

**United States
Commercial Aquaculture Health Program Standards
(CAHPS)**

Concept Paper

Introduction

The voluntary Commercial Aquaculture Health Program Standards (CAHPS) establish a framework for the improvement and verification of the health of commercially farmed aquatic animals produced in the U.S. Principles outlined in the CAHPS provide for early disease detection, surveillance, reporting, and response for the control of aquatic animal pathogens--especially those reportable to the World Organization for Animal Health (OIE)--and to prevent their dissemination via aquatic animal movement and/or trade.

The CAHPS are needed because of increasing demand from international markets and trading partners for improvements in aquatic animal health disease detection, reporting, control infrastructure, and health verification in the U.S. In conjunction with existing Federal and State authorities and efforts, this framework provides a model upon which commodity or pathogen-specific standards may be developed. Voluntary adoption of CAHPS will support various business objectives including actions to protect commercial aquatic animal livestock from disease, expand aquaculture business opportunities, and improve resource protection and environmental sustainability.

The principles of CAHPS described in this document were developed through the ongoing collaborative effort of the National Aquaculture Association (NAA), representing domestic commercial aquaculture industry, and the United States Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS). The CAHPS program recognize VS as the lead Federal agency responsible for the protection and promotion of the health of animals in commercial aquaculture and acknowledges that a number of other State and Federal agencies have similar responsibilities for aquatic resources. Moreover, it recognizes that at times, these interests may overlap between agency authorities. VS' role is central to domestic and international farmed aquatic animal health discussions and negotiations, respectively, and for certifying the health of commercial aquaculture animals and products under the authority afforded them in the U.S. Animal Health Protection Act. VS is recognized by the OIE as the Competent Authority for animal health in the U.S. VS will formally recognize satisfactory participation in this voluntary program; and will provide oversight in its management.

The CAHPS recognize that there are regional differences in aquatic animal pathogen prevalence and encourage scientifically valid risk analysis when setting any aquatic animal pathogen control standards and regulations. For maximum national benefit from the CAHPS, industry, VS, other Federal agencies, and States must work together. CAHPS may be used to provide a consistent approach to harmonize health regulations for aquatic animal movement. A singular approach to verifying health unifies aquatic animal health protection both for commercial industry and natural resources.

While CAHPS was developed to implement the National Aquatic Animal Health Plan (NAAHP) for commercial aquaculture, these program standards may be utilized as a tool or template to aid other Federal and State authorities when considering public resource protection, management and interstate movement of wild aquatic animals and/or their products. CAHPS encourage the sound aquatic animal health management of natural aquatic animal resources to help further protect the domestic commercial aquaculture industry.

Implementing CAHPS principles will promote the rapid identification of economically and biologically important diseases and their causative agents. The CAHPS recognize that not all pathogens are of economic or public resource significance. CAHPS intend to provide flexibility to enable rapid detection and response to endemic, emerging, and foreign aquatic animal diseases such that deleterious impacts on aquatic animal populations, farmed and/or wild, or on trade are reduced or eliminated. In the event an OIE listed pathogen is confirmed in wild populations in close proximity or in waters shared with a CAHPS participating facility, APHIS will work with State and/or Federal agencies with authority over natural resource animals/environment to identify and mitigate any risks to the commercial aquaculture facility.

Commercial aquaculture sites participating in CAHPS will implement the five principles of CAHPS to be recognized as an “establishment”. Establishments may further elect to become recognized as “disease free for a specific pathogen” or “known health status for a specific pathogen” through the designation of **zones** or **compartments** that would be determined at the country level under APHIS leadership and negotiation with trading partners. Establishments seeking zone or compartment recognition must have biosecurity risk mitigation strategies and specific pathogen surveillance plans developed in conjunction with APHIS.

The CAHPS do not represent a Federal regulatory program and are not intended to meet the needs of every aquaculture business operating in the U.S. The standards outline a series of practices that promote animal health and enhance individual farm biosecurity, and most importantly, describe methods that may assist commercial aquaculture businesses engaged in movement and/or trade of aquatic animals. The intent is to establish common national definitions and provide model approaches for effective and meaningful aquatic animal health/pathogen management.

