

Advancing Animal Disease Traceability in Virginia

Strategic Plan for 2019-2022 (revised 6/3/2019)



Purpose

This document outlines the strategic direction and major goals of the Animal Disease Traceability (ADT) program in the Commonwealth of Virginia from 2019 to 2022 as administered by the Virginia Department of Agriculture and Consumer Services (VDACS). The Virginia State Veterinarian and Office of Veterinary Services (OVS) are responsible for administration of this program, within regulatory guidelines established by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA-APHIS-VS) and subject to applicable federal and state laws. Funding is provided through annual cooperative agreements with USDA-APHIS-VS and appropriations from the Virginia General Assembly.

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Additional information is available on the following web sites as of January 2019:

<http://www.vdacs.virginia.gov/animals-animal-identification.shtml>

<http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/animalhealth>

Background

The capability to efficiently and effectively deal with livestock diseases of concern when they occur is not only important to the health of livestock populations in Virginia, but is also important in supporting rural economies, maintaining interstate and international trade and increasing consumer confidence in food production systems. Unfortunately, due in large part to our success in eradicating or reducing the impact of some livestock diseases in the United States, relatively few animals that are not involved in active disease investigations are being tested in comparison to 15 to 20 years ago. As the incidence of some diseases (e.g., brucellosis) and “first-point” testing of livestock for diseases has declined, the emphasis on tagging animals with official, traceable identification has also declined in many sectors of the livestock industry. The re-emergence of diseases such as bovine tuberculosis in several states over the past ten years as well as intense concern over foreign animal diseases such as foot-and-mouth and BSE have brought the issue of disease traceability back to the forefront as a concern that needs to be addressed by the livestock industry and public animal health organizations.


The introduction of the National Animal Identification System (NAIS) in 2004 was an attempt by USDA to reverse the trend discussed above and increase the use of new tagging systems and technologies by U.S. livestock producers. The Virginia Department of Agriculture and Consumer Services (VDACS) in cooperation with the Virginia livestock industry, Virginia Cooperative Extension (VCE) and USDA APHIS Veterinary Services (USDA-APHIS-VS) spent considerable time and effort to market and implement NAIS in Virginia. A great deal of good work was accomplished in Virginia to improve traceability, but ultimately the NAIS program was terminated by USDA in 2010.


Early in 2010, USDA Secretary Vilsack introduced a new national program called Animal Disease Traceability (ADT). This program proposed to improve disease traceability in the U.S. by focusing on the identification of animals involved in interstate movements while leaving intrastate traceability concerns largely to state animal health officials working with local producer groups. The ADT program required large numbers of animals to be tagged with official identification and the distribution of tags to be carefully documented. In addition, there was increased emphasis on documenting interstate movement of animals (primarily cattle) through Certificates of Veterinary Inspection (CVI) or other documents associated with the transporting of animals in interstate commerce. This increased the burden on state animal health officials, local livestock market operators, cattle dealers, private veterinarians and processing facilities to create, store and make available extensive information on identification and movement records.

The Virginia Animal Disease Traceability program seeks to create cost-effective and practical solutions to the two main challenges in improving livestock traceability: 1) increasing the use of official and unique identification devices; and 2) capturing animal movement records (location, animal identification and sighting date) necessary to support effective tracing of diseased animals when necessary.

Summary of Program Objectives and Accomplishments, 2015-2018

In 2015, the Virginia ADT program updated a three-year plan of action as required by cooperative agreements with USDA-APHIS-VS. The Strategic Plan was approved by USDA and has guided the implementation of program activities and expenditures over the past three years. The following table summarizes the major objectives discussed in the 2015-2018 Strategic Plan and accomplishments relative to these goals. These estimates are based on cumulative information provided in detailed quarterly accomplishments reports to USDA from 2015 to 2018, and analysis of information available in Virginia’s animal health database (SCS-VA).

