

World Aquatic Veterinary Medical Association

Certified Aquatic Veterinary Nurse/Technician (CertAqVNT) Credentialing Program



A WAVMA Member Program

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Background

There is a need for the provision of a well-trained aquatic veterinary nurse/technician workforce that provides services and support, under the supervision of veterinarians, in private practice, aquaculture, public aquaria, research institutes, aquatic animal owners (hobbyists), government agencies and others particularly in light of increasing interest in the health and welfare of aquatic species by the public, availability of in-house and pond-side testing, routine health screening and other issues.

The WAVMA Aquatic Veterinary Nurse/Technician Certification Program seeks to identify the core competency areas or subject matter needed to practice aquatic veterinary nursing/technician, and to recognize those nurses/technicians that have acquired the necessary knowledge, skills and experience through a variety of sources.

Program Administration

The WAVMA CertAqVNT Program is administered by the WAVMA Credentialing Committee, along with the assistance of other Certified WAVMA members who serve as mentors and adjudicators.

The WAVMA Credentialing Committee will review the program at least annually and may revise the description and needs for any KSE Module or subject area, as necessary.

CertAqVNT Process

To be credentialed by WAVMA as a Certified Aquatic Veterinary Nurse/Technician, and utilize the CertAqVNT honorific, individuals must be a WAVMA member, have a nationally recognised Veterinary Nurse/Technician qualification and have demonstrated general knowledge and competency in core subject areas noted below that are currently considered necessary to practice aquatic veterinary nursing.

Individuals that desire to participate in the WAVMA CertAqVNT Credentialing Program are required to:

- Be a current member of the World Aquatic Veterinary Medical Association
- Register for the Program or contact the [WAVMA Administrator](#)).
- Evidence of their nursing/technician qualification must be submitted in English, along with other supporting documents, or be confirmed by their mentor.
- Identify a mentor to assist the registrant through the Program. The potential mentors would be any available WAVMA Certified Aquatic Veterinarian or WAVMA Certified Veterinary Nurse/Technician. Applicants are advised to discuss the process with a mentor prior to registering. A list of potential mentors can be found in the WAVMA Members Directory or via the CertAqVNT webpage.
- Provide the mentor with written evidence of satisfactory completion of each of the core Knowledge, Skills and Experience (KSE) subject areas.
- Petition the Credentialing Committee for recognition of completion of all KSE requirements after the mentor has approved the documentation.

Registration & Petitioning for CertAqVNT

Individuals wanting to participate in the WAVMA CertAqVNT Program will submit an application form, and require proof of qualification, along with a registration fee of US \$250. The application for CertAqVNT will remain active for one year from the date of initial registration. If a candidate does not petition by providing the Credentialing Committee with the evidence of satisfactory completion of KSE requirements for all 8 subject areas within one year, the candidate will be required to submit a new application and fee. Once the applicant has worked with the mentor to produce the documents required to assess the applicant's KSE, the documentation, along with a current CV, will be submitted by the mentor via the online system to the [CertAqV Administrator](#), it will then be reviewed by at least two members of the Credentialing Committee to approve the petition for certification, or the committee may request further documentation from the applicant before approving the petition. The approved petition is then forwarded to the WAVMA Executive Board for issuing of the Certification.

CertAqVNT Re-certification & CEPD Requirements

The CertAqVNT credentials are limited to 5 years from the date of issuance. The certified nurse/technician must submit a renewal form every 5 years along with a recertification fee of \$50.00 US. To renew the CertAqVNT credentials, evidence of at least 50 credit hours of aquatic veterinary nursing/technician

Continuing Education and Professional Development (CEPD) over 5 years is required (i.e. an average of 10 hours per year). Continued WAVMA membership is also a requirement to maintain the CertAqVNT status.

Mentors & Adjudicators

Individuals that have been awarded WAVMA CertAqVNT or CertAqV credentials may be available to serve as mentors to help guide new candidates through the CertAqVNT program (you will be able to select a mentor from those listed in www.wavma.org/directory/search).

At least two individuals awarded WAVMA CertAqVNT/CertAqV (but not the mentor) will serve as adjudicators to evaluate an individual applicant's petition for CertAqVNT and recommend certification or request additional information or documentation from the applicant to fulfil the certification requirements.

The Credentialing Committee members that have been awarded WAVMA CertAqVNT credentials will also be responsible for evaluating non-WAVMA courses and programs as suitable for CertAqVNT credit.