These written program standards comprise a living document, responsive to changes in scientific understanding about biosecurity and aquatic animal health. This voluntary, nonregulatory approach can be adjusted for evolving technologies, scientific knowledge and pathogens without many of the constraints of the regulatory process. With time, elements of the CAHPS may serve as a model for future regulations and pathogen response programs.

The five CAHPS principles that make up these program standards are:

1. Aquatic Animal Health Team;
2. Risk Characterization and Management;
3. Surveillance;
4. Investigation and Reporting, and;
5. Response.

Participation & Principles

To participate in CAHPS, commercial aquaculture sites must implement each of the five CAHPS principles on their site(s). The principles that make up these program standards for commercial aquaculture are: 1) aquatic animal health team; 2) risk characterization and management; 3) surveillance; 4) investigation and reporting; and 5) response. The degree of implementation of each principle will vary depending on a number of elements including but not limited to commodity-type, species, risk level, production methods, and business needs.

This section covers how a commercial aquaculture site may participate in CAHPS by implementing the five CAHPS principles and developing a site specific health plan.

Once all principles are implemented and a site-specific health plan is written, the site will be recognized as a CAHPS Establishment and given a unique identifier. Testing requirements for movement still may be necessary if authorities--domestic and/or international--do not recognize participation in CAHPS as sufficient to document animal or population health status.

Participation

The competitive advantage of participating as a CAHPS Establishment is to be able to make claims about animals that are considered low risk for certain pathogens. Such claims are possible because a participating **Establishment** has voluntarily taken and documented steps to implement each of the five principles.

Establishment

Implementing the principles of CAHPS on an aquaculture site establishes the infrastructure that improves and documents animal health and related animal health management practices and communications. A CAHPS aquaculture site, referred to as an **Establishment**, may be vulnerable to health risks, may be in a region where the health status of wild populations is unknown, and may be considered as “open” to the environment. These issues are mitigated by the working partnership with the **Establishment** owner and an engaged, knowledgeable aquatic animal health team, which leads site-specific risk evaluations, proposes sound risk mitigation management strategies, and develops an appropriate pathogen-specific surveillance plan complete with disease investigation triggers. All these factors lower the risk of pathogen entry to the site and establish a status of low risk for animals managed under that infrastructure.

Participation as a CAHPS **Establishment** requires (1) the implementation of the five principles of the program standards, and (2) a written site-specific health plan developed with the input of the aquatic animal health team.

Beyond Establishment: Zones and Compartments

CAHPS recognize that some **Establishments** may need to demonstrate disease-freedom status for specific pathogens or establish a known health status with mitigations. Demonstrating these claims requires infrastructure beyond the boundaries of the actual production site and/or additional integrity and oversight by VS as well as cooperation from State authorities. A commercial aquaculture site that is a CAHPS **Establishment** must work with their aquatic animal health team, local and/or regional cooperators (e.g., industry partners, States, tribes, Federal agencies) and APHIS to create a **Zone**; alternately, an **Establishment** may work with their aquatic animal health team and VS to establish a **Compartment**. Sites pursuing these recognitions will partner with Federal and State authorities to meet additional criteria such as those that are equivalent to the OIE’s “basic biosecurity conditions” and OIE’s “self-declaration of freedom from disease” as well as any other requirements agreed on with applicable trading partners. Not all **Establishments** participating in the program will want or need to become a zone or compartment. The following section describes and compares the benefits of an establishment voluntarily working towards having their **Establishment** categorized as either a **Zone** or **Compartment**. Becoming a **Zone** or **Compartment** will take time and investment for all parties involved.

Basic biosecurity conditions as defined by the OIE:

“a set of conditions applying to a particular disease, and a particular zone or country, required to ensure adequate disease security, such as:

- the disease, including suspicion of the disease, is compulsorily notifiable to the Competent Authority; and an early detection system is in place within the zone or country; and import requirements to prevent the introduction of disease into the country or zone.”