	Objectives and Accomplishments	Estimated Achievement
1	Develop and maintain personnel and organizational resources to support an effective traceability program.	100%
	<ul style="list-style-type: none"> A full-time program coordinator has been in place since 2005 to manage ADT activities statewide, provide leadership on information system development and maintain program continuity. Funding secured through federal cooperative agreements to effectively implement the ADT program: <ul style="list-style-type: none"> \$207,600 in 2015 \$195,359 in 2016 \$194,359 in 2017 ADT activities were successfully integrated with duties of existing staff within the Office of Veterinary Services using in-kind support from state funds (e.g., field veterinarians, livestock inspectors and support staff) 	
2	Increase the use of official identification devices in target cattle groups.	100%
	<ul style="list-style-type: none"> Since 2008, 840-series low radio frequency electronic tags (LF RFID) have been distributed through regulatory programs. Over 181,000 840-series electronic tags were distributed through vaccination, testing and market programs (30 percent increase from 2011 to 2014). Over 270,000 metal NUES tags were distributed through vaccination, testing and market programs (65 percent increase from 2011 to 2014). United DHIA in Virginia converted from non-official American ID to NUES tags in 2013 and has distributed over 34,000 tags to date Provided over 10,000 official identification tags for 4-H and Extension programs. 	
3	Create efficient data capture and management systems to increase the availability of accurate traceability information.	100%

	Objectives and Accomplishments	Estimated Achievement
	<ul style="list-style-type: none"> We began using the SCS-VA application in 2011 as a central database for all animal health information; all vaccination, test, tag distribution and premises records are managed in this system. Electronic forms have been provided to private veterinarians to record and submit regulatory vaccination and test information; approximately 50 percent of all submissions are now in electronic form. Semi-automated data logger systems based on LF RFID technology have been developed and implemented in 17 livestock markets to capture traceability data for adult cattle; over 20,000 traceability records are produced annually. The StateVet.com commercial service has been utilized since 2015 to process electronic records from livestock markets and electronic CVI (eCVI) applications (e.g., AgView, GVL), and a new animal entry permit system (ePermit) will go live in 2019 on this platform. 	
4	Revise state animal health regulations to support improved animal disease traceability.	100%
	<ul style="list-style-type: none"> State regulations concerning the operation of livestock markets and cattle dealers were revised to be consistent with national ADT guidelines. An MOA was established with United DHIA in Virginia to distribute official NUES tags to dairy producers. Updated state animal entry regulations were adopted in 2019. These regulations allow the state veterinarian to require the submission of electronic data for cattle imported to Virginia from other states. 	
5	Effectively communicate traceability plan to stakeholders.	100%
	<ul style="list-style-type: none"> Numerous articles on ADT have been written for industry publications and an annual newsletter was distributed by the Office of Veterinary Services. The program coordinator and/or veterinary staff regularly attended and exhibited at major industry meetings. Veterinary staff discussed ADT-related issues as a part of veterinary accreditation seminars. The program web site was significantly updated in 2016 to reflect the status of ADT at federal and state levels. 	
6	Meet federal traceability performance standards and animal movement reporting requirements.	100%
	<ul style="list-style-type: none"> All traceability performance exercises have been completed as quickly as possible and results reported in EMRS2. All quarterly accomplishment and financial reports were submitted as required. 	

Summary of Objectives for 2019-2022

In general, animal disease traceability is on the right track in Virginia and we do not envision major shifts in policies or program objectives over the next three years. The planned transition from visual NUES tags to electronic identification (EID) will be challenging without additional funding or federal mandates, but Virginia's successful distribution of over 400,000 RFID tags and development of electronic data capture systems over the past decade has laid a good foundation to support broader adoption of EID in the cattle industry. Nevertheless, the program must remain responsive to changing industry needs and how other states enforce requirements for interstate animal movements. Therefore, the following represent broad strategic directions that we believe will enhance ADT in Virginia over the long term while allowing flexibility in how these objectives are achieved. Detailed objectives and performance measures will be described in annual work plans required by cooperative agreements with USDA-APHIS-VS.