Core Knowledge, Skills & Experience (KSE) Requirements¹

In order to be certified as a WAVMA Certified Aquatic Nurse/Technician (CertAqVNT), applicants will need to demonstrate the Knowledge, Skills and Experience (KSE) using WAVMA approved programs or processes. The participating candidate's KSE will include, but not be limited to the theory, clinical significance, and practical experience in the following areas that are *unique*² to aquatic mammals, amphibians, reptiles, finfish, crustaceans, or molluscs. CertAqVNT candidates are required to be familiar with, and be able to, describe the normal and abnormal aspects of each specific subject that are encountered in general aquatic veterinary practice, comply with the veterinary nursing/technician regulations in their jurisdiction, and know where to locate additional information on the subject. Each specific area is assigned a minimum number of KSE credits³ needed in brackets [], for a total of at least 150 credits.

Required KSE modules:

1. Aquatic Environment and Life Support Systems [35 credits minimum]

Water quality includes all the physical, chemical and biological characteristics of water that regulates its suitability for the health of aquatic organisms and their ecosystem. Poor water quality is often the cause of morbidity and mortality in aquatic animals. Knowledge, skills and experience in this subject matter are critical for practicing aquatic veterinary nursing. Given the intimate relationship that aquatic organisms have with the surrounding environment, a candidate should demonstrate thorough understanding of this environment.

Examples are:

- Chemical stressors and their effect on aquatic animal health/environment:
 - Common chemical water quality abnormalities
 - Techniques for the assessment/monitoring of water quality parameters
 - Interpretation of water quality parameter results
 - Appropriate treatment of water quality abnormalities
 - Toxins and pollutants
 - Effects of medications and therapeutics on water quality
- Physical stressors in the aquatic environment and their effect on aquatic animal health/environment. Including: stocking density, improper husbandry/life-support system, tank/pond design, inter/intra-species aggression, handling and transport

¹ The WAVMA Credentialing Committee is continuously refining specific details for each of these KSEs with the assistance of subject matter experts.

² *Unique* KSEs are those not acquired during a typical pre-nursing or nursing curriculum.

³ KSE Credits are an estimated time (in hours) required to attain an adequate understanding of the subject matter.

- Biological stressors in the aquatic environment and their effects on aquatic animal health
- Species differences in regards to their water quality requirements
- Interaction of various species in the aquatic ecosystem and its effect on aquatic animal health
- Environmental factors that affect the development of disease
 - Whilst demonstrating knowledge of all the above emphasise should be put on the set up, maintenance and safe disinfecting of a hospital tank set up in practice.

2. Taxonomy, Anatomy and Physiology [10 credits minimum]

Candidates should demonstrate knowledge, skills and experience necessary for the practice of an aquatic veterinary nurse/technician of the basic anatomy and physiology of major aquatic animal taxa.

Examples are:

- Taxonomic relationship of aquatic Phyla
- Scientific and common names of significant aquatic animal species
- Anatomy and physiology of organ systems including:
 - Musculoskeletal and integumentary
 - Digestive (gastrointestinal), nutritional physiology
 - Circulatory and Respiratory
 - Osmoregulatory and waste excretion
 - Reproductive and Endocrine
 - Reticuloendothelial and Immune
 - Nervous

3. Husbandry and Industries [15 credits minimum]

Candidate should demonstrate an understanding of the key industry sectors, economics, health issues and husbandry practices associated with the captive maintenance of aquatic animals (e.g., aquaculture, ornamental pet trade, public aquaria exhibits) and with wild harvest of aquatic animals for food and pets.

Examples are:

- Aquaculture Industry – Food sector and Ornamental sector
- Wild Harvest – Food and Ornamental Sectors
- Public Aquaria and Zoo Aquatic Animal Exhibition
- Conservation/Resource management captive breeding programs
- Animal Handling Techniques
- Animal Holding System Design and General Management
- Collection, Transport, Acclimation
- Biosecurity/Quarantine
- Life-Support System Components, Function and Management
- Water Quality Assessment and Interpretation
- Nutrition and Feeding
- Record Keeping and Standard Operating Procedures

4. Pathobiology and Epidemiology of Aquatic Animal Diseases [25 credits minimum]

Candidate should demonstrate an understanding of environmental conditions and pathogens that cause diseases in aquatic animals, the pathological changes that occur in the animals, and the clinical signs of important aquatic animal diseases in order to determine the cause of the disease and the course of action or

treatment required by the veterinarian and assess the risk of contagion. The nurse/technician should not demonstrate or take action to diagnose a disease, but only be able to recognise the factors mentioned above in support of the case veterinarian.

