

**REPORT OF THE VIRGINIA
DEPARTMENT OF HEALTH**

**Tick-Borne Disease in
Virginia
(Chapter 120, 2023)**

**TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA**



HOUSE DOCUMENT NO. 2

**COMMONWEALTH OF VIRGINIA
RICHMOND
2024**



COMMONWEALTH of VIRGINIA

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January 2, 2024

MEMORANDUM

TO: The Honorable Glenn Youngkin
Governor of Virginia

The Honorable L. Louise Lucas
President Pro Tempore
Senate of Virginia

The Honorable C. Todd Gilbert
Speaker of the House
House of Representatives of Virginia

FROM: Karen Shelton, MD
State Health Commissioner, Virginia Department of Health

SUBJECT: Tick-borne Disease Workgroup

This report is submitted in compliance with the Virginia Acts of Assembly – Chapter 120 of the 2023 Session, which states:

That the Department of Health shall convene a work group composed of representatives of health care providers, public health experts, organizations representing individuals living with or impacted by tick-borne diseases, and other appropriate stakeholders to study and make recommendations for reducing the occurrence and impact of tick-borne diseases in the Commonwealth. The work group's report shall include recommendations for (i) increasing public awareness of tick-borne diseases and strategies for preventing tick-borne diseases, (ii) educating health care providers and the public about the importance of and need for early diagnosis and treatment of tick-borne diseases, (iii) improving public health surveillance and data

collection related to tick-borne diseases, and (iv) developing and implementing strategies to reduce tick populations and reduce the risk of exposure to and transmission of tick-borne diseases in the Commonwealth. The work group shall report its findings and recommendations to the Governor and the General Assembly by November 1, 2023.

Should you have any questions or need additional information, please feel free to contact me at (804) 864-7002.

KS/AJ
Enclosure

Pc: The Honorable John Littel, Secretary of Health and Human Resources

TICK-BORNE DISEASE IN VIRGINIA

REPORT TO THE GOVERNOR AND THE
GENERAL ASSEMBLY

2023

VIRGINIA DEPARTMENT OF HEALTH

PREFACE

Chapter 120 of the 2023 Virginia Acts of Assembly tasked the Virginia Department of Health with convening a work group made up of health care providers, public health experts, organizations representing individuals living with or impacted by tick-borne diseases, and other appropriate stakeholders to study and make recommendations for reducing the occurrence and impact of tick-borne diseases in the Commonwealth. The report reflecting this group's recommendations is to be submitted to the General Assembly by November 1, 2023.

WORKGROUP MEMBERS

Defense Centers for Public Health

Robyn Nadolny, Chief, Vector-Borne Disease Branch
Ellen Stromdahl, Vector-borne Disease Branch (retired)

National Capital Lyme Disease Association

Monte Skall, Executive Director
Gregg Skall

Old Dominion University

Holly Gaff, Professor, Biological Sciences
Wayne Hynes, Professor, Biological Sciences

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Jory Brinkerhoff, Professor and Interim Department Chair, Biology

Virginia Cooperative Extension

Kathy Hosig, Associate Professor & Public Health Extension Specialist

Virginia Council of Nurse Practitioners

Maria Circosta
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American Academy of Pediatrics, Virginia chapter

Samantha Adhoot, Board of Directors, Environmental Health Champion

Virginia Department of Agriculture and Consumer Services

Carolynn Bissett, Program Manager, Office of Veterinary Services

Virginia Department of Conservation and Recreation

Sammy Zambon, Visitor Experience Specialist

Virginia Department of Education

Vanessa Wigand, Health, Physical, Family Life and Driver Education Coordinator

Virginia Department of Forestry

Chad Briggs, Safety, Training and Compliance Officer

Virginia Department of Health

Joshua Bernick, Data and Surveillance Specialist, Office of Epidemiology
James Broyhill, Vector borne Epidemiologist, Office of Epidemiology
Lori Flammia, Deputy Vector-borne Epidemiologist, Office of Epidemiology
David Gaines, State Public Health Entomologist, Office of Epidemiology
Julia Murphy, State Public Health Veterinarian, Office of Epidemiology