1. Support the livestock industry with disease traceability services.

- 1.1. Provide statewide coordination to achieve a consistent approach to ADT in Virginia
- 1.2. Provide educational and technical support to the livestock industry
 - 1.2.1. Premises registration
 - 1.2.2. Disease traceability
 - 1.2.3. Information on electronic identification technology
 - 1.2.4. Program and regulatory outreach



2. Promote adoption of electronic ID and e-commerce solutions.

- 2.1. Provide 840-series RFID tags for regulatory cattle programs
- 2.2. Promote creation of electronic animal movement data
 - 2.2.1. E-commerce applications for veterinarians
 - 2.2.2. Mobile data capture solutions
 - 2.2.3. Integration with market business systems
- 2.3. Continue development of internal traceability data management systems (e.g., SCS-VA, StateVet.com platform)



3. Update and streamline state animal health regulations and policies to enhance ADT and livestock marketing.

- 3.1. Implement new animal entry regulations
- 3.2. Review/update livestock market and dealer regulations
- 3.3. Compliance with traceability requirements
 - 3.3.1. Market and dealer records
 - 3.3.2. Accredited veterinarians and interstate movement records
 - 3.3.3. Roadside inspections



Summary of Resource Requirements

Specific resources required to implement ADT in Virginia will be detailed in annual cooperative agreements with USDA-APHIS-VS. The following table provides a brief overview of resources needed on an annual basis to achieve program continuity and strategic objectives over the next three years.

Resource	Purpose	Projected annual cost
PERSONNEL		
Program Coordinator/ADT IS Manager	Coordinate program activities; manage ADT cooperative agreement, financial resources and reporting; continue development of information systems to support ADT and other state/federal animal health programs.	\$136,000 (includes fringe and indirect)
TRAVEL		
Travel-related expenses	Participate in professional meetings directly related to ADT to maintain technical knowledge, contribute to policy formation and promote cooperative relationships with stakeholders at local, regional and national levels.	\$5,000
SUPPLIES		
Operational supplies to support ADT activities	<ul style="list-style-type: none"> Distribution of 50,000 840-RFID tags annually through regulatory cattle health programs to assist industry in transition from visual to electronic ID. 	\$64,000
	<ul style="list-style-type: none"> Annual maintenance and replenishment of field data collection systems (e.g., data loggers, RFID readers, mobile systems) that support collection of electronic traceability data. 	\$5,000
CONTRACTUAL SERVICES		
Contractual services to support ADT activities	<ul style="list-style-type: none"> Subscription to StateVet.com web services to aggregate and pre-process traceability data from multiple sources. 	10,000
	<ul style="list-style-type: none"> Personal computer/laptop and network services to support activities of program coordinator. 	2,400
	<ul style="list-style-type: none"> Annual maintenance of software applications. 	400
Total		\$222,800

Objectives and Supporting Activities

1. Support the livestock industry with disease traceability services.

1.1. Provide statewide coordination to achieve a consistent approach to ADT in Virginia.

Different sectors of the livestock industry in Virginia require different approaches to achieving improved animal disease traceability. However, to create a consistent, equitable and cost-effective foundation for all livestock species and all types of producers, VDACS will provide base level services that will, at a minimum, meet the regulatory requirements of the national program and assist different industry segments in developing additional capabilities that fit their respective production and marketing systems. The program coordinator will be the key contact person on ADT-related matters in Virginia and will maintain knowledge of national and regional issues in order to provide context for the Virginia program. In addition to coordinating ADT activities, the program coordinator will continue to manage a centralized animal health database (SCS-VA) and be responsible for improving business processes that collect and process animal health data. This position is fully funded by the ADT cooperative agreement with USDA-APHIS-VS and has been in place since 2005.

1.2. Provide educational and technical support to the livestock and poultry industries

1.2.1. Premises registration

The Virginia ADT program will continue to provide livestock premises registration services to create national Premises Identification Numbers (PIN) for any livestock production, processing or marketing facility. A PIN is assigned for all locations that manage or house livestock associated with regulatory programs. This includes livestock involved in regulatory vaccination, testing and tagging programs, interstate and intrastate movements that require an ICVI, regulated auctions and sales, activities by registered livestock dealers and animal health investigations.

1.2.2. Disease traceability and emergency response

The program will maintain expertise with traceability (e.g., SCS-VA, AIMS, AHER) and emergency response systems (e.g., EMRS, geographic information systems) in order to provide support for disease investigations and traceability performance testing.