Examples are:

- Disease identification, prevention, control, treatment, eradication decisions.
- Non-infectious diseases:
 - Nutritional deficiencies
 - Water quality/temperature abnormality
 - Toxicity
 - Traumatic injuries
 - Genetic disorders
 - Neoplasia
- Infectious diseases:
 - Viruses
 - Bacteria
 - Fungi
- Parasitic diseases:
 - Protozoa
 - Metazoa
- Epidemiology
- Biosecurity, pathogen exclusion or containment methods.

5. Diagnostics and Treatment of Aquatic Animal Diseases [25 credits minimum]

Candidate should demonstrate a good understanding of the diagnostic procedures and treatments, including fundamental theoretical knowledge, as well as practical experience with clinical and laboratory disease diagnosis by the veterinarian, and treatment of infectious diseases and pathological conditions. The nurse should not demonstrate or take action to diagnose a disease, but only be able to recognise the factors mentioned above in supporting the case veterinarian.

Examples are:

- Principles of Laboratory Diagnosis:
 - Sample collection for laboratory examination
 - Proper shipment of samples for diagnostic purposes
 - Principles of sample custody
 - Quality Assurance and Quality Control (QA and QC)
 - Diagnosis of bacterial infections
 - Diagnosis of viral infections
 - Diagnosis of mycotic infections
 - Diagnosis of parasitic diseases
 - Diagnosis of neoplasia
 - Diagnosis of traumatic injuries
 - Diagnosis of toxicities
- Principles of Prophylaxis and Disease Control
- Therapeutics, Biologics, Vaccines and other treatment approaches

6. Clinical Nursing Experience and Client Communications [25 credits minimum]

- Candidate should demonstrate competency with basic nursing procedures, diagnostic tools and techniques, and with client or industry communication. The applicant must ensure they abide by their local jurisdiction regulations (e.g. in the UK, the RCVS Code of Conduct), and ensure that any practical experience gained is all under the direction and supervision of a licenced/register veterinarian. The applicant may want to ask the veterinarian supervising the practical task, to produce a written statement for the applicant to submit as evidence, to show the veterinarian involved is happy the applicant is competent demonstrating the relevant skill.

Examples are:

- Clinical Examination, including:
 - Taking a case history adapted to aquatic animals (e.g., include water quality)
 - Physical examination techniques
 - Blood collection and analysis
 - Examination of cytology & biopsy wet mounts
 - Post-mortem examination
- Sedation/Anesthesia
- Carrying out imaging techniques
- Preparation for surgical procedures
- Common therapeutic approaches
- General Case management
- Client Communications with aquarists, aquaculture producer/farmers, wild animal collectors, facility managers, exporter/importer/wholesaler, retailer and hobbyist/pet owners.

7. Legislation, Regulations, Public Health, Zoonotics [5 credits minimum]

Candidate should demonstrate knowledge of the legislation and regulations pertinent to the practice of aquatic veterinary nursing/technician as well as an understanding of public health

Examples are:

- The etiology, transmission, treatment and control of aquatic zoonotic diseases

8. Principles of Aquatic Animal Welfare [10 credits minimum]

Candidate should demonstrate knowledge of current issues related to aquatic animal welfare and an ability to assess the welfare status of key aquatic species.

Examples are:

- General topics in aquatic animal welfare that are of concern to aquaculture industry, ornamental industry and hobbyists, research, resource management, zoos and aquariums.
- Key legislation, regulations, policies, and professional societies' statements about aquatic animal welfare.
- Humane handling and euthanasia methods of aquatic animal species associated with the fishing industry, wildlife, aquaculture, ornamental trade, zoos, public aquaria and research.

Assessing the Necessary KSEs

Individuals may attain WAVMA credit for the CertAqVNT requirements through verification of the satisfactory completion of educational or training programs specifically focused on the above KSE subject areas. This education can be from academic training programs, lectures, seminars, self-study, publication or additional methods listed below, or from other relevant experiences of the candidate upon approval of the WAVMA Credentialing Committee.