Zone

A **Zone** is a region that shares some barrier feature, such as, but not limited to, a shared hydrological unit, climate, or geography and is in proximity to the **Establishment**. The **Establishment** works with the State and others in the region on specific pathogen surveillance, and information sharing. Knowing regional information helps all **Establishments** in the **Zone** to identify risks to their populations and design appropriate biosecurity practices and surveillance to support and make claims about the status of specific pathogens both on **Establishments** and in the **Zone**.

Participation as a **Zone** enables the **Establishment** to claim a freedom of disease status or establish a known health status with appropriate mitigations. **Establishments** within a **Zone** may be able to reduce testing through cooperation with regional partners (e.g., industry, State, Federal entities). The competitive advantage at this level is to be able to participate more easily in international trade because the **Establishment** may claim freedom from specific pathogens (disease freedom status) through surveillance conducted on the site and the region as well as the implementation of the other CAHPS principles on the site.

Participation as a **Zone** allows the participant to (1) claim--by pathogen--a stable disease freedom status, in accordance with OIE guidelines, and (2) reduce and prioritize ongoing testing

requirements through partnerships within the region. **Establishments** and partner regions identify regional boundaries, pathogen status, introduction pathways, natural and applied mitigations, and management systems impacting aquatic animal health. They build on this knowledge to enable efficient and effective surveillance and response.

Regional status with regards to disease or pathogen prevalence and protections play a key role in allowing the **Establishment** to make specific health claims. Creation of a **Zone** requires partnership with other commercial aquaculturists, aquaculture associations, State/Federal, or other fish and wildlife agencies with authority or leadership over those resources.

Compartment

A **Compartment** is an **Establishment** where the pathogen prevalence in the region around the site may be known or unknown but the site has a relatively low level of connection to its surroundings and meets the OIE definition of a **Compartment** and “basic biosecurity conditions” as described by the OIE.

Compartment biosecurity and surveillance complies with OIE guidance for compartments, and as such is particularly suited to support opportunities for international trade.

The benefit of a **Compartment** is to enable the **Establishment** to claim a stable disease freedom status for specific pathogens or establish a known health status with appropriate mitigations. A **Compartment** typically has elevated biosecurity, and some risks are decreased, and over time surveillance may be reduced. The competitive advantage at this level is to allow **Establishments** to claim, by pathogen, a stable disease freedom status, in accordance with OIE guidelines. Assurance is based on surveillance done at the site, strict biosecurity practices, as well as the implementation of the other CAHPS principles.

The difference between a **Zone** and a **Compartment** is that the latter is less reliant on the health status of the region. For a **Compartment** pathogen introduction pathways are predominantly controlled by the **Establishment** and the mitigations established for management of these risks. For both of these designations, the risk of pathogen introduction and pathogen-specific surveillance often can be significantly reduced over time based on the level of historical surveillance and data sharing, if needed.