1.2.3. Information on electronic identification technology

The program will continue to be a resource for producers, veterinarians, livestock markets and internal staff with regard to the use of electronic identification and data collection technologies. Virginia has made significant investments in EID technology over the past 10 years and will continue to assist stakeholders as they seek to incorporate more efficient information processing tools in their daily activities. In addition to daily informal interaction, we will incorporate information on EID technologies in veterinary accreditation sessions, presentations to industry groups, and meetings with state and federal personnel.

1.3. Program and regulatory outreach

The ADT Coordinator, program managers, staff veterinarians, livestock inspectors and administrative personnel all have important roles in communicating a consistent message to producers, veterinarians, market owners, industry representatives and extension personnel. Issues related to traceability are regularly discussed with staff on monthly conference calls and reference information is available on the agency web site (<http://www.vdacs.virginia.gov/animals.shtml>). In addition, we increasingly refer veterinarians to the [interstatelivestock.com](http://www.interstatelivestock.com) web site for the latest information on animal entry regulations. An annual newsletter is mailed to large animal veterinarians each year and typically includes brief updates on ADT activities and animal health programs in the Commonwealth. We will continue to attend industry meetings such as the Virginia Cattlemen's and Dairy field days, livestock workshops hosted by Virginia Cooperative Extension, the Virginia Beef Expo and the Virginia Veterinary Conference to discuss livestock disease and traceability issues. For example, in cooperation with AllflexUSA and the Virginia Beef Industry Council, a demonstration of LF RFID technology was held at the Virginia Beef Expo, April 17-20, 2019 in Harrisonburg, VA. Most importantly, our field veterinarians (4) and livestock inspectors (10) will continue to interact informally with stakeholders on a daily basis, which provides invaluable feedback on perceptions and misconceptions about the ADT program.

2. Promote adoption of electronic ID and digital data capture solutions.

2.1. Provide 840-series RFID tags for regulatory programs (cattle only)

Since 2007, VDACS has provided 840-series LF RFID tags at no cost to producers for use primarily on adult breeding age cattle. Over the past 5 years, approximately 50,000 tags have been distributed each year and now comprise over 50 percent of all official ID distributed for cattle in Virginia. However, static federal funding and increasing operational costs are decreasing the level of funding available for EID tags and it is likely that supply will not meet demand in FFY2019-20. During this planning cycle, we may need to reallocate funds previously used for tags to cover increasing personnel and IT-related costs. If free tags are not available, many veterinarians and their clients who have grown accustomed to EID tags may continue to use them at their expense. However, it is unlikely that livestock market operators will purchase EID tags and in conjunction with the phase-out of metal NUES tags, this may create a great deal of uncertainty regarding how cattle moving through markets will be tagged with official ID (we currently generate approximately 20,000 sighting records annually at Virginia markets). This issue will need to be addressed soon with market owners or additional public funding secured to meet growing demand for RFID tags.

2.2. Promote creation of electronic animal movement data

2.2.1. E-commerce applications for veterinarians

The Virginia ADT program has been encouraging the use of e-commerce applications by private practitioners for several years. Electronic templates for brucellosis vaccination and brucellosis/TB tests have been available since 2010 and approximately 50 percent of all vaccination and test chart data are submitted electronically. These data are manually entered to SCS-VA or processed using the USDA MIM Manager application. Global Vetlink (GVL), AgView (formerly mCVI) and the VSPS Interstate module have also been in use in Virginia for several years to create electronic certificates of veterinary

inspection (eCVI). Since the release of the new AgView application in the fall of 2018, 49 category II veterinarians have signed up for accounts, which represents a little over 10 percent of all category II practitioners in the Commonwealth. We will continue to promote e-commerce applications with private practitioners, but as long as states continue to accept paper forms, many practitioners will continue to avoid electronic solutions. In addition, despite the availability and increasing use of RFID tags and readers, none of the currently available eCVI applications allows direct scanning of tags into the software.

