K12. Knowledge of normal reproduction, performance, and production parameters in animals.
T5. Obtain patient preventive history.	K3. Knowledge of methods to extract patient information from medical records. K4. Knowledge of regional animal diseases.

25

**1. PATIENT SIGNALMENT AND HISTORY (12%):** This area assesses the candidate’s knowledge of determining signalment, chief complaint, prior health status, and historical factors pertinent to current condition.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T6. Obtain patient origin, travel history, and disease exposure.	K4. Knowledge of regional animal diseases. K6. Knowledge of effects of housing and environment on animal health. K7. Knowledge of effects of interactions with humans and other animals on animal health.
T7. Collect information about patient attitude, appetite, elimination, and behavior.	K5. Knowledge of ranges of normal animal behavior. K6. Knowledge of effects of housing and environment on animal health. K7. Knowledge of effects of interactions with humans and other animals on animal health. K10. Knowledge of normal attitude, eating, elimination patterns, and nutritional needs of animals.
T8. Obtain patient diet and feeding history.	K8. Knowledge of effects of management practices on animal health. K10. Knowledge of normal attitude, eating, elimination patterns, and nutritional needs of animals. K11. Knowledge of normal growth and development in animals.
T9. Obtain patient reproductive, production, or performance history.	K8. Knowledge of effects of management practices on animal health. K11. Knowledge of normal growth and development in animals. K12. Knowledge of normal reproduction, performance, and production parameters in animals.
T10. Collect information about patient housing, environment, and interactions with other animals and humans.	K6. Knowledge of effects of housing and environment on animal health. K7. Knowledge of effects of interactions with humans and other animals on animal health. K8. Knowledge of effects of management practices on animal health.
T11. Obtain information about management practices (e.g., husbandry, welfare, handling).	K6. Knowledge of effects of housing and environment on animal health. K7. Knowledge of effects of interactions with humans and other animals on animal health. K8. Knowledge of effects of management practices on animal health. K10. Knowledge of normal attitude, eating, elimination patterns, and nutritional needs of animals.

26

**2. PATIENT PHYSICAL EXAMINATION (20%):** This area assesses the candidate’s knowledge of gathering data by inspection and physical examination to evaluate current health and environmental status.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T12. Evaluate patient demeanor, behavior, and responsiveness.	K13. Knowledge of techniques for evaluating animal demeanor, behavior, and responsiveness. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals. K20. Knowledge of techniques and procedures to examine reproductive, performance, and production parameters in animals.
T13. Restrain patient to perform examination.	K13. Knowledge of techniques for evaluating animal demeanor, behavior, and responsiveness. K14. Knowledge of methods for animal handling and restraint. K15. Knowledge of techniques and procedures to examine animal organ systems.
T14. Obtain patient vital signs.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy.
T15. Examine patient oral cavity.	K14. Knowledge of methods for animal handling and restraint. K15. Knowledge of techniques and procedures to examine animal organ systems. K17. Knowledge of animal physical anatomy. K19. Knowledge of physiological indicators of abnormal function in animals.
T16. Examine patient digestive system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.
T17. Examine patient musculoskeletal system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.

27

**2. PATIENT PHYSICAL EXAMINATION (20%):** This area assesses the candidate’s knowledge of gathering data by inspection and physical examination to evaluate current health and environmental status.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T18. Examine patient cardiovascular system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.
T19. Examine patient respiratory system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.
T20. Examine patient integumentary system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.
T21. Examine patient nervous system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.
T22. Examine patient otic system.	K13. Knowledge of techniques for evaluating animal demeanor, behavior, and responsiveness. K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.

28

**2. PATIENT PHYSICAL EXAMINATION (20%):** This area assesses the candidate’s knowledge of gathering data by inspection and physical examination to evaluate current health and environmental status.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T23. Examine patient ophthalmic system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.
T24. Examine patient urogenital system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals. K20. Knowledge of techniques and procedures to examine reproductive, performance, and production parameters in animals.
T25. Examine patient lymphatic system.	K15. Knowledge of techniques and procedures to examine animal organ systems. K16. Knowledge of ranges of normal physiological function in animals. K17. Knowledge of animal physical anatomy. K18. Knowledge of behavioral manifestations of disease and pain in animals. K19. Knowledge of physiological indicators of abnormal function in animals.
T26. Determine patient body condition score.	K21. Knowledge of body conditioning scoring system for animals.
T27. Evaluate patient performance and production.	K20. Knowledge of techniques and procedures to examine reproductive, performance, and production parameters in animals. K21. Knowledge of body conditioning scoring system for animals.

29



**3. PATIENT DATA ASSESSMENT (8%):** This area assesses the candidate’s knowledge of determining clinical status, forming differential diagnoses, identifying health risks to animal and human populations, and determining presence of abuse or neglect.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T28. Evaluate patient data to determine whether additional information is needed.	K22. Knowledge of triage methods. K24. Knowledge of methods to develop medical problem lists. K25. Knowledge of methods to prioritize medical problem lists. K26. Knowledge of differential diagnoses for problems. K29. Knowledge of effects of nutrition on animal health.
T29. Identify patient conditions that require emergency management.	K22. Knowledge of triage methods. K23. Knowledge of indications for euthanasia or slaughter. K24. Knowledge of methods to develop medical problem lists. K29. Knowledge of effects of nutrition on animal health. K31. Knowledge of public health risks related to animal diseases. K32. Knowledge of risk factors for disease transmission.
T30. Develop problem list based on patient history and physical examination.	K24. Knowledge of methods to develop medical problem lists. K26. Knowledge of differential diagnoses for problems. K28. Knowledge of effects of environment on animal health. K30. Knowledge of effects of population dynamics on animal health. K34. Knowledge of infectious diseases.
T31. Develop list of differential diagnoses for identified problems.	K24. Knowledge of methods to develop medical problem lists. K26. Knowledge of differential diagnoses for problems. K31. Knowledge of public health risks related to animal diseases. K32. Knowledge of risk factors for disease transmission. K33. Knowledge of impact of animal husbandry practices on disease. K34. Knowledge of infectious diseases.
T32. Determine public health risks related to animal disease.	K23. Knowledge of indications for euthanasia or slaughter. K25. Knowledge of methods to prioritize medical problem lists. K28. Knowledge of effects of environment on animal health. K30. Knowledge of effects of population dynamics on animal health. K31. Knowledge of public health risks related to animal diseases. K33. Knowledge of impact of animal husbandry practices on disease.

30

**3. PATIENT DATA ASSESSMENT (8%):** This area assesses the candidate’s knowledge of determining clinical status, forming differential diagnoses, identifying health risks to animal and human populations, and determining presence of abuse or neglect.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T33. Identify animal and population health risks (e.g., genetic, nutritional, environmental).	K28. Knowledge of effects of environment on animal health. K29. Knowledge of effects of nutrition on animal health. K30. Knowledge of effects of population dynamics on animal health. K31. Knowledge of public health risks related to animal diseases. K32. Knowledge of risk factors for disease transmission. K33. Knowledge of impact of animal husbandry practices on disease. K34. Knowledge of infectious diseases.
T34. Identify factors that may indicate animal abuse or neglect.	K23. Knowledge of indications for euthanasia or slaughter. K27. Knowledge of signs of potential animal abuse and neglect. K33. Knowledge of impact of animal husbandry practices on disease.

**4. DIAGNOSTIC PLANNING AND PROCEDURES (13%):** This area assesses the candidate’s knowledge of determining diagnostic plans, and performing or ordering tests and procedures to establish diagnoses.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T35. Identify risks, benefits, and limitations of diagnostic procedures.	K35. Knowledge of risks, benefits, and limitations associated with diagnostic procedures.
T36. Formulate diagnostic plans to revise differential diagnoses lists.	K35. Knowledge of risks, benefits, and limitations associated with diagnostic procedures. K36. Knowledge of methods to formulate diagnostic plans.
T37. Collect and submit samples for laboratory diagnostic tests.	K37. Knowledge of methods and procedures for laboratory sample collection and submission. K39. Knowledge of methods and procedures to perform necropsies. K41. Knowledge of storage and handling of diagnostic samples.
T38. Perform necropsy.	K36. Knowledge of methods to formulate diagnostic plans. K37. Knowledge of methods and procedures for laboratory sample collection and submission. K39. Knowledge of methods and procedures to perform necropsies. K41. Knowledge of storage and handling of diagnostic samples.
T39. Analyze patient diets and food.	K37. Knowledge of methods and procedures for laboratory sample collection and submission. K40. Knowledge of methods to evaluate animal diets and food. K41. Knowledge of storage and handling of diagnostic samples.
T40. Perform diagnostic procedures on patients.	K37. Knowledge of methods and procedures for laboratory sample collection and submission. K38. Knowledge of methods to perform diagnostic procedures on animals. K39. Knowledge of methods and procedures to perform necropsies. K40. Knowledge of methods to evaluate animal diets and food. K41. Knowledge of storage and handling of diagnostic samples.