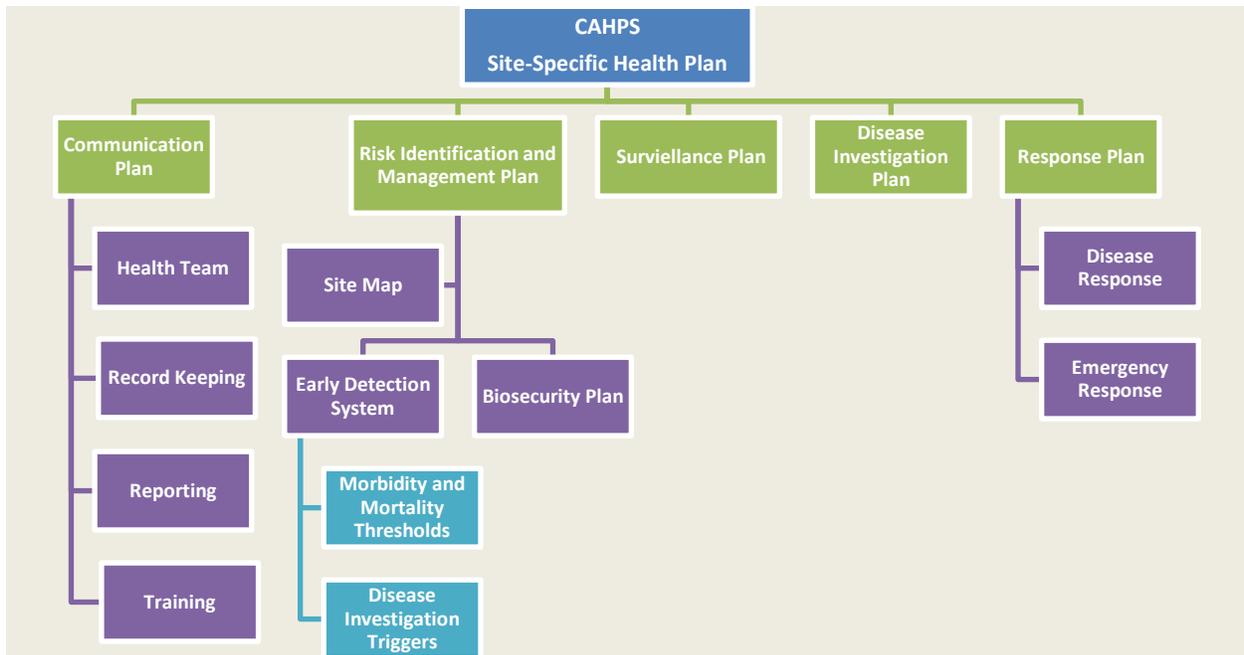
Site-Specific Health Plan

Each CAHPS **Establishment** must have a written site-specific health plan. The plan is a living document, reviewed annually (or as events warrant change) and updated every five years. It is created in partnership with the **Establishment's** health expert panel (discussed later in this document in the Aquatic Animal Health Team section).

Each health plan will vary depending on commodity, production methods, and pathogens of concern. However, all plans should cover the elements related to the CAHPS principles, each of which is discussed in greater detail in the sections that follow:

1. Health Team Communication Plan
 - a. Record Keeping
 - b. Reporting

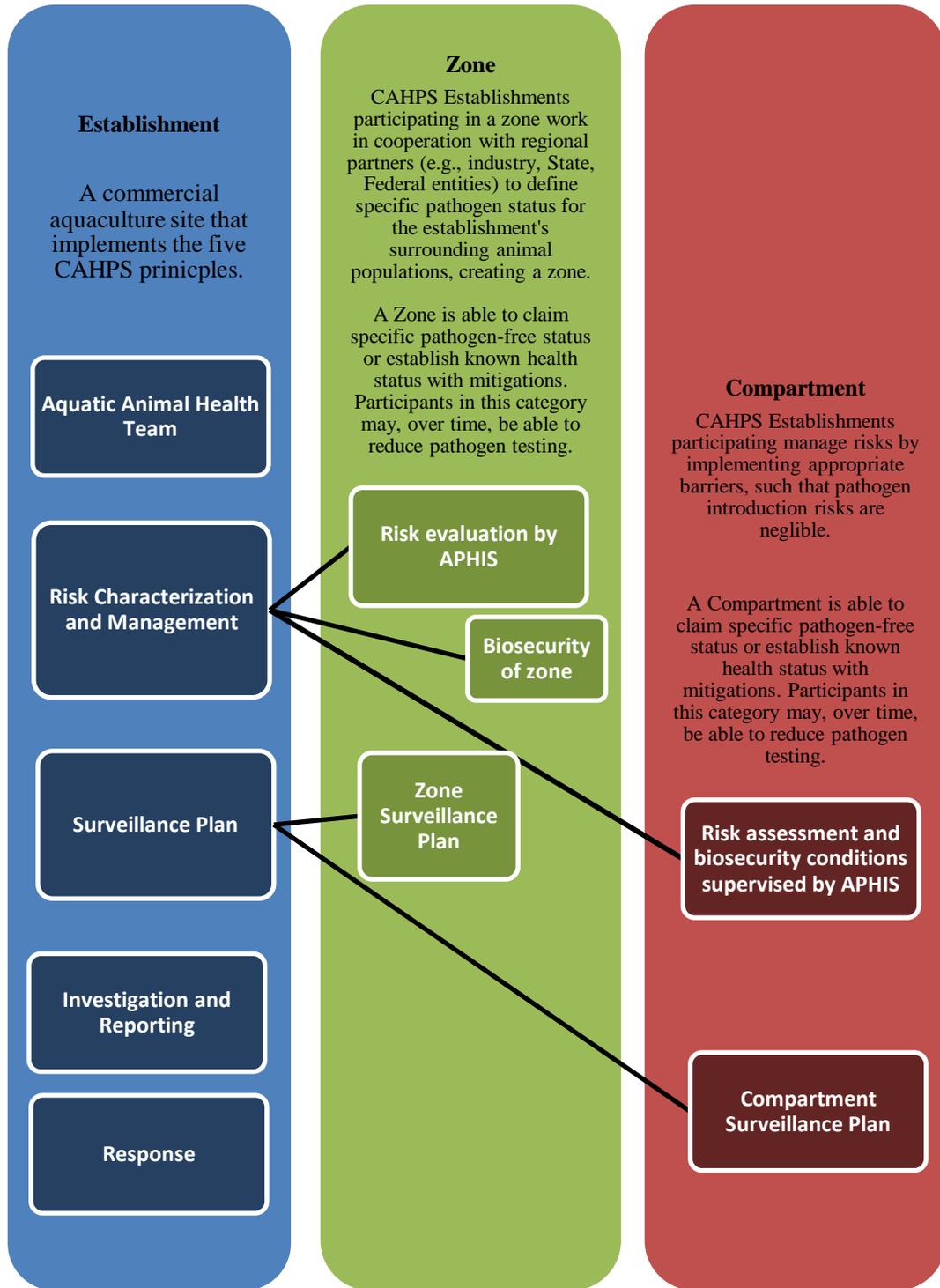
2. Risk Management Plan
 - a. Early Detection System
 - b. Biosecurity Plan
3. Surveillance Plan
4. Disease Investigation Plan
5. Response Plan
 - a. General disease response
 - b. Emergency response