By mid-summer 2019, VDACS will release an online animal entry permit application (“Permit app”) based on the StateVet.com platform that will allow practitioners in other states to submit standard data elements required for interstate movements. The application workflow will be closely tied to entry requirements found on the interstatelivestock.com web site, will enforce data quality rules (e.g., allow only 15-digit numeric characters in “AIN” fields), allow import of electronic animal records and provide an electronic document that can be downloaded by accredited veterinarians. The Permit app will be used initially for imported cattle, but all other food animals will be included after incorporating feedback from initial users. It is our intent to require the use of the permit system for all livestock imported to Virginia as soon as feasible and state animal entry regulations have been updated accordingly as of February 2019.

2.2.2. Mobile data capture solutions

There is a need for easy-to-use and inexpensive mobile platforms that are able to collect EID information in the field and quickly transmit these data to public and private databases. As noted above, extant eCVI applications do not support this functionality and the timeline (and cost) for the USDA “Mobile Information Management (MIM) Modernization” project is unknown. Very few practitioners utilize the MIM platform due to the low level of disease testing in the Commonwealth and complexity of the hardware-software platform. Data logger systems in place at 17 livestock markets that have been very effective at capturing animal sightings are reaching the end of their useful life cycle and have increasing maintenance costs. Therefore, we intend to focus on relatively inexpensive and readily available Android and iOS devices (tablets and smartphones) running simple data collection applications to promote the collection of electronic animal records at markets, exhibitions and other events. These data can be uploaded to web-based e-commerce applications whenever wi-fi connections are available, transmitted via e-mail to office locations or stored for later use. The cost and time-to-implement is relatively low with these systems, which minimizes sunk-costs as new approaches or technologies emerge. Mobile RFID-enabled platforms for capturing traceability data will be explored with livestock markets and private veterinarians to better understand the costs and complexities involved in providing field data for e-commerce applications.

2.2.3. Integration with market business systems

Current ADT data capture solutions are not well integrated with business systems at most public livestock markets and sale barns in Virginia. This is in part due to a lack of capital, a low-level of knowledge about how to integrate electronic solutions and resistance to change on the part of many of our small market operators in the Commonwealth. There are recent examples of markets experimenting with new technologies such as ultra-high

frequency (UHF) tags and reader systems, but most operations have little incentive to make major investments of time or money. Software systems need to be upgraded at many markets and in some cases cattle handling facilities need to be redesigned as well. Our approach thus far has been to allow individual markets to develop their own solutions for meeting traceability requirements as independent small businesses. However, we plan to engage market owners more proactively in the coming months to determine how EID and e-commerce solutions might improve traceability and enhance market operations.

2.3. Continue development of internal traceability data management systems (e.g., SCS-VA, StateVet.com platform, mobile apps)

It is our intent to continue to utilize the SCS-VA/StateVet.com platform as our primary system for processing, storing and reporting on traceability data. StateVet is now being used to process data from third-party eCVI submissions, livestock market sales and other activities that generate traceability data, and will soon incorporate additional information on interstate animal movements from our animal entry permit system. All official tag distribution, premises registration and data associated with test accessions and vaccinations will continue to be managed in SCS-VA. Features for visualizing and reporting on traceability data such as graphical dashboards continue to improve and the integration of the animal entry permit system with updated animal entry regulations available at interstatelivestock.com provides a consistent platform that facilitates the collection of timely and accurate animal movement data.

One area of concern with SCS is future development and technical support for the platform. As a risk-mitigation strategy, Virginia may need to evaluate the benefit-cost of procuring a privately-hosted version of the CoreOne application in the future.

3. Update and streamline state animal health regulations and policies to enhance ADT and livestock marketing.

3.1. Implement new animal entry regulations

Updated entry regulations were approved in February 2019 for all livestock species. Official ID tags (e.g., 840 or NUES) are now required for all food animals and an entry permit is required for all species. In addition, the State Veterinarian has the authority to require information necessary to receive an entry permit to be provided in electronic form. To facilitate this process, new features are available on the StateVet.com service platform that allow accredited veterinarians to create secure online accounts and easily submit information to obtain animal entry permits for their clients. This service will be provided at no cost to users in order to maximize its use and the timely submission of accurate information on interstate animal movements. Users are guided through the process using simple questions and answers that are consistent with regulatory information provided on the interstatelivestock.com web site. Data elements collected via the permit system are consistent with those required for Interstate Certificates of Veterinary Inspection (ICVI) and electronic data that conform to USAHA data standards for electronic ICVI's will be transmitted to states of origin immediately upon successful submission. Once permit data are reviewed and approved, they will be stored in SCS-VA.