3

**5. DIAGNOSTIC INTERPRETATION (6%):** This area assesses the candidate’s knowledge of evaluating the results of tests and procedures to establish patient diagnoses and prognoses.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T41. Interpret patient diagnostic results.	K43. Knowledge of methods to interpret diagnostic tests and procedures. K44. Knowledge of methods to formulate working or final diagnoses for animals. K45. Knowledge of animal disease processes. K46. Knowledge of methods to assess patient prognoses. K47. Knowledge of techniques to communicate diagnostic findings and prognoses.
T42. Analyze epidemiological data.	K42. Knowledge of statistical testing and analysis for evaluating diagnostic and epidemiological data. K43. Knowledge of methods to interpret diagnostic tests and procedures. K45. Knowledge of animal disease processes.
T43. Formulate working or final diagnoses for patients.	K43. Knowledge of methods to interpret diagnostic tests and procedures. K44. Knowledge of methods to formulate working or final diagnoses for animals. K45. Knowledge of animal disease processes.
T44. Determine patient prognoses.	K44. Knowledge of methods to formulate working or final diagnoses for animals. K45. Knowledge of animal disease processes. K46. Knowledge of methods to assess patient prognoses. K47. Knowledge of techniques to communicate diagnostic findings and prognoses.
T45. Communicate patient diagnostic findings and prognoses.	K43. Knowledge of methods to interpret diagnostic tests and procedures. K46. Knowledge of methods to assess patient prognoses. K47. Knowledge of techniques to communicate diagnostic findings and prognoses.

3

**6. TREATMENT PLANNING (11%):** This area assesses the candidate’s knowledge of formulating treatment plans based on diagnostics and communicating treatment options to client.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T46. Identify risks and benefits of treatment options.	K48. Knowledge of effects of treatment options on patients. K49. Knowledge of effects of treatment options on public health and environment. K54. Knowledge of infectious, contagious, and zoonotic diseases.
T47. Prioritize treatment options and management of presenting problems.	K48. Knowledge of effects of treatment options on patients. K59. Knowledge of techniques to convey treatment options to clients. K61. Knowledge of indications for euthanasia or slaughter.
T48. Formulate treatment plans.	K48. Knowledge of effects of treatment options on patients. K52. Knowledge of conditions that may require referral or consultation. K59. Knowledge of techniques to convey treatment options to clients. K60. Knowledge of interactions, contraindications, and adverse effects of prescribed treatments. K61. Knowledge of indications for euthanasia or slaughter.
T49. Formulate anesthetic and analgesic plans.	K56. Knowledge of anesthetic and analgesic protocols. K57. Knowledge of animal physical therapy and rehabilitation methods. K60. Knowledge of interactions, contraindications, and adverse effects of prescribed treatments. K61. Knowledge of indications for euthanasia or slaughter.
T50. Formulate behavior modification plans.	K48. Knowledge of effects of treatment options on patients. K51. Knowledge of methods to prioritize treatment and management options. K52. Knowledge of conditions that may require referral or consultation. K58. Knowledge of animal behavior modification methods. K61. Knowledge of indications for euthanasia or slaughter.
T51. Formulate physical therapy and rehabilitation plans.	K52. Knowledge of conditions that may require referral or consultation. K57. Knowledge of animal physical therapy and rehabilitation methods. K59. Knowledge of techniques to convey treatment options to clients. K61. Knowledge of indications for euthanasia or slaughter.
T52. Formulate contagion control plans.	K49. Knowledge of effects of treatment options on public health and environment. K51. Knowledge of methods to prioritize treatment and management options. K55. Knowledge of methods to control spread of disease.
T53. Communicate treatment options to clients.	K48. Knowledge of effects of treatment options on patients. K50. Knowledge of client-related factors that may affect treatment selection. K59. Knowledge of techniques to convey treatment options to clients. K61. Knowledge of indications for euthanasia or slaughter.

34

**6. TREATMENT PLANNING (11%):** This area assesses the candidate’s knowledge of formulating treatment plans based on diagnostics and communicating treatment options to client.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T54. Identify indications for referral or consultation.	K52. Knowledge of conditions that may require referral or consultation. K53. Knowledge of treatment options based on diagnosis. K57. Knowledge of animal physical therapy and rehabilitation methods.
T55. Identify indications for humane euthanasia or slaughter.	K51. Knowledge of methods to prioritize treatment and management options. K54. Knowledge of infectious, contagious, and zoonotic diseases. K55. Knowledge of methods to control spread of disease. K61. Knowledge of indications for euthanasia or slaughter.

**7. TREATMENT (12%):** This area assesses the candidate’s knowledge of administering medical, surgical, and therapeutic procedures indicated by the treatment plan.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T56. Prescribe medical treatment for patients.	K63. Knowledge of methods and procedures for anesthesia and analgesia for animals. K64. Knowledge of methods and procedures for behavior modification in animals. K71. Knowledge of indications to modify treatment plans. K72. Knowledge of treatment complications. K75. Knowledge of evaluation of patient response to treatment.
T57. Implement medical treatment for patients.	K62. Knowledge of emergency and critical care treatment interventions. K67. Knowledge of methods and procedures for medical treatment of animals. K71. Knowledge of indications to modify treatment plans. K72. Knowledge of treatment complications.
T58. Administer and monitor anesthesia and analgesia.	K63. Knowledge of methods and procedures for anesthesia and analgesia for animals. K65. Knowledge of methods and procedures for surgical treatment of animals. K67. Knowledge of methods and procedures for medical treatment of animals. K72. Knowledge of treatment complications. K75. Knowledge of evaluation of patient response to treatment.
T59. Perform surgical procedures on patients.	K62. Knowledge of emergency and critical care treatment interventions. K63. Knowledge of methods and procedures for anesthesia and analgesia for animals. K65. Knowledge of methods and procedures for surgical treatment of animals. K76. Knowledge of techniques to communicate patient treatment response and follow-up care to clients.
T60. Perform dental procedures on patients.	K63. Knowledge of methods and procedures for anesthesia and analgesia for animals. K66. Knowledge of methods and procedures for dental treatment of animals. K75. Knowledge of evaluation of patient response to treatment.
T61. Apply external therapeutic devices (e.g., bandages, splints, or E-collar) to patients.	K62. Knowledge of emergency and critical care treatment interventions. K63. Knowledge of methods and procedures for anesthesia and analgesia for animals. K68. Knowledge of methods and procedures for applying external therapeutic devices. K72. Knowledge of treatment complications.

36

**7. TREATMENT (12%):** This area assesses the candidate’s knowledge of administering medical, surgical, and therapeutic procedures indicated by the treatment plan.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T62. Perform physical therapy and rehabilitation on patients.	K70. Knowledge of methods and procedures for physical therapy and rehabilitation of animals. K71. Knowledge of indications to modify treatment plans. K75. Knowledge of evaluation of patient response to treatment.
T63. Perform emergency and critical care procedures on patients.	K62. Knowledge of emergency and critical care treatment interventions. K63. Knowledge of methods and procedures for anesthesia and analgesia for animals. K75. Knowledge of evaluation of patient response to treatment.
T64. Evaluate patient responses to treatments.	K64. Knowledge of methods and procedures for behavior modification in animals. K69. Knowledge of methods and procedures for euthanasia. K71. Knowledge of indications to modify treatment plans. K75. Knowledge of evaluation of patient response to treatment.
T65. Determine need for modification of patient treatment plans.	K69. Knowledge of methods and procedures for euthanasia. K71. Knowledge of indications to modify treatment plans. K72. Knowledge of treatment complications. K75. Knowledge of evaluation of patient response to treatment. K76. Knowledge of techniques to communicate patient treatment response and follow-up care to clients.
T66. Perform humane euthanasia.	K68. Knowledge of methods and procedures for applying external therapeutic devices. K69. Knowledge of methods and procedures for euthanasia. K71. Knowledge of indications to modify treatment plans. K72. Knowledge of treatment complications. K74. Knowledge of therapeutic nutritional management for animals.
T67. Communicate patient treatment responses and follow-up care to clients.	K69. Knowledge of methods and procedures for euthanasia. K72. Knowledge of treatment complications. K75. Knowledge of evaluation of patient response to treatment. K76. Knowledge of techniques to communicate patient treatment response and follow-up care to clients.

37



**8. DISEASE PREVENTION AND HEALTH MANAGEMENT (5%):** This area assesses the candidate’s knowledge of developing preventative plans and programs to promote animal health and public safety.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T68. Develop nutritional plans for patients.	K77. Knowledge of nutritional management in animals. K80. Knowledge of methods for parasite control in animals. K88. Knowledge of animal husbandry. K89. Knowledge of weight management methods for animals.
T69. Develop environmental plans for patients.	K78. Knowledge of environmental management for animal disease prevention. K79. Knowledge of methods to prevent transmission of communicable diseases in animals. K88. Knowledge of animal husbandry.
T70. Develop plans to prevent or control infectious diseases.	K78. Knowledge of environmental management for animal disease prevention. K79. Knowledge of methods to prevent transmission of communicable diseases in animals. K80. Knowledge of methods for parasite control in animals. K86. Knowledge of methods and protocols to control, prevent, or eradicate infectious diseases in animals. K87. Knowledge of personal protective equipment and decontamination protocols. K88. Knowledge of animal husbandry.
T71. Develop plans to control parasites in patients.	K78. Knowledge of environmental management for animal disease prevention. K79. Knowledge of methods to prevent transmission of communicable diseases in animals. K80. Knowledge of methods for parasite control in animals. K88. Knowledge of animal husbandry.
T72. Develop plans to improve patient physical conditioning.	K80. Knowledge of methods for parasite control in animals. K81. Knowledge of physical conditioning to prevent injury and disease in animals. K82. Knowledge of physical rehabilitation methods for animals. K88. Knowledge of animal husbandry. K90. Knowledge of pain management methods for animals.
T73. Develop physical rehabilitation plans for patients.	K77. Knowledge of nutritional management in animals. K81. Knowledge of physical conditioning to prevent injury and disease in animals. K82. Knowledge of physical rehabilitation methods for animals. K84. Knowledge of principles of animal population management. K90. Knowledge of pain management methods for animals.