All **Establishment** personnel should be familiar with the overall plan. A signature page for personnel authorizing the plan should be provided. Signatures should include farm management, applicable farm aquatic animal health personnel, APHIS-accredited veterinarian, participating laboratory clinician, and (on request) VS aquaculture staff. The entire plan must be available for review during site visits by APHIS.

Note: All site-specific health plans will be deemed proprietary business confidential documents and treated as such by APHIS accredited veterinarians and APHIS VS staff. These plans may be reviewed on site but not removed or copied unless authorized by the CAHPS participants.

Understanding CAHPS



CAHPS Principles

To become a CAHPS **Establishment** a commercial aquaculture site must implement each of the five following principles of these program standards. The extent to which each principle is implemented will vary from site to site.

Aquatic Animal Health Team

CAHPS require that a commercial aquaculture facility utilize the expertise of aquatic animal health and aquaculture professionals to assist with activities that impact animal health. This team of experts may be composed of American Fisheries Society (AFS) certified professionals, APHIS accredited veterinarians, diagnostic laboratory representatives and other knowledgeable subject matter experts. The **Establishment** will designate a leader of this expert team.

This team will assist and advise **Establishment** management in determining pathogens of concern and conducting risk characterization and management (including drafting a biosecurity plan), as well as help identify early signs of disease, select or design an appropriate surveillance plan, and lead disease investigation and response as needed. This team should also develop **Establishment** specific training for personnel. **Establishment** personnel are responsible for reporting and maintaining open communication with VS and other appropriate entities. It is the responsibility of the CAHPS participant to ensure that the professionals working on their designated aquatic animal health team communicate with each other and all are knowledgeable of the health status of animals on the **Establishment** at all times.

This section outlines the five principles that comprise these program standards:

1. Aquatic Animal Health Team;
2. Risk Characterization and Management;
3. Surveillance;
4. Investigation and Reporting, and;
5. Response.