Virginia Department of Wildlife Resources

John Tracey, State Wildlife Veterinarian

Virginia Farm Bureau

Chris Haskins, District 10 Field Services Director

Katelyn Jordan, Legislative Specialist, Governmental Relations

Virginia Hospital and Healthcare Association

Matthew Allen, Assistant Director, Emergency Preparedness

Virginia Veterinary Medical Association

Linda Grace, Senior Professional Services Veterinarian, Boehringer Ingelheim Animal Health

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EXECUTIVE SUMMARY

Chapter 120 of the 2023 Virginia Acts of Assembly tasked the Virginia Department of Health (VDH) with convening a “work group composed of representatives of health care providers, public health experts, organizations representing individuals living with or impacted by tick-borne diseases, and other appropriate stakeholders to study and make recommendations for reducing the occurrence and impact of tick-borne diseases in the Commonwealth.” The work group was instructed to address increasing both public and healthcare provider awareness of tick-borne diseases, improving public health surveillance of tick-borne diseases and developing strategies to control tick populations. VDH sponsored five meetings from May through August of 2023 to address the four items specified in the chapter. The work group was instructed to report its findings and recommendations to the Governor and the General Assembly by November 1, 2023.

RECOMMENDATIONS AND DISCUSSION

Major recommendations associated with each item listed in Chapter 120 of the 2023 Virginia Acts of Assembly are listed below. Additional recommendations can be found in the body of the report.

1. Increasing public awareness of tick-borne diseases and strategies for preventing tick-borne diseases:
 - a. In addition to continuing tick prevention work that VDH is already engaged in, VDH should work with stakeholders, such as the Virginia Department of Education (DOE), the Virginia Council for Private Education (VCPE), Virginia Farm Bureau, Virginia Cooperative Extension, Virginia Department of Conservation and Recreation (DCR), National Capital Lyme Disease Association (NatCapLyme), and youth associations as appropriate (e.g., Boy & Girl Scouts of America), to create tick awareness and tick-borne disease prevention educational programs for K-12 students.
 - b. In collaboration with the DOE, VDH should create lesson plans and educational materials to enhance Science, Health and/or Physical Education curricula and produce educational content about tick bite prevention and tick-borne diseases.
2. Educating health care providers and the public about the importance of and need for early diagnosis and treatment of tick-borne diseases:
 - a. Virginia medical associations that offer continuing education are strongly encouraged to routinely offer continuing education including content pertaining to the clinical presentation, diagnosis, and treatment of tick-borne diseases found in Virginia.
 - b. Institutions offering graduate-level clinical health professions programs in Virginia are encouraged to:

- i. Offer comprehensive instruction about the diagnosis and treatment of tick-borne diseases found in Virginia, including information about variations in clinical presentation, which can inform treatment considerations.
 - ii. Facilitate the research, development, implementation, and evaluation of practices and interventions to improve health literacy about tick-borne diseases.
 - c. The work group discussed the need for additional funding to support researchers at Virginia universities and colleges who are engaged in clinical studies on the diagnosis and treatment of tick-borne diseases.
3. Improving public health surveillance and data collection related to tick-borne diseases:
VDH should continue to:
 - a. modernize and improve visualizations of public health data associated with tick-borne disease.
 - b. implement new data modernization strategies to improve tick-borne disease data collection, case investigations, and data quality assurance and control measures.
 - c. strengthen and support local health department personnel with training and consultations concerning best practices for tickborne disease surveillance, case investigations, and data collection.
 - d. engage with healthcare providers to better understand the most effective methods to communicate public health entomology and tick-borne disease information with providers.
 - e. work with federal agencies, academic partners, and other stakeholders that are involved in public health entomology for tick surveillance and testing.
4. Developing and implementing strategies to reduce tick populations and reduce the risk of exposure to and transmission of tick-borne diseases in the Commonwealth:
 - a. VDH and academic partners should continue tick surveillance to understand where human illness risk lies in the environment and to inform education of healthcare providers and members of the public about the need for personal protective measures and early detection of common and emerging tick-borne diseases.
 - b. VDH and other state agencies focused on public education about the environment and human disease prevention should continue to highlight best practices in landscape management to reduce tick abundance around homes and public areas.
 - c. The work group discussed the need for additional funding to support institutions of higher education in Virginia engaged in public health entomology research focused on the environmental control of ticks, tick surveillance, and tick testing.