8

**8. DISEASE PREVENTION AND HEALTH MANAGEMENT (5%):** This area assesses the candidate’s knowledge of developing preventative plans and programs to promote animal health and public safety.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T74. Develop plans to improve patient dental health.	K77. Knowledge of nutritional management in animals. K83. Knowledge of methods of preventive dental care. K88. Knowledge of animal husbandry.
T75. Develop population management plans.	K84. Knowledge of principles of animal population management. K85. Knowledge of methods for reproduction, performance, and reproduction management in animals. K88. Knowledge of animal husbandry.
T76. Develop reproductive, performance, or production health plans for patients.	K79. Knowledge of methods to prevent transmission of communicable diseases in animals. K85. Knowledge of methods for reproduction, performance, and reproduction management in animals. K86. Knowledge of methods and protocols to control, prevent, or eradicate infectious diseases in animals. K88. Knowledge of animal husbandry.
T77. Develop biosecurity plans.	K79. Knowledge of methods to prevent transmission of communicable diseases in animals. K84. Knowledge of principles of animal population management. K86. Knowledge of methods and protocols to control, prevent, or eradicate infectious diseases in animals. K87. Knowledge of personal protective equipment and decontamination protocols. K88. Knowledge of animal husbandry.
T78. Develop pain management plans for patients.	K81. Knowledge of physical conditioning to prevent injury and disease in animals. K82. Knowledge of physical rehabilitation methods for animals. K88. Knowledge of animal husbandry. K90. Knowledge of pain management methods for animals. K91. Knowledge of techniques to communicate patient preventive and management recommendations to clients.

69

**8. DISEASE PREVENTION AND HEALTH MANAGEMENT (5%):** This area assesses the candidate’s knowledge of developing preventative plans and programs to promote animal health and public safety.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T79. Develop weight management plans for patients.	K77. Knowledge of nutritional management in animals. K82. Knowledge of physical rehabilitation methods for animals. K88. Knowledge of animal husbandry. K89. Knowledge of weight management methods for animals.
T80. Communicate patient preventive and management recommendations to clients.	K78. Knowledge of environmental management for animal disease prevention. K84. Knowledge of principles of animal population management. K88. Knowledge of animal husbandry. K91. Knowledge of techniques to communicate patient preventive and management recommendations to clients.

**9. PROFESSIONAL AND LEGAL RESPONSIBILITIES (13%):** This area assesses the candidate’s knowledge of compliance with state and federal laws and regulations, including veterinary practice standards, reportable diseases, animal movement, and disaster response.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T81. Prescribe, dispense, administer, and dispose of medications and treatments in accordance with laws and regulations.	K92. Knowledge of legal requirements related to medication prescriptions. K93. Knowledge of legal requirements related to administration of medications to patients. K94. Knowledge of legal requirements related to judicious use of antibiotics. K95. Knowledge of legal requirements related to drug consultation. K96. Knowledge of legal requirements and guidelines related to veterinary use of cannabis. K97. Knowledge of legal requirements related to disposal of medications. K99. Knowledge of legal requirements related to prescribing, dispensing, administration, and disposal of controlled substances. K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship. K114. Knowledge of legal responsibilities to prevent drug residues in food chain. K115. Knowledge of laws and regulations regarding restrictions of performance-enhancing drugs.
T82. Maintain awareness of potential agro- and bio-terrorism agents.	K97. Knowledge of legal requirements related to disposal of medications. K98. Knowledge of potential agents of agro- and bio-terrorism. K105. Knowledge of legal requirements related to reportable diseases.
T83. Prescribe, dispense, administer, and dispose of controlled substances in accordance with laws and regulations.	K92. Knowledge of legal requirements related to medication prescriptions. K93. Knowledge of legal requirements related to administration of medications to patients. K96. Knowledge of legal requirements and guidelines related to veterinary use of cannabis. K99. Knowledge of legal requirements related to prescribing, dispensing, administration, and disposal of controlled substances. K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship. K114. Knowledge of legal responsibilities to prevent drug residues in food chain.

41

**9. PROFESSIONAL AND LEGAL RESPONSIBILITIES (13%):** This area assesses the candidate’s knowledge of compliance with state and federal laws and regulations, including veterinary practice standards, reportable diseases, animal movement, and disaster response.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T84. Handle, store, and dispose of biohazardous waste in accordance with laws and regulations.	K95. Knowledge of legal requirements related to drug consultation. K98. Knowledge of potential agents of agro- and bio-terrorism. K100. Knowledge of legal requirements related to handling, storage, and disposal of biohazardous waste. K109. Knowledge of legal requirements related to minimum standards of veterinary practice.
T85. Complete documents required for movement of animals.	K101. Knowledge of legal requirements related to movement of live animals. K103. Knowledge of legal requirements related to veterinary record keeping. K111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship.
T86. Handle radioactive materials and radiographic equipment in accordance with laws and regulations.	K100. Knowledge of legal requirements related to handling, storage, and disposal of biohazardous waste. K102. Knowledge of legal requirements related to radiation safety.
T87. Maintain complete patient medical records in accordance with laws and regulations.	K103. Knowledge of legal requirements related to veterinary record keeping. K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship. K117. Knowledge of legal and professional standards related to documentation of veterinary care.
T88. Manage abandoned animal cases.	K101. Knowledge of legal requirements related to movement of live animals. K104. Knowledge of legal requirements related to abandonment of animals. K106. Knowledge of legal requirements related to reporting suspected animal abuse or neglect. K109. Knowledge of legal requirements related to minimum standards of veterinary practice.
T89. Report diseases in accordance with laws and regulations.	K105. Knowledge of legal requirements related to reportable diseases. K111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship. K112. Knowledge of legal requirements related to confidentiality of patient and client information. K114. Knowledge of legal responsibilities to prevent drug residues in food chain.

42

**9. PROFESSIONAL AND LEGAL RESPONSIBILITIES (13%):** This area assesses the candidate’s knowledge of compliance with state and federal laws and regulations, including veterinary practice standards, reportable diseases, animal movement, and disaster response.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T90. Report cases of suspected animal abuse and neglect as mandated by law.	K104. Knowledge of legal requirements related to abandonment of animals. K106. Knowledge of legal requirements related to reporting suspected animal abuse or neglect. K112. Knowledge of legal requirements related to confidentiality of patient and client information.
T91. Supervise registered veterinary technicians and unregistered assistants in accordance with Veterinary Medical Board regulations.	K107. Knowledge of legal requirements related to supervision of registered veterinary technicians and unregistered assistants. K108. Knowledge of legal requirements related to scope of practice of registered veterinary technicians and unregistered assistants.
T92. Manage practice in accordance with laws and regulations related to minimum standards of care.	K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K117. Knowledge of legal and professional standards related to documentation of veterinary care.
T93. Maintain veterinary premises in accordance with legal requirements.	K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K110. Knowledge of legal requirements related to standards for veterinary premises.
T94. Establish and maintain veterinary-client-patient relationships as required by laws and regulations.	K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship. K112. Knowledge of legal requirements related to confidentiality of patient and client information. K117. Knowledge of legal and professional standards related to documentation of veterinary care.
T95. Disclose information about patients or clients in accordance with laws and regulations.	K111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship. K112. Knowledge of legal requirements related to confidentiality of patient and client information. K113. Knowledge of legal requirements related to informed consent.

43

**9. PROFESSIONAL AND LEGAL RESPONSIBILITIES (13%):** This area assesses the candidate’s knowledge of compliance with state and federal laws and regulations, including veterinary practice standards, reportable diseases, animal movement, and disaster response.

<i>Tasks</i>	<i>Associated Knowledge Statements</i>
T96. Obtain informed consent for diagnostic testing and treatment.	K111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship. K112. Knowledge of legal requirements related to confidentiality of patient and client information. K113. Knowledge of legal requirements related to informed consent.
T97. Manage drug prescriptions for production or performance animals in accordance with laws and regulations.	K92. Knowledge of legal requirements related to medication prescriptions. K93. Knowledge of legal requirements related to administration of medications to patients. K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K114. Knowledge of legal responsibilities to prevent drug residues in food chain. K115. Knowledge of laws and regulations regarding restrictions of performance-enhancing drugs.
T98. Manage patients with rabies in accordance with laws and regulations.	K105. Knowledge of legal requirements related to reportable diseases. K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K116. Knowledge of laws and regulations related to rabies control. K117. Knowledge of legal and professional standards related to documentation of veterinary care.
T99. Document provision of care in accordance with legal and professional standards.	K109. Knowledge of legal requirements related to minimum standards of veterinary practice. K117. Knowledge of legal and professional standards related to documentation of veterinary care.

## CHAPTER 6 | CONCLUSION

The OA of the veterinarian profession described in this report provides a comprehensive description of current practice in California. The procedures employed to perform the OA were based upon a content validation strategy to ensure that the results accurately represent veterinary medical practice. Results of this OA provide information regarding current practice that can be used to review the NAVLE and to develop the CSB and the VLE.

By adopting the veterinary examination outline contained in this report, the Board ensures that its veterinarian licensure examination program reflects current practice.

This report provides all documentation necessary to verify that the analysis has been completed in accordance with legal, professional, and technical standards.