Risk Characterization and Management

Risk characterization and the development of appropriate management practices will guide a CAHPS **Establishment** in determining pathways that present vulnerabilities to the health of cultured animals on the site as well as appropriate strategies to prevent the introduction and/or spread and/or release of pathogens of concern at the site. This principle requires the CAHPS **Establishment** to work with their aquatic animal health team to develop mechanisms and training for early disease detection and establish site-specific thresholds that trigger a disease investigation. In addition, a written biosecurity plan will be drafted to identify the risk pathways and mitigation practices for all participating options.

Surveillance

The sampling and surveillance strategies for pathogens of concern will depend on management objectives (on site security, interstate movement of live animals, and international trade) and the susceptibility of the species being cultured. If a site cultures species that are susceptible to OIE-listed pathogens, then surveillance plans and analyses must address these pathogens.

Establishments may also identify other specific pathogens of concern for the species being cultured and construct surveillance for those pathogens as appropriate. Participation in CAHPS does not supersede or negate any health requirements established by trading partners, domestic or international. If an **Establishment** needs to conduct certain tests for animal movement those pathogens and sampling strategies must be met to ensure trade. CAHPS surveillance is structured to comply with OIE guidelines (OIE Code and Manual); therefore, it should provide solid evidence on which to demonstrate health status to trade partners.

Investigation and Reporting

When morbidity and/or mortality rates exceed established **Establishment** thresholds (as established by the health team) the **Establishment** must initiate a disease investigation to determine the cause of the problem. Disease investigations will vary depending on the scope, pathogenicity, and specific pathogen suspected. If an **Establishment** or its AAHT believe, through the use of diagnostics, that an OIE-listed pathogen may be the cause of disease or present on the site, they will notify the appropriate State and/or Federal authorities. VS will notify trading partners and/or alert the OIE after the finding has been confirmed. Not all OIE-listed pathogens must be immediately reported to the OIE.

Response

CAHPS **Establishments** must put in place an aquatic animal health management infrastructure (i.e., technical expertise, risk management) capable of identifying and responding to pathogen findings. The response to a suspect or initial finding of an OIE-listed pathogen or significant emerging disease outbreak will be led by VS and appropriate State agencies in collaboration with the CAHPS **Establishment**. Responses to pathogens of regional concern (e.g., State-reportable, but not OIE reportable), will be handled by the **Establishment** in collaboration with appropriate State officials.

Responses to less significant disease outbreaks may be handled by the **Establishment** management in collaboration with their aquatic animal health experts and are not required to incorporate all actions that would be considered for an OIE-listed or emerging pathogen outbreak. A critical element of response is how the **Establishment** management communicates the information to personnel as well as to industry partners, State and/or Federal authorities if necessary or required.

At a Glance: Summary of CAHPS			
	<i>Establishment</i>	<i>Zone</i>	<i>Compartment</i>
Implement all five CAHPS principles	Yes	Yes	Yes
Develop a written site specific health plan	Yes	Yes	Yes
Aquatic Animal Health Team (AAHT)	AFS certified professional Accredited Veterinarian* Subject Matter Experts	Accredited veterinarian* AFS certified professional Subject Matter Experts	Accredited veterinarian* AFS certified professional Subject Matter Experts
Risk Characterization and Management	Biosecurity audit by AAHT	Biosecurity audit for the site by VS, and risk evaluation for the region	Risk assessment and biosecurity audit by VS
Risk Mitigation	Site health plan	Site health plan; basic biosecurity conditions, regional barriers and regulations to reduce opportunities for pathogen introduction	Site health plan; basic biosecurity conditions; site mitigations to preclude pathogen introduction
Surveillance	Early detection systems; Routine testing and/or surveillance	Early detection systems and risk-based surveillance to substantiate disease freedom for a pathogen status for the establishment and the zone Surveillance plan reviewed by VS	Early detection systems and risk-based surveillance to substantiate disease freedom for a pathogen status for the compartment Risk mitigations and surveillance plan reviewed by VS
Cooperation Needed for Surveillance of Surrounding Zone	No	Yes	Maybe
Oversight of Sample Collection	Site personnel AFS FP or AHHI or Accredited veterinarian	Accredited veterinarian	Accredited veterinarian
Pathogen Reporting for OIE listed pathogens and diseases	Yes	Yes	Yes

* At least one accredited veterinarian must be a member of the AAHT