The candidates will document the necessary KSEs obtained from their education and training by compiling a list of classes, lectures, education and other training or experience for assessment by their mentor. Once sufficient evidence of knowledge and skills in each subject area is compiled and reviewed by the candidate's mentor, it will be presented to members of the Credentialing Committee for review. If the committee determines that additional training or documentation is necessary, that information will be provided to the candidate to allow completion of the certification process. Candidates that provide complete documentation of sufficient knowledge, skills and experience will be certified as an Aquatic Veterinary Nurse (CertAqVNT).

Candidates may obtain credit points from any combination of the educational sources listed below. This will help ensure that a wide variety of skills and experiences are obtained in each KSE subject area. A minimum of 150 credit points from the listed subject areas will be necessary for certification. A combination of KSEs obtained from the below educational sources to reach a minimum of 150 points will be adequate for certification, however, the minimum number of credit points must be met for each KSE subject area, as described in the KSE section.

A. Continuing Education and Professional Development (CEPD)

The candidate will receive 1 point per hour of CEPD toward certification requirements. CEPD must be in the field of aquatic veterinary medicine, and preferably from a WAVMA-approved CEPD program. A copy of the CEPD certificate and course information needs to be included in the certification documentation.

EXAMPLE: If a candidate received a total of 8 CEPD hours during a veterinary conference, the list of topics presented at the lectures is required. Given that a sum of CEPD hours may encompass more than one KSE subject area (e.g. Pathobiology or Aquatic Environment) the candidate should suggest the KSE subject areas to apply the CEPD credit to (e.g. 5 points to Pathobiology and 3 points to Aquatic Environment KSE subject area).

B. Academic Programs or Courses (University/College Level)

The candidate will receive 20 points per week of a of FULL-TIME (40 hours) clinical academic veterinary externship rotation in the field of aquatic veterinary nursing/technician or for an extensive laboratory and lecture based course in an area of aquatic veterinary nursing/technician. Shorter University based courses will be treated as CEPD (see above). The candidate's mentor will assist in evaluating the credit points for each program.

EXAMPLE: A 3-week full-time clinical nursing/technician rotation in any area of aquatic animal medicine during a veterinary nursing/technician curriculum will provide a candidate with a total of 60 points. A copy of the syllabus and the number of points to be applied to each KSE subject area needs to be included in the documentation package.

A WAVMA recognized extensive course in aquatic animal nursing/technician that involves lectures, diagnostic laboratory and clinical nursing/technician experience can earn up to 20 points per week of full-time courses.

Veterinary nursing/technician students performing externships in aquatic veterinary medicine while achieving their nursing/technician qualification will receive 20 points per week of full-time externships in aquariums or other programs of aquatic veterinary medicine.

C. Post-qualification Academic Training (University Degrees, Internships, Residencies & Other Programs)

The WAVMA Credentialing Committee will review the aquatic veterinary nursing/technician relevance of post qualification academic degrees (MSc/PhD) and training information (Internship, Residency,) provided by the candidate and the mentor will assist the candidate in determining the credit points based on the relevance of

the program to fulfil the KSE subject area requirements. The candidate will need to provide a description on the KSE subject areas that were part of the post-veterinary academic training.

EXAMPLE: The candidate may receive up to 50 points for one year of full-time veterinary nursing/technician internship or residency in a public aquarium focused on aquatic animal medicine. The candidate may receive up to 75 points for completion of a Master's program with a focus on aquatic animal medicine. The candidate may receive up to 100 points for completion of a PhD program with a focus on aquatic animal medicine.

The candidate may receive up to 75 points for completion of a Master's program with a focus on aquatic animal medicine. The candidate may receive up to 100 points for completion of a PhD program with a focus on aquatic animal medicine.

D. Literature Self-Study and Online Education

One point will be given for each journal article read or online webinar watched (based on equivalent of one hours study). The journal article or program title and author will be listed in the candidate's documentation. Books or book chapters will be given points based on 1 point per book chapter, up to 10 points per book studied. List the book title, chapter and author in the appropriate KSE section of the documentation.

E. Experience, Case Logs & Essays

The WAVMA Credentialing Committee will review the candidate's experience based on the candidate's written description of experiences in aquatic veterinary nursing, case logs or reports. A letter of reference from an employer, client or co-worker can be used as documentation for the candidate's nursing experience. The candidate will need to provide a description of the KSE subject areas that were part of their experience. The candidate's mentor will assess the experience and help determine the appropriate KSE area. Written case reports describing the candidate's involvement with examining, diagnostic testing and treating an aquatic animal can also be used to obtain credit for experience. Five credit points will be given for each case log or report that is countersigned by a veterinarian.