## APPENDIX A | RESPONDENTS BY REGION

LOS ANGELES COUNTY AND VICINITY

<b>County of Practice</b>	<b>Frequency</b>
Los Angeles	39
Orange	23
TOTAL	62

NORTH COAST

<b>County of Practice</b>	<b>Frequency</b>
Humboldt	2
Sonoma	9
TOTAL	11

RIVERSIDE AND VICINITY

<b>County of Practice</b>	<b>Frequency</b>
Riverside	9
San Bernardino	8
TOTAL	17

SACRAMENTO VALLEY

<b>County of Practice</b>	<b>Frequency</b>
Butte	4
Sacramento	9
Yolo	5
Yuba	1
TOTAL	19

SAN DIEGO COUNTY AND VICINITY

<b>County of Practice</b>	<b>Frequency</b>
San Diego	23
TOTAL	23

SAN FRANCISCO BAY AREA

<b>County of Practice</b>	<b>Frequency</b>
Alameda	13
Contra Costa	9
Marin	3
Napa	1
San Francisco	5
San Mateo	6
Santa Clara	11
Santa Cruz	4
TOTAL	52

SAN JOAQUIN VALLEY

<b>County of Practice</b>	<b>Frequency</b>
Fresno	5
Kern	2
Kings	1
Madera	1
San Joaquin	5
Stanislaus	6
Tulare	4
TOTAL	24

SHASTA - CASCADE

<b>County of Practice</b>	<b>Frequency</b>
Shasta	4
TOTAL	4

SIERRA MOUNTAIN VALLEY

<b>County of Practice</b>	<b>Frequency</b>
Amador	1
El Dorado	2
Inyo	1
Placer	4
Tuolumne	1
TOTAL	9

SOUTH COAST AND CENTRAL COAST

<b>County of Practice</b>	<b>Frequency</b>
Monterey	1
San Luis Obispo	4
Santa Barbara	4
Ventura	5
TOTAL	14

## APPENDIX B | CRITICALITY INDICES FOR ALL TASKS BY CONTENT AREA

**Content Area 1**  
**Patient Signalment and History**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
2	Identify patient presenting complaints.	4.6017	4.6282	21.73
1	Obtain patient signalment.	4.6102	4.5171	21.10
3	Obtain duration, severity, and rate of progression of patient condition.	4.3983	4.4298	20.22
7	Collect information about patient attitude, appetite, elimination, and behavior.	4.4110	4.2426	19.33
4	Obtain patient past and current medical health history.	4.1489	4.1159	17.76
8	Obtain patient diet and feeding history.	3.8128	3.5171	14.31
5	Obtain patient preventive history.	3.7161	3.4638	13.82
10	Collect information about patient housing, environment, and interactions with other animals and humans.	3.5678	3.3234	12.87
6	Obtain patient origin, travel history, and disease exposure.	3.3051	3.3872	12.16
11	Obtain information about management practices (e.g., husbandry, welfare, handling).	2.8263	2.7253	9.59
9	Obtain patient reproductive, production, or performance history.	2.6907	2.7106	8.71

**Content Area 2**  
**Patient Physical Examination**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
14	Obtain patient vital signs.	4.5000	4.4298	20.48
18	Examine patient cardiovascular system.	4.4661	4.3590	20.16
12	Evaluate patient demeanor, behavior, and responsiveness.	4.5149	4.3219	19.96
19	Examine patient respiratory system.	4.4746	4.3191	19.95
26	Determine patient body condition score.	4.4788	3.7617	17.30
15	Examine patient oral cavity.	4.1610	3.8723	16.91
20	Examine patient integumentary system.	4.3136	3.7277	16.84
17	Examine patient musculoskeletal system.	4.1907	3.8426	16.82
16	Examine patient digestive system.	4.1017	3.8723	16.77
25	Examine patient lymphatic system.	3.8468	3.6078	15.22
13	Restrain patient to perform examination.	3.7542	3.7660	15.15
21	Examine patient nervous system.	3.7627	3.7149	14.84
24	Examine patient urogenital system.	3.7288	3.6000	14.41
23	Examine patient ophthalmic system.	3.6864	3.5000	14.01
22	Examine patient otic system.	3.7331	3.3872	13.88
27	Evaluate patient performance and production.	1.9532	1.8405	6.09



**Content Area 3  
Patient Data Assessment**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
30	Develop problem list based on patient history and physical examination.	4.3178	4.1617	18.89
29	Identify patient conditions that require emergency management.	3.9492	4.6553	18.83
31	Develop list of differential diagnoses for identified problems.	4.2881	4.1277	18.50
28	Evaluate patient data to determine whether additional information is needed.	4.0932	3.8761	16.91
32	Determine public health risks related to animal disease.	3.0932	3.8205	12.71
33	Identify animal and population health risks (e.g., genetic, nutritional, environmental).	2.8093	3.1202	10.31
34	Identify factors that may indicate animal abuse or neglect.	2.3051	3.8000	9.33

**Content Area 4**  
**Diagnostic Planning and Procedures**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
40	Perform diagnostic procedures on patients.	4.2298	4.2704	19.16
37	Collect and submit samples for laboratory diagnostic tests.	4.1737	4.2511	18.58
36	Formulate diagnostic plans to revise differential diagnoses lists.	4.1059	4.0726	17.83
35	Identify risks, benefits, and limitations of diagnostic procedures.	4.0466	3.9191	16.78
39	Analyze patient diets and food.	2.7458	2.9661	9.28
38	Perform necropsy.	1.2458	2.4043	3.82

**Content Area 5**  
**Diagnostic Interpretation**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
45	Communicate patient diagnostic findings and prognoses.	4.5551	4.5319	21.31
41	Interpret patient diagnostic results.	4.5339	4.5322	21.11
43	Formulate working or final diagnoses for patients.	4.3051	4.2426	19.07
44	Determine patient prognoses.	4.1907	4.0424	17.68
42	Analyze epidemiological data.	1.4407	2.0213	4.61

**Content Area 6  
Treatment Planning**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
48	Formulate treatment plans.	4.4534	4.3915	20.28
53	Communicate treatment options to clients.	4.3602	4.2585	19.91
49	Formulate anesthetic and analgesic plans.	4.0254	4.2553	18.21
47	Prioritize treatment options and management of presenting problems.	4.2128	4.1068	18.19
46	Identify risks and benefits of treatment options.	4.1702	4.1667	18.18
55	Identify indications for humane euthanasia or slaughter.	3.8008	4.0932	16.57
54	Identify indications for referral or consultation.	3.7415	3.9407	15.83
50	Formulate behavior modification plans.	2.3051	2.8220	7.71
52	Formulate contagion control plans.	1.8766	3.1760	7.55
51	Formulate physical therapy and rehabilitation plans.	1.7702	2.5532	5.89

**Content Area 7  
Treatment**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
56	Prescribe medical treatment for patients.	4.4681	4.3547	20.23
57	Implement medical treatment for patients.	4.3362	4.2521	19.43
64	Evaluate patient responses to treatments.	4.2821	4.2650	18.94
67	Communicate patient treatment responses and follow-up care to clients.	4.0553	4.1288	18.02
65	Determine need for modification of patient treatment plans.	3.9574	4.1404	17.18
59	Perform surgical procedures on patients.	3.5149	4.1239	15.94
66	Perform humane euthanasia.	3.4170	4.0812	14.71
58	Administer and monitor anesthesia and analgesia.	2.9234	4.3991	13.76
63	Perform emergency and critical care procedures on patients.	2.8085	4.3219	13.20
61	Apply external therapeutic devices (e.g., bandages, splints, or E-collar) to patients.	3.1660	3.5812	12.46
60	Perform dental procedures on patients.	2.9191	3.3846	12.43
62	Perform physical therapy and rehabilitation on patients.	1.2000	2.2414	4.00

**Content Area 8**  
**Disease Prevention and Health Management**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
78	Develop pain management plans for patients.	4.0805	4.2340	18.10
80	Communicate patient preventive and management recommendations to clients.	3.8504	3.8155	15.94
71	Develop plans to control parasites in patients.	3.4746	3.5812	13.67
79	Develop weight management plans for patients.	3.27660	3.4829	12.57
74	Develop plans to improve patient dental health.	3.1186	3.3051	12.30
70	Develop plans to prevent or control infectious diseases.	2.5551	3.4786	10.42
68	Develop nutritional plans for patients.	2.3644	3.1356	8.37
72	Develop plans to improve patient physical conditioning.	2.3686	2.8291	8.25
69	Develop environmental plans for patients.	1.9280	2.5593	6.31
73	Develop physical rehabilitation plans for patients.	1.3771	2.3191	4.60
77	Develop biosecurity plans.	1.0042	1.9828	4.19
75	Develop population management plans.	1.0593	1.5837	3.80
76	Develop reproductive, performance, or production health plans for patients.	.9915	1.4979	3.35

**Content Area 9**  
**Professional and Legal Responsibilities**

<b>Task Number</b>	<b>Task Statement</b>	<b>Mean Importance</b>	<b>Mean Frequency</b>	<b>Task Criticality Index</b>
87	Maintain complete patient medical records in accordance with laws and regulations.	4.7064	4.4592	21.35
81	Prescribe, dispense, administer, and dispose of medications and treatments in accordance with laws and regulations.	4.4043	4.4095	19.97
94	Establish and maintain veterinary-client-patient relationships as required by laws and regulations.	4.4576	4.1931	19.56
96	Obtain informed consent for diagnostic testing and treatment.	4.2596	4.1552	18.90
91	Supervise registered veterinary technicians and unregistered assistants in accordance with Veterinary Medical Board regulations.	4.1822	3.9870	18.20
83	Prescribe, dispense, administer, and dispose of controlled substances in accordance with laws and regulations.	3.9110	4.2672	17.61
99	Document provision of care in accordance with legal and professional standards.	3.9280	4.0173	16.90
92	Manage practice in accordance with laws and regulations related to minimum standards of care.	3.6737	3.6983	16.23
84	Handle, store, and dispose of biohazardous waste in accordance with laws and regulations.	3.7669	3.8927	15.94
93	Maintain veterinary premises in accordance with legal requirements.	3.1277	3.2575	13.32
95	Disclose information about patients or clients in accordance with laws and regulations.	3.1610	3.6164	12.71
86	Handle radioactive materials and radiographic equipment in accordance with laws and regulations.	2.4534	3.0517	10.72
85	Complete documents required for movement of animals.	2.2881	2.8190	8.38
97	Manage drug prescriptions for production or performance animals in accordance with laws and regulations.	1.4661	1.9267	6.37
98	Manage patients with rabies in accordance with laws and regulations.	1.2458	3.5560	5.80
89	Report diseases in accordance with laws and regulations.	1.3660	3.5991	5.78
90	Report cases of suspected animal abuse and neglect as mandated by law.	1.2966	3.7253	5.38
88	Manage abandoned animal cases.	1.2712	2.3534	4.33
82	Maintain awareness of potential agro- and bio-terrorism agents.	1.1624	1.9783	4.29