In addition, VDACS will accept submissions from approved electronic ICVI applications (e.g., AgView, GVL) in lieu of a permit as long as they fully conform to USAHA data standards and provide electronic data to the StateVet.com service. At the discretion of the Virginia State Veterinarian, submission of electronic data to satisfy animal entry requirements will likely become mandatory in the near future.

3.2. Review/update livestock market and dealer regulations as needed

Regulations regarding animal identification and record keeping have largely been updated to be consistent with current ADT requirements at the federal level. However, changes in CFR, regulations in other states and business practices in the livestock industry will require periodic review of state regulations and business processes to ensure that the ADT program continues to produce reliable traceability information. The program coordinator will consult on a regular basis with state veterinarians and livestock inspectors to maintain consistency between regulatory expectations and the provision of information resources required to support disease traceability in the Commonwealth.

3.3. Compliance with traceability requirements

3.3.1. Market and dealer records

State livestock inspectors will continue to provide oversight for animal records collected and maintained by livestock markets on a weekly basis and report compliance issues to the program coordinator. Records maintained by licensed cattle dealers will be inspected on at least an annual basis and any compliance issues reported to the program coordinator.

3.3.2. Accredited veterinarians and interstate movement records

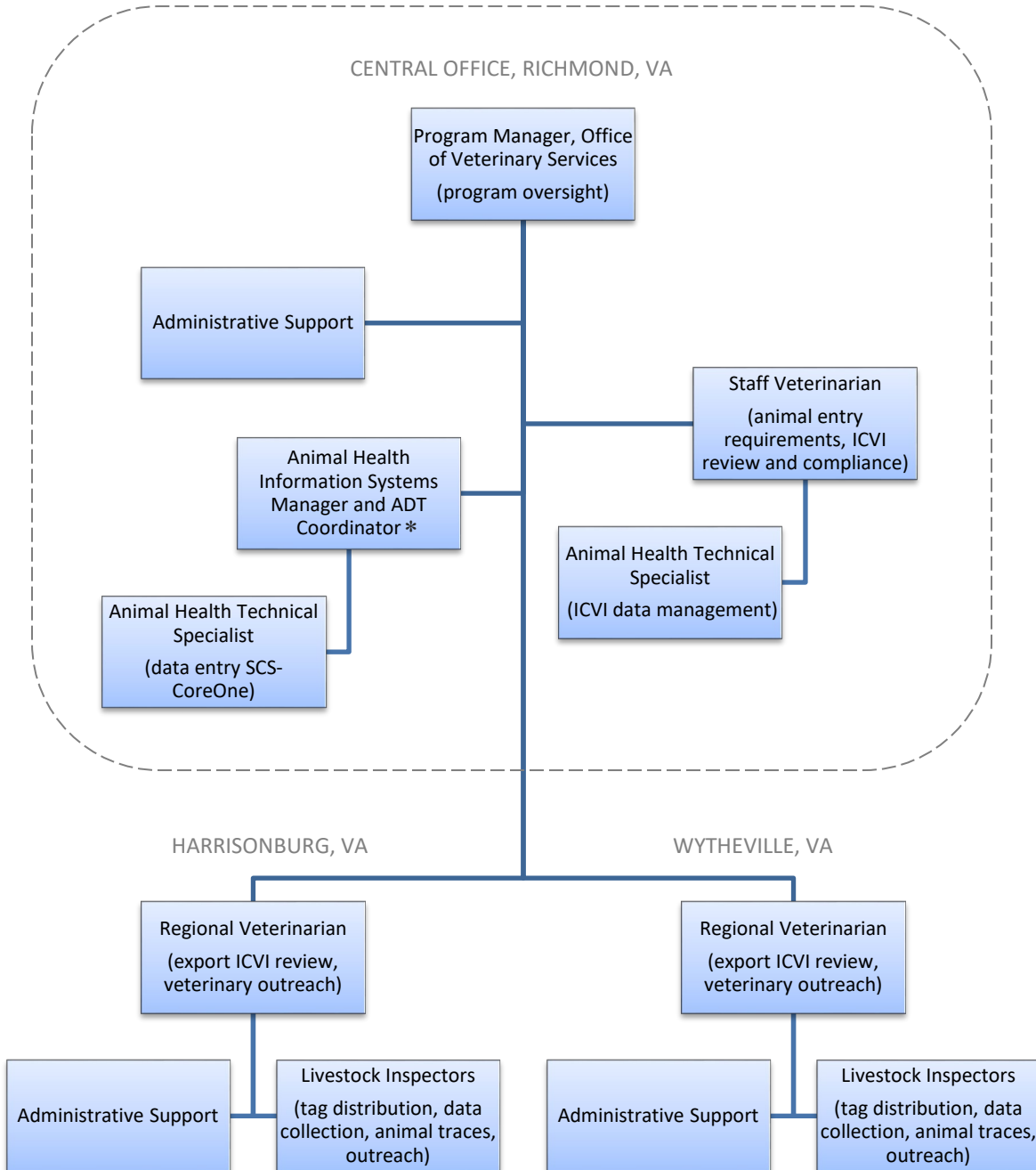
The majority of ICVI's are currently in paper form and are regularly reviewed by state personnel for completeness and accuracy. For import ICVI's, compliance issues are communicated by letter to the State Veterinarian in the state of origin. Practitioners in Virginia who regularly submit incomplete export ICVI's are contacted by one of the regional state veterinarians. Serious issues with compliance are very rare and data compiled over the past several years indicates that use of official ID on ICVI's for imported adult cattle is very high (90-95 percent).