Candidates are expected to demonstrate they have acquired practical experience across more than one species. However, it is recognised that currently obtaining extensive experience or numerous case work may be difficult due to lack of training opportunities e.g. geographical location. For those candidates wishing to take the CertAqVNT and **can demonstrate** a difficulty in acquiring practical experience, to their mentor, then it would be acceptable to submit a referenced essay of either 1000 or 2000 words demonstrating the appropriate theoretical knowledge. Each essay would be worth 5 credits (1000 words) or 10 credits (2000 words). However, it is preferable that candidates can demonstrate practical experience of a minimum of 25 KSE or 5 case reports.

EXAMPLE: The candidate was employed full-time in a private practice. Candidate presents a total of 5 clinical nursing case reports to the WAVMA Credentialing Committee as part of the application. After review for acceptance, the candidate would receive 25 credits for these case reports toward certification. The applicant must ensure they follow local jurisdiction regulations (e.g. the RCVS Code of Conduct) and ensure that any practical experience gained is all under the direction and supervision of a licenced/registered veterinarian. The applicant may want to ask the veterinarian supervising the practical task, to produce a written statement for the applicant to submit as evidence, to show the veterinarian involved is happy the applicant is competent demonstrating the relevant skill.

F. Publications & Presentations in Professional Meetings

The candidate will receive points for publication of peer-reviewed journal articles, reviews, case reports, books or book chapters, and oral presentations at professional meetings. The candidate will provide copies of publications to the WAVMA Credentialing Committee for evaluation. Publications will be given 5 points per published article, review, or case report; 10 points per published peer-reviewed journal article, or for editing a multi-author book or writing a book chapter; and up to 40 points for authoring a complete aquatic medicine related book.

Professional presentations will be given 1 point per 15 minutes for brief presentation times, and 5 points per hour for longer presentations. Educators can use their teaching of classes related to aquatic veterinary

medicine as professional presentation for credit (i.e., 5 points per hour for each unique lecture; repeating the lecture multiple times does not confer additional credits). Describe which KSE subject area each point would be attributed to in the credentialing documentation.

Summary of KSE Sources and their Credits

- A. Continuing Education and Professional Development (CEPD) classes/lectures**
Veterinary Conferences; University-based short courses 1 hour = 1 credit
- B. Academic Programs or Courses (University Level)**
Full-time clinical academic veterinary externship rotation
WAVMA recognized extensive course in aquatic animal medicine
2 class hours = 1 credit; or 20 points per week (e.g., 40-hour week = 20 credits)
- C. Post-Qualification Academic Training (Degrees, Internships, Residencies, Certification)**
Intern/Residency= up to 50; MS=up to 75; PhD/Board Certification=up to 100 credits
- D. Journal / Literature Self-Study and Online Education**
Journal Article/Webcast lecture=1 credit; Book=1 credit/chapter up to 10 credits/book
- E. Clinical Experience, Case Logs & Essays**
Case Report =5 credits per case
Documentation/Letter of Clinical Experience=up to 50 credits (evaluate with mentor)
Referenced Essay 1000 words = 5 credits
Referenced Essay 2000 words = 10 credits
- F. Publications & Presentations in Professional Meetings**
Published article=5 credits; Published Peer-reviewed article=10 credits;
Published case report or review=5 credits
Editing a multi-author book=10 credits; Writing a Book Chapter=10;
Writing a Complete Book=10 per chapter up to 40 credits;
Short oral presentations at professional meetings=1 point per 15 minutes
Long oral presentations at professional meetings=5 points per lecture hour
Teaching University-level Academic classes=5 credits per lecture hour

Mentors & Adjudicators

Members of the Credentialing Committee will evaluate all applications for certification. A mentor is selected during the application process. All current CertAqV and CertAqVNT are listed at www.wavma.org/directory/search. The mentor will review the applicant's KSE documentation and when it meets the minimum requirements the mentor will submit the KSE form along with the applicants current CV, via the online system, to the [CertAqV Administrator](#) who will present it to the Credentialing Committee for adjudication by at least two other members. Once approved, the WAVMA Executive Board will be notified to confer the Certified Aquatic Veterinary Nurse/Technician title to the applicant. On a periodic basis, certified individuals will also be asked to evaluate the Program and revise the description and needs for any KSE Module or subject area.

For more information contact [CertAqV Administrator](#) or [WAVMA Administrators](#)