## APPENDIX C | KNOWLEDGE IMPORTANCE RATINGS



**Content Area 1  
Patient Signalment and History**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
10	Knowledge of normal attitude, eating, elimination patterns, and nutritional needs of animals.	3.2246
1	Knowledge of problems associated with signalment.	3.1271
5	Knowledge of ranges of normal animal behavior.	2.9319
2	Knowledge of client interviewing techniques to obtain patient history.	2.9280
9	Knowledge of effects of prior medical history on current health status of animals.	2.9106
11	Knowledge of normal growth and development in animals.	2.8851
3	Knowledge of methods to extract patient information from medical records.	2.6949
4	Knowledge of regional animal diseases.	2.6638
6	Knowledge of effects of housing and environment on animal health.	2.5297
7	Knowledge of effects of interactions with humans and other animals on animal health.	2.3702
8	Knowledge of effects of management practices on animal health.	2.0593
12	Knowledge of normal reproduction, performance, and production parameters in animals.	1.6017

**Content Area 2  
Patient Physical Examination**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
14	Knowledge of methods for animal handling and restraint.	3.5362
16	Knowledge of ranges of normal physiological function in animals.	3.4043
17	Knowledge of animal physical anatomy.	3.3856
19	Knowledge of physiological indicators of abnormal function in animals.	3.3856
18	Knowledge of behavioral manifestations of disease and pain in animals.	3.3532
15	Knowledge of techniques and procedures to examine animal organ systems.	3.3178
13	Knowledge of techniques for evaluating animal demeanor, behavior, and responsiveness.	2.8729
21	Knowledge of body conditioning scoring system for animals.	2.6907
20	Knowledge of techniques and procedures to examine reproductive, performance, and production parameters in animals.	1.5191

**Content Area 3  
Patient Data Assessment**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
26	Knowledge of differential diagnoses for problems.	3.2298
23	Knowledge of indications for euthanasia or slaughter.	3.1667
22	Knowledge of triage methods.	3.0720
25	Knowledge of methods to prioritize medical problem lists.	3.0381
34	Knowledge of infectious diseases.	3.0342
24	Knowledge of methods to develop medical problem lists.	2.9915
32	Knowledge of risk factors for disease transmission.	2.7830
27	Knowledge of signs of potential animal abuse and neglect.	2.6229
29	Knowledge of effects of nutrition on animal health.	2.6229
31	Knowledge of public health risks related to animal diseases.	2.4979
28	Knowledge of effects of environment on animal health.	2.4873
33	Knowledge of impact of animal husbandry practices on disease.	2.1191
30	Knowledge of effects of population dynamics on animal health.	1.4206

**Content Area 4**  
**Diagnostic Planning and Procedures**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
35	Knowledge of risks, benefits, and limitations associated with diagnostic procedures.	3.1059
38	Knowledge of methods to perform diagnostic procedures on animals.	3.0766
36	Knowledge of methods to formulate diagnostic plans.	3.0720
37	Knowledge of methods and procedures for laboratory sample collection and submission.	2.9573
41	Knowledge of storage and handling of diagnostic samples.	2.7191
40	Knowledge of methods to evaluate animal diets and food.	1.8000
39	Knowledge of methods and procedures to perform necropsies.	1.3390

**Content Area 5  
Diagnostic Interpretation**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
45	Knowledge of animal disease processes.	3.2468
47	Knowledge of techniques to communicate diagnostic findings and prognoses.	3.2043
44	Knowledge of methods to formulate working or final diagnoses for animals.	3.1489
43	Knowledge of methods to interpret diagnostic tests and procedures.	3.1149
46	Knowledge of methods to assess patient prognoses.	3.0340
42	Knowledge of statistical testing and analysis for evaluating diagnostic and epidemiological data.	1.0043

**Content Area 6  
Treatment Planning**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
56	Knowledge of anesthetic and analgesic protocols.	3.3305
48	Knowledge of effects of treatment options on patients.	3.2542
53	Knowledge of treatment options based on diagnosis.	3.2500
60	Knowledge of interactions, contraindications, and adverse effects of prescribed treatments.	3.2119
54	Knowledge of infectious, contagious, and zoonotic diseases.	3.1186
61	Knowledge of indications for euthanasia or slaughter.	3.0940
52	Knowledge of conditions that may require referral or consultation.	3.0763
59	Knowledge of techniques to convey treatment options to clients.	2.9703
51	Knowledge of methods to prioritize treatment and management options.	2.9661
55	Knowledge of methods to control spread of disease.	2.9449
50	Knowledge of client-related factors that may affect treatment selection.	2.8468
49	Knowledge of effects of treatment options on public health and environment.	2.1059
58	Knowledge of animal behavior modification methods.	1.7585
57	Knowledge of animal physical therapy and rehabilitation methods.	1.4000

**Content Area 7  
Treatment**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
63	Knowledge of methods and procedures for anesthesia and analgesia for animals.	3.3362
67	Knowledge of methods and procedures for medical treatment of animals.	3.2924
62	Knowledge of emergency and critical care treatment interventions.	3.2076
69	Knowledge of methods and procedures for euthanasia.	3.1931
75	Knowledge of evaluation of patient response to treatment.	3.1872
72	Knowledge of treatment complications.	3.1441
65	Knowledge of methods and procedures for surgical treatment of animals.	3.0890
76	Knowledge of techniques to communicate patient treatment response and follow-up care to clients.	3.0684
71	Knowledge of indications to modify treatment plans.	3.0128
66	Knowledge of methods and procedures for dental treatment of animals.	2.5297
74	Knowledge of therapeutic nutritional management for animals.	2.1483
68	Knowledge of methods and procedures for applying external therapeutic devices.	2.1356
73	Knowledge of environmental management in the treatment of animal diseases.	2.1111
64	Knowledge of methods and procedures for behavior modification in animals.	1.6766
70	Knowledge of methods and procedures for physical therapy and rehabilitation of animals.	1.3559

**Content Area 8**  
**Disease Prevention and Health Management**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
90	Knowledge of pain management methods for animals.	3.3319
91	Knowledge of techniques to communicate patient preventive and management recommendations to clients.	3.0213
80	Knowledge of methods for parasite control in animals.	2.6809
79	Knowledge of methods to prevent transmission of communicable diseases in animals.	2.6426
87	Knowledge of personal protective equipment and decontamination protocols.	2.6239
89	Knowledge of weight management methods for animals.	2.2778
86	Knowledge of methods and protocols to control, prevent, or eradicate infectious diseases in animals.	2.2766
83	Knowledge of methods of preventive dental care.	2.1319
77	Knowledge of nutritional management in animals.	2.0766
88	Knowledge of animal husbandry.	2.0255
78	Knowledge of environmental management for animal disease prevention.	1.9444
81	Knowledge of physical conditioning to prevent injury and disease in animals.	1.6723
84	Knowledge of principles of animal population management.	1.2298
82	Knowledge of physical rehabilitation methods for animals.	1.2255
85	Knowledge of methods for reproduction, performance, and reproduction management in animals.	.8936



**Content Area 9**  
**Professional and Legal Responsibilities**

<b>Number</b>	<b>Knowledge Statement</b>	<b>Mean Importance</b>
99	Knowledge of legal requirements related to prescribing, dispensing, administration, and disposal of controlled substances.	3.1429
93	Knowledge of legal requirements related to administration of medications to patients.	3.1288
92	Knowledge of legal requirements related to medication prescriptions.	3.1116
103	Knowledge of legal requirements related to veterinary record keeping.	3.1116
117	Knowledge of legal and professional standards related to documentation of veterinary care.	3.0773
111	Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship.	3.0258
113	Knowledge of legal requirements related to informed consent.	2.9483
109	Knowledge of legal requirements related to minimum standards of veterinary practice.	2.9440
116	Knowledge of laws and regulations related to rabies control.	2.9440
94	Knowledge of legal requirements related to judicious use of antibiotics.	2.9013
112	Knowledge of legal requirements related to confidentiality of patient and client information.	2.8627
95	Knowledge of legal requirements related to drug consultation.	2.7468
107	Knowledge of legal requirements related to supervision of registered veterinary technicians and unregistered assistants.	2.7069
100	Knowledge of legal requirements related to handling, storage, and disposal of biohazardous waste.	2.6996
108	Knowledge of legal requirements related to scope of practice of registered veterinary technicians and unregistered assistants.	2.6595
105	Knowledge of legal requirements related to reportable diseases.	2.6266
97	Knowledge of legal requirements related to disposal of medications.	2.5931
102	Knowledge of legal requirements related to radiation safety.	2.5579
110	Knowledge of legal requirements related to standards for veterinary premises.	2.5043
106	Knowledge of legal requirements related to reporting suspected animal abuse or neglect.	2.3562
101	Knowledge of legal requirements related to movement of live animals.	2.1330
96	Knowledge of legal requirements and guidelines related to veterinary use of cannabis.	2.0644
104	Knowledge of legal requirements related to abandonment of animals.	1.9914
98	Knowledge of potential agents of agro- and bio-terrorism.	1.2618
114	Knowledge of legal responsibilities to prevent drug residues in food chain.	1.2403
115	Knowledge of laws and regulations regarding restrictions of performance-enhancing drugs.	.9957

## APPENDIX D | INVITATION TO PRACTITIONERS

[REDACTED]@DCA

**From:** [REDACTED]@dca.ca.gov via SurveyMonkey <member@surveymonkeyuser.com>  
**Sent:** [REDACTED]  
**To:** [REDACTED]@DCA  
**Subject:** We want your opinion

[EXTERNAL]: survey-noreply@mr.surveymonkeyuser.com

## 2019 Veterinarian Occupational Analysis Questionnaire

We're conducting a survey and your input would be appreciated. Click the button below to start the survey.  
Thank you for your participation!