Electronic applications will provide opportunities for more efficient review of ICVI's, but current third-party applications fail to deliver significant advantages over paper review in two ways: 1) they fail to enforce simple data entry rules (e.g., forcing only 15-digit numbers in "AIN" fields); and 2) they do not provide features for responding to submitters efficiently with feedback when ICVI's are deficient (e.g., list of compliance issues included in a form letter sent electronically using user log-in credentials). We hope to improve on this situation for imported livestock with our planned animal entry permit application, which will enforce data entry rules for animal identification, simplify the number of data elements that need to be reviewed and by definition will meet Virginia's entry requirements if a permit is granted. Our goal is to minimize manual review of import animal movement data as much as possible.

3.3.3. Roadside inspections






Over the past 2 to 3 years, VDACS has occasionally conducted spot checks on major interstates in Virginia for livestock entering from adjacent states. In general, most movements have involved equines and most transporters have had movement documentation meeting entry requirements (health papers with negative EIA certification). We would like to increase these spot checks in the future because we believe they communicate that we are serious about compliance and provide some indication of the level of compliance at major points of entry. However, with current limitations on staffing and financial resources, it is unclear to what extent we can perform roadside checks more frequently than the current 1 to 2 times per year, especially on very busy shipping routes such as I-81 through the Shenandoah Valley.

Appendix A: Organizational Chart and ADT-Related Roles in Virginia



* Only position funded by the ADT Cooperative Agreement.

Appendix B: Official Identification Devices Distributed in Virginia for Cattle

Device	Application purpose	Example image
840-series LF RFID button tag Yellow color “VA” imprint on stud	<ul style="list-style-type: none"> Cooperative disease programs Market Cattle Tagging Program Extension and 4-H 	
840-series HDX LF RFID button tag White color “VA” imprint on stud	<ul style="list-style-type: none"> Cooperative disease programs Dairy operations using automated milking and feeding systems 	
840-series LF RFID button tag Orange color “VA-OV” imprint on stud	<ul style="list-style-type: none"> On-farm brucellosis vaccination 	
NUES 9-digit metal tag*	<ul style="list-style-type: none"> Cooperative disease programs Animal movements that require official ID Distributed by United DHIA 	
NUES 9-digit metal “Bangs” tag*	<ul style="list-style-type: none"> On-farm brucellosis vaccination 	

* Distribution of free NUES tags to be phased-out per USDA timeline.