Begin Survey

Please do not forward this email as its survey link is unique to you.  
[Privacy](#) | [Unsubscribe](#)

Powered by  SurveyMonkey

## APPENDIX E | QUESTIONNAIRE

## 2019 Veterinarian Occupational Analysis Questionnaire

### Occupational Analysis of the Veterinarian Profession

Dear Licensed Veterinarian,

Thank you for participating in this study of the veterinarian profession in California, a project of the California Veterinary Medical Board (Board). **For completing this questionnaire in full, you will receive 3 continuing education (CE) credits.** The credits will be issued for fully completed questionnaires approximately 4-6 weeks after the survey closes. To receive these credits, you must enter your veterinary license number at the end of the questionnaire.

The Board is conducting an occupational analysis of the veterinarian profession. The purpose of the occupational analysis is to identify the important tasks performed by veterinarians in their current work and the knowledge required to perform those tasks effectively. Results of the occupational analysis will be used to ensure that the examinations required for licensure as a veterinarian in California reflect current practice. Your participation in the occupational analysis is essential. The Board requires responses from many licensees to achieve representation from different geographic regions of the state and from different work settings.

Please take the time to complete the questionnaire as it relates to your current work. Your responses will be kept confidential and will not be tied to your license or any other personal information. Individual responses will be combined with the responses of other veterinarians and only group data will be analyzed.

For your convenience, you do not have to complete the questionnaire in a single session. Before you exit, complete the page that you are on. You can resume where you stopped as long as you reopen the questionnaire from the same computer and use the same web browser. The web link is available 24 hours a day, 7 days a week.

To begin the survey, please click Next. Any question marked with an asterisk must be answered before you can progress through the questionnaire. Please submit the completed questionnaire by June 30th, 2019.

If you have any questions or need assistance, please contact Brian Knox at [Brian.knox@dca.ca.gov](mailto:Brian.knox@dca.ca.gov).

The Board welcomes your feedback and appreciates your time!

**Part I - Personal  
Data**

The information you provide here is voluntary and confidential. It will be treated as personal information subject to the Information Practices Act (Civil Code, Section 1798 et seq.), and will be used only for the purpose of analyzing the ratings from this questionnaire.

**\* 1. Are you currently practicing as a California-licensed veterinarian?**

Yes

No

**Part I - Personal Data  
(Continued)**

**2. How many years have you been practicing as a veterinarian (i.e., including practice in other states)?**

- 0 to 5 years
- 6 to 10 years
- 11 to 15 years
- 16 or more years

**3. How many years have you been practicing in California as a licensed veterinarian?**

- 0 to 5 years
- 6 to 10 years
- 11 to 15 years
- 16 or more years

**4. Are you currently licensed as a veterinarian outside of California?**

- No
- Yes (please specify)

**Part I - Personal Data  
(continued)**

**5. How many hours per week do you work as a licensed veterinarian?**

- 0 to 10 hours
- 11 to 20 hours
- 21 to 30 hours
- 31 to 40 hours
- 41 or more hours

**6. How many other licensed veterinarians work in the practice where you work?**

- I am the sole veterinarian
- 1 to 3 other veterinarians
- 4 to 5 other veterinarians
- 6 to 10 other veterinarians
- 11 or more other veterinarians

**7. How would you classify the majority of your responsibilities as a licensed veterinarian?**

- Practitioner
- Consultant
- Education/Research
- Management
- Other (please specify)



**8. What best describes your primary employer?**

- Private practice
- Corporation
- Government
- Academia
- Nonprofit
- Other (please specify)

**Part I - Personal Data  
(continued)**

**9. How would you describe your work? (Check all that apply.)**

- Small animal
- Equine
- Food animal
- Mixed practice
- Regulatory
- Academic/research
- Exotic/zoo/wildlife
- Shelter medicine
- Laboratory/Biologic/Pharmaceutical

**10. Which of the following types of patients do you treat? (Check all that apply.)**

- Avian (commercial poultry or fowl)
- Avian (pet bird)
- Cats
- Cattle (beef or dairy)
- Camelids
- Dogs
- Equine (horses)
- Other equine (e.g., donkeys, mules)
- Exotic animal (e.g., amphibians, reptiles, chinchillas, fish, guinea pigs, hamsters, rabbits)
- Sheep and goats
- Swine
- Zoo or wild animals (e.g., nonhuman primates)
- Aquatic or marine
- None, I do not treat animals

Other (please specify)

**11. What describes the location of your primary work setting?**

Urban (more than 50,000)

Rural (50,000 or fewer)

**Part I - Personal Data  
(continued)**

**12. In what California county do you perform the majority of your work?**

- |                                    |                                       |                                     |
|------------------------------------|---------------------------------------|-------------------------------------|
| <input type="radio"/> Alameda      | <input type="radio"/> Marin           | <input type="radio"/> San Mateo     |
| <input type="radio"/> Alpine       | <input type="radio"/> Mariposa        | <input type="radio"/> Santa Barbara |
| <input type="radio"/> Amador       | <input type="radio"/> Mendocino       | <input type="radio"/> Santa Clara   |
| <input type="radio"/> Butte        | <input type="radio"/> Merced          | <input type="radio"/> Santa Cruz    |
| <input type="radio"/> Calaveras    | <input type="radio"/> Modoc           | <input type="radio"/> Shasta        |
| <input type="radio"/> Colusa       | <input type="radio"/> Mono            | <input type="radio"/> Sierra        |
| <input type="radio"/> Contra Costa | <input type="radio"/> Monterey        | <input type="radio"/> Siskiyou      |
| <input type="radio"/> Del Norte    | <input type="radio"/> Napa            | <input type="radio"/> Solano        |
| <input type="radio"/> El Dorado    | <input type="radio"/> Nevada          | <input type="radio"/> Sonoma        |
| <input type="radio"/> Fresno       | <input type="radio"/> Orange          | <input type="radio"/> Stanislaus    |
| <input type="radio"/> Glenn        | <input type="radio"/> Placer          | <input type="radio"/> Sutter        |
| <input type="radio"/> Humboldt     | <input type="radio"/> Plumas          | <input type="radio"/> Tehama        |
| <input type="radio"/> Imperial     | <input type="radio"/> Riverside       | <input type="radio"/> Trinity       |
| <input type="radio"/> Inyo         | <input type="radio"/> Sacramento      | <input type="radio"/> Tulare        |
| <input type="radio"/> Kern         | <input type="radio"/> San Benito      | <input type="radio"/> Tuolumne      |
| <input type="radio"/> Kings        | <input type="radio"/> San Bernardino  | <input type="radio"/> Ventura       |
| <input type="radio"/> Lake         | <input type="radio"/> San Diego       | <input type="radio"/> Yolo          |
| <input type="radio"/> Lassen       | <input type="radio"/> San Francisco   | <input type="radio"/> Yuba          |
| <input type="radio"/> Los Angeles  | <input type="radio"/> San Joaquin     |                                     |
| <input type="radio"/> Madera       | <input type="radio"/> San Luis Obispo |                                     |

**Part II - Task Rating  
Instructions**

In this part of the questionnaire, you will be presented with 99 tasks reflecting the nature of veterinarian practice in California.

Please rate each task as it relates to **your current practice** or **the veterinarian-related tasks performed by the employees that you supervise.**

Your frequency and importance ratings should be separate and independent ratings. Therefore, the ratings that you assign on one rating scale should not influence the ratings that you assign on the other rating scale. For example, you may perform a task frequently, but that task may not be important. Or you may perform a task infrequently, but that task may be very important.

If the task is NOT part of your current practice, rate the task "0" (zero) frequency and "0" (zero) importance. Tasks that you perform frequently should be rated high on the frequency scale and tasks that are important to your work as a veterinarian should be rated high on the importance scale.

Choose the rating that best fits each task.

Please use the scales below to rate the tasks on the following pages.

**FREQUENCY SCALE**

HOW OFTEN do you perform this task in your current practice? Consider all of the practice tasks you have performed over the past year and make your judgment relative to all other tasks you perform.

- 0 – DOES NOT APPLY. I do not perform this task in my current practice.
- 1 – RARELY. I perform this task the least often in my current practice relative to other tasks I perform.
- 2 – SELDOM. I perform this task less often than most other tasks I perform in my current practice.
- 3 – REGULARLY. I perform this task as often as other tasks I perform in my current practice.
- 4 – OFTEN. I perform this task more often than most other tasks I perform in my current practice.
- 5 – VERY OFTEN. This task is one of the tasks I perform most often in my current practice relative to other tasks I perform.

**IMPORTANCE SCALE**

HOW IMPORTANT is performance of this task for effective performance in your current practice? Consider all of the job tasks you have performed over the past year and make your judgment relative to all other tasks you perform.

- 0 – DOES NOT APPLY. I do not perform this task in my current practice.
- 1 – NOT IMPORTANT. This task is not important for effective performance in my current practice.
- 2 – FAIRLY IMPORTANT. This task is somewhat important for effective performance in my current practice.
- 3 – IMPORTANT. This task is important for effective performance in my current practice.

4 – VERY IMPORTANT. This task is very important for effective performance in my current practice.

5 – CRITICALLY IMPORTANT. This task is extremely important for effective performance in my current practice.

**Part II - Obtaining Patient Signalment and History**

**13. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
1. Obtain patient signalment.	<input type="text"/>	<input type="text"/>
2. Identify patient presenting complaints.	<input type="text"/>	<input type="text"/>
3. Obtain duration, severity, and rate of progression of patient condition.	<input type="text"/>	<input type="text"/>
4. Obtain patient past and current medical health history.	<input type="text"/>	<input type="text"/>
5. Obtain patient preventive history.	<input type="text"/>	<input type="text"/>
6. Obtain patient origin, travel history, and disease exposure.	<input type="text"/>	<input type="text"/>
7. Collect information about patient attitude, appetite, elimination, and behavior.	<input type="text"/>	<input type="text"/>
8. Obtain patient diet and feeding history.	<input type="text"/>	<input type="text"/>
9. Obtain patient reproductive, production, or performance history.	<input type="text"/>	<input type="text"/>
10. Collect information about patient housing, environment, and interactions with other animals and humans.	<input type="text"/>	<input type="text"/>
11. Obtain information about management practices (e.g., husbandry, welfare, handling).	<input type="text"/>	<input type="text"/>

**Part II - Performing Patient Physical Examination**

**14. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
12. Evaluate patient demeanor, behavior, and responsiveness.	<input type="text"/>	<input type="text"/>
13. Restrain patient to perform examination.	<input type="text"/>	<input type="text"/>
14. Obtain patient vital signs.	<input type="text"/>	<input type="text"/>
15. Examine patient oral cavity.	<input type="text"/>	<input type="text"/>
16. Examine patient digestive system.	<input type="text"/>	<input type="text"/>
17. Examine patient musculoskeletal system.	<input type="text"/>	<input type="text"/>
18. Examine patient cardiovascular system.	<input type="text"/>	<input type="text"/>
19. Examine patient respiratory system.	<input type="text"/>	<input type="text"/>
20. Examine patient integumentary system.	<input type="text"/>	<input type="text"/>
21. Examine patient nervous system.	<input type="text"/>	<input type="text"/>
22. Examine patient otic system.	<input type="text"/>	<input type="text"/>
23. Examine patient ophthalmic system.	<input type="text"/>	<input type="text"/>
24. Examine patient urogenital system.	<input type="text"/>	<input type="text"/>
25. Examine patient lymphatic system.	<input type="text"/>	<input type="text"/>
26. Determine patient body condition score.	<input type="text"/>	<input type="text"/>
27. Evaluate patient performance and production.	<input type="text"/>	<input type="text"/>



**Part II - Assessing Patient Data**

**15. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
28. Evaluate patient data to determine whether additional information is needed.	<input type="text"/>	<input type="text"/>
29. Identify patient conditions that require emergency management.	<input type="text"/>	<input type="text"/>
30. Develop problem list based on patient history and physical examination.	<input type="text"/>	<input type="text"/>
31. Develop list of differential diagnoses for identified problems.	<input type="text"/>	<input type="text"/>
32. Determine public health risks related to animal disease.	<input type="text"/>	<input type="text"/>
33. Identify animal and population health risks (e.g., genetic, nutritional, environmental).	<input type="text"/>	<input type="text"/>
34. Identify factors that may indicate animal abuse or neglect.	<input type="text"/>	<input type="text"/>

**Part II - Diagnostic Planning and Procedures**

**16. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
35. Identify risks, benefits, and limitations of diagnostic procedures.	<input type="text"/>	<input type="text"/>
36. Formulate diagnostic plans to revise differential diagnoses lists.	<input type="text"/>	<input type="text"/>
37. Collect and submit samples for laboratory diagnostic tests.	<input type="text"/>	<input type="text"/>
38. Perform necropsy.	<input type="text"/>	<input type="text"/>
39. Analyze patient diets and food.	<input type="text"/>	<input type="text"/>
40. Perform diagnostic procedures on patients.	<input type="text"/>	<input type="text"/>

**Part II - Diagnostic Interpretation**

**17. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
41. Interpret patient diagnostic results.	<input type="text"/>	<input type="text"/>
42. Analyze epidemiological data.	<input type="text"/>	<input type="text"/>
43. Formulate working or final diagnoses for patients.	<input type="text"/>	<input type="text"/>
44. Determine patient prognoses.	<input type="text"/>	<input type="text"/>
45. Communicate patient diagnostic findings and prognoses.	<input type="text"/>	<input type="text"/>

**Part II - Treatment Planning**

**18. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
46. Identify risks and benefits of treatment options.	<input type="text"/>	<input type="text"/>
47. Prioritize treatment options and management of presenting problems.	<input type="text"/>	<input type="text"/>
48. Formulate treatment plans.	<input type="text"/>	<input type="text"/>
49. Formulate anesthetic and analgesic plans.	<input type="text"/>	<input type="text"/>
50. Formulate behavior modification plans.	<input type="text"/>	<input type="text"/>
51. Formulate physical therapy and rehabilitation plans.	<input type="text"/>	<input type="text"/>
52. Formulate contagion control plans.	<input type="text"/>	<input type="text"/>
53. Communicate treatment options to clients.	<input type="text"/>	<input type="text"/>
54. Identify indications for referral or consultation.	<input type="text"/>	<input type="text"/>
55. Identify indications for humane euthanasia or slaughter.	<input type="text"/>	<input type="text"/>

**Part II -  
Treatment**

**19. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
56. Prescribe medical treatment for patients.	<input type="text"/>	<input type="text"/>
57. Implement medical treatment for patients.	<input type="text"/>	<input type="text"/>
58. Administer and monitor anesthesia and analgesia.	<input type="text"/>	<input type="text"/>
59. Perform surgical procedures on patients.	<input type="text"/>	<input type="text"/>
60. Perform dental procedures on patients.	<input type="text"/>	<input type="text"/>
61. Apply external therapeutic devices (e.g., bandages, splints, or E-collar) to patients.	<input type="text"/>	<input type="text"/>
62. Perform physical therapy and rehabilitation on patients.	<input type="text"/>	<input type="text"/>
63. Perform emergency and critical care procedures on patients.	<input type="text"/>	<input type="text"/>
64. Evaluate patient responses to treatments.	<input type="text"/>	<input type="text"/>
65. Determine need for modification of patient treatment plans.	<input type="text"/>	<input type="text"/>
66. Perform humane euthanasia.	<input type="text"/>	<input type="text"/>
67. Communicate patient treatment responses and follow-up care to clients.	<input type="text"/>	<input type="text"/>

**Part II - Health Prevention and Management**

**20. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
68. Develop nutritional plans for patients.	<input type="text"/>	<input type="text"/>
69. Develop environmental plans for patients.	<input type="text"/>	<input type="text"/>
70. Develop plans to prevent or control infectious diseases.	<input type="text"/>	<input type="text"/>
71. Develop plans to control parasites in patients.	<input type="text"/>	<input type="text"/>
72. Develop plans to improve patient physical conditioning.	<input type="text"/>	<input type="text"/>
73. Develop physical rehabilitation plans for patients.	<input type="text"/>	<input type="text"/>
74. Develop plans to improve patient dental health.	<input type="text"/>	<input type="text"/>
75. Develop population management plans.	<input type="text"/>	<input type="text"/>
76. Develop reproductive, performance, or production health plans for patients.	<input type="text"/>	<input type="text"/>
77. Develop biosecurity plans.	<input type="text"/>	<input type="text"/>
78. Develop pain management plans for patients.	<input type="text"/>	<input type="text"/>
79. Develop weight management plans for patients.	<input type="text"/>	<input type="text"/>
80. Communicate patient preventive and management recommendations to clients.	<input type="text"/>	<input type="text"/>

**Part II - Professional And Legal Responsibilities**

**21. Please rate the following tasks based on how often you or the employees you supervise perform the task (Frequency) and how important the task is for effective performance (Importance).**

	Frequency	Importance
81. Prescribe, dispense, administer, and dispose of medications and treatments in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
82. Maintain awareness of potential agro- and bio-terrorism agents.	<input type="text"/>	<input type="text"/>
83. Prescribe, dispense, administer, and dispose of controlled substances in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
84. Handle, store, and dispose of biohazardous waste in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
85. Complete documents required for movement of animals.	<input type="text"/>	<input type="text"/>
86. Handle radioactive materials and radiographic equipment in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
87. Maintain complete patient medical records in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
88. Manage abandoned animal cases.	<input type="text"/>	<input type="text"/>
89. Report diseases in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
90. Report cases of suspected animal abuse and neglect as mandated by law.	<input type="text"/>	<input type="text"/>
91. Supervise registered veterinary technicians and unregistered assistants in accordance with Veterinary Medical Board regulations.	<input type="text"/>	<input type="text"/>
92. Manage practice in accordance with laws and regulations related to minimum standards of care.	<input type="text"/>	<input type="text"/>
93. Maintain veterinary premises in accordance with legal requirements.	<input type="text"/>	<input type="text"/>
94. Establish and maintain veterinary-client-patient relationships as required by laws and regulations.	<input type="text"/>	<input type="text"/>
95. Disclose information about patients or clients in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
96. Obtain informed consent for diagnostic testing and treatment.	<input type="text"/>	<input type="text"/>

	Frequency	Importance
97. Manage drug prescriptions for production or performance animals in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
98. Manage patients with rabies in accordance with laws and regulations.	<input type="text"/>	<input type="text"/>
99. Document provision of care in accordance with legal and professional standards.	<input type="text"/>	<input type="text"/>



**Part III - Knowledge Rating  
Instructions**

In this part of the questionnaire, you will be presented with 117 knowledge statements. Please rate each knowledge statement based on how **important** you feel the knowledge is to the effective performance of **your** tasks or the tasks performed by **the employees that you supervise**.

If a knowledge is NOT a part of your current practice, rate the statement "0" (zero) **importance** and go on to the next item.

Use the following scale to rate each knowledge importance.

**IMPORTANCE SCALE**

HOW IMPORTANT is this knowledge for effective performance of tasks in your current practice?

0 – DOES NOT APPLY. This knowledge is not required for effective performance of tasks in my current practice.

1 – NOT IMPORTANT. This knowledge is not important for effective performance of tasks in my current practice.

2 – FAIRLY IMPORTANT. This knowledge is somewhat important for effective performance of tasks in my current practice.

3 – IMPORTANT. This knowledge is important for effective performance of tasks in my current practice.

4 – VERY IMPORTANT. This knowledge is very important for effective performance of tasks in my current practice.

5 – CRITICALLY IMPORTANT. This knowledge is extremely important for effective performance of tasks in my current practice.

**Part III - Obtaining Patient Signalment History**

**22. HOW IMPORTANT is this knowledge for effective performance of tasks in your current practice?**

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
1. Knowledge of problems associated with signalment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Knowledge of client interviewing techniques to obtain patient history.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Knowledge of methods to extract patient information from medical records.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Knowledge of regional animal diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Knowledge of ranges of normal animal behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Knowledge of effects of housing and environment on animal health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Knowledge of effects of interactions with humans and other animals on animal health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Knowledge of effects of management practices on animal health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Knowledge of effects of prior medical history on current health status of animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Knowledge of normal attitude, eating, elimination patterns, and nutritional needs of animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Knowledge of normal growth and development in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Knowledge of normal reproduction, performance, and production parameters in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part III - Performing Patient Physical Examination						
23. HOW IMPORTANT is this knowledge for effective performance of tasks in your current practice?						
	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
13. Knowledge of techniques for evaluating animal demeanor, behavior, and responsiveness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Knowledge of methods for animal handling and restraint.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Knowledge of techniques and procedures to examine animal organ systems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Knowledge of ranges of normal physiological function in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Knowledge of animal physical anatomy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Knowledge of behavioral manifestations of disease and pain in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Knowledge of physiological indicators of abnormal function in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Knowledge of techniques and procedures to examine reproductive, performance, and production parameters in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Knowledge of body conditioning scoring system for animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part III - Assessing Patient Data**

**24. HOW IMPORTANT is this knowledge for effective performance of tasks in your practice?**

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
22. Knowledge of triage methods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Knowledge of indications for euthanasia or slaughter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Knowledge of methods to develop medical problem lists.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Knowledge of methods to prioritize medical problem lists.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Knowledge of differential diagnoses for problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Knowledge of signs of potential animal abuse and neglect.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Knowledge of effects of environment on animal health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Knowledge of effects of nutrition on animal health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Knowledge of effects of population dynamics on animal health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Knowledge of public health risks related to animal diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Knowledge of risk factors for disease transmission.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Knowledge of impact of animal husbandry practices on disease.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Knowledge of infectious diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part III - Diagnostic Planning and Procedures**

**25. HOW IMPORTANT is this knowledge for effective performance of tasks in your practice?**

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
35. Knowledge of risks, benefits, and limitations associated with diagnostic procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Knowledge of methods to formulate diagnostic plans.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Knowledge of methods and procedures for laboratory sample collection and submission.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. Knowledge of methods to perform diagnostic procedures on animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Knowledge of methods and procedures to perform necropsies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Knowledge of methods to evaluate animal diets and food.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Knowledge of storage and handling of diagnostic samples.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part III - Diagnostic Interpretation**

**26. HOW IMPORTANT is this knowledge for effective performance of tasks in your current practice?**

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
42. Knowledge of statistical testing and analysis for evaluating diagnostic and epidemiological data.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Knowledge of methods to interpret diagnostic tests and procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Knowledge of methods to formulate working or final diagnoses for animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. Knowledge of animal disease processes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. Knowledge of methods to assess patient prognoses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Knowledge of techniques to communicate diagnostic findings and prognoses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part III - Treatment Planning**

**27. HOW IMPORTANT is this knowledge for effective performance of tasks in your current practice?**

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
48. Knowledge of effects of treatment options on patients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Knowledge of effects of treatment options on public health and environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. Knowledge of client-related factors that may affect treatment selection.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. Knowledge of methods to prioritize treatment and management options.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. Knowledge of conditions that may require referral or consultation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. Knowledge of treatment options based on diagnosis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. Knowledge of infectious, contagious, and zoonotic diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. Knowledge of methods to control spread of disease.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. Knowledge of anesthetic and analgesic protocols.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. Knowledge of animal physical therapy and rehabilitation methods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. Knowledge of animal behavior modification methods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. Knowledge of techniques to convey treatment options to clients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. Knowledge of interactions, contraindications, and adverse effects of prescribed treatments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. Knowledge of indications for euthanasia or slaughter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part III - Treatment**

**28. HOW IMPORTANT is this knowledge for effective performance of tasks your current practice?**

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
62. Knowledge of emergency and critical care treatment interventions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. Knowledge of methods and procedures for anesthesia and analgesia for animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. Knowledge of methods and procedures for behavior modification in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65. Knowledge of methods and procedures for surgical treatment of animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. Knowledge of methods and procedures for dental treatment of animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. Knowledge of methods and procedures for medical treatment of animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. Knowledge of methods and procedures for applying external therapeutic devices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. Knowledge of methods and procedures for euthanasia.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70. Knowledge of methods and procedures for physical therapy and rehabilitation of animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71. Knowledge of indications to modify treatment plans.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
72. Knowledge of treatment complications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
73. Knowledge of environmental management in the treatment of animal diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
74. Knowledge of therapeutic nutritional management for animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
75. Knowledge of evaluation of patient response to treatment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
76. Knowledge of techniques to communicate patient treatment response and follow-up care to clients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part III - Health Prevention And Management**

**29. HOW IMPORTANT is this knowledge for effective performance of tasks in your current practice?**

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
77. Knowledge of nutritional management in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
78. Knowledge of environmental management for animal disease prevention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
79. Knowledge of methods to prevent transmission of communicable diseases in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
80. Knowledge of methods for parasite control in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
81. Knowledge of physical conditioning to prevent injury and disease in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
82. Knowledge of physical rehabilitation methods for animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
83. Knowledge of methods of preventive dental care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
84. Knowledge of principles of animal population management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
85. Knowledge of methods for reproduction, performance, and reproduction management in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
86. Knowledge of methods and protocols to control, prevent, or eradicate infectious diseases in animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
87. Knowledge of personal protective equipment and decontamination protocols.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
88. Knowledge of animal husbandry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
89. Knowledge of weight management methods for animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
90. Knowledge of pain management methods for animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
91. Knowledge of techniques to communicate patient preventive and management recommendations to clients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part III - Professional and Legal Responsibilities**

**30. HOW IMPORTANT is this knowledge for effective performance of tasks in your current practice?**

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
92. Knowledge of legal requirements related to medication prescriptions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
93. Knowledge of legal requirements related to administration of medications to patients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
94. Knowledge of legal requirements related to judicious use of antibiotics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
95. Knowledge of legal requirements related to drug consultation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
96. Knowledge of legal requirements and guidelines related to veterinary use of cannabis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
97. Knowledge of legal requirements related to disposal of medications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
98. Knowledge of potential agents of agro- and bio-terrorism.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
99. Knowledge of legal requirements related to prescribing, dispensing, administration, and disposal of controlled substances.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
100. Knowledge of legal requirements related to handling, storage, and disposal of biohazardous waste.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
101. Knowledge of legal requirements related to movement of live animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
102. Knowledge of legal requirements related to radiation safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
103. Knowledge of legal requirements related to veterinary record keeping.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
104. Knowledge of legal requirements related to abandonment of animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
105. Knowledge of legal requirements related to reportable diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not Important/Does Not Apply	Somewhat Important	Fairly Important	Important	Very Important	Critically Important
106. Knowledge of legal requirements related to reporting suspected animal abuse or neglect.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
107. Knowledge of legal requirements related to supervision of registered veterinary technicians and unregistered assistants.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
108. Knowledge of legal requirements related to scope of practice of registered veterinary technicians and unregistered assistants.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
109. Knowledge of legal requirements related to minimum standards of veterinary practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
110. Knowledge of legal requirements related to standards for veterinary premises.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
111. Knowledge of legal standards for establishing and maintaining a veterinary-client-patient relationship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
112. Knowledge of legal requirements related to confidentiality of patient and client information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
113. Knowledge of legal requirements related to informed consent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
114. Knowledge of legal responsibilities to prevent drug residues in food chain.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
115. Knowledge of laws and regulations regarding restrictions of performance-enhancing drugs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
116. Knowledge of laws and regulations related to rabies control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
117. Knowledge of legal and professional standards related to documentation of veterinary care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part IV - Continuing Education  
Credit**

**31. To receive 3 CE credits for completing this questionnaire, please enter your veterinary license number.**

**THANK  
YOU!**

You have completed this questionnaire! Thank you for participating!