INTRODUCTION

WORKGROUP MANDATE

Chapter 120 of the 2023 Virginia Acts of Assembly tasked the Virginia Department of Health (VDH) to convene a work group composed of representatives of health care providers, public health experts, organizations representing individuals living with or impacted by tick-borne diseases, and other appropriate stakeholders to study and make recommendations for reducing the occurrence and impact of tick-borne diseases in the Commonwealth. The work group's report shall include recommendations for (i) increasing public awareness of tick-borne diseases and strategies for preventing tick-borne diseases, (ii) educating health care providers and the public about the importance of and need for early diagnosis and treatment of tick-borne diseases, (iii) improving public health surveillance and data collection related to tick-borne diseases, and (iv) developing and implementing strategies to reduce tick populations and reduce the risk of exposure to and transmission of tick-borne diseases in the Commonwealth. The work group shall report its findings and recommendations to the Governor and the General Assembly by November 1, 2023.

Tick-borne diseases pose a significant and growing public health issue. From 2000-2020, Lyme disease cases reported annually in Virginia residents increased almost six-fold, with the five-year average of reported annual Lyme disease cases in people in Virginia increasing from 197 cases in 2005 to 1,375 cases in 2020. The number of reported cases of ehrlichiosis in people in Virginia is also increasing; the five-year average of annual ehrlichiosis cases was six in 2005 and 105 in 2020. Finally, data from the Centers for Disease Control and Prevention indicate that the estimated incidence of alpha-gal syndrome in Virginia is among the highest in the U.S. at ≥ 2.35 cases per 100,000 residents.

The challenge of reducing the occurrence and impact of tick-borne diseases in the Commonwealth requires adopting the internationally recognized One Health paradigm, which is an interdisciplinary approach that provides a holistic and proactive framework to prevent tick-borne diseases by fostering collaboration, enhancing surveillance, and implementing integrated control measures across human, animal, and environmental domains. This workgroup, by its interdisciplinary makeup, is taking a One Health approach to the complex issue of tick-borne diseases in the Commonwealth.

WORKGROUP ACTIVITIES

VDH convened five work group meetings. The first meeting was used to organize the activities of the group and the following four meetings focused on each of the four specific items detailed in the mandate. Meetings were convened on May 8, May 17, June 9, July 13, and August 14. Work group meeting minutes can be found on Virginia Regulatory Town Hall.

REPORT OUTLINE

Key concepts, observations and recommendations are presented in this report, stratified by topic area within the legislative mandate language, namely:

1. increasing public awareness of tick-borne diseases and strategies for preventing tick-borne diseases;
 2. educating health care providers and the public about the importance of and need for early diagnosis and treatment of tick-borne diseases;
 3. improving public health surveillance and data collection related to tick-borne diseases; and
 4. developing and implementing strategies to reduce tick populations and reduce the risk of exposure to and transmission of tick-borne diseases in the Commonwealth.
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INCREASING PUBLIC AWARENESS OF TICK-BORNE DISEASES AND STRATEGIES FOR PREVENTING TICK-BORNE DISEASES

Subject matter experts Monte and Gregg Skall of NatCapLyme, Sammy Zambon of DCR, and Joshua Bernick of VDH presented information regarding increasing public awareness of tick-borne disease and strategies for preventing tick-borne diseases to the work group. Key recommendations from these presentations and resultant discussion are detailed below.

KEY RECOMMENDATIONS

1. VDH should continue to:
 - a. support the dissemination of tick-borne disease educational materials in various formats, which should be accessible to all audiences and available in multiple languages.
 - b. collaborate with academic institutions and other state agencies as appropriate to expand tick testing capabilities for human pathogen surveillance purposes that can be used to inform the public about regional exposure risk.
 - c. engage with regional partners through regular attendance at the annual Mid-Atlantic Tick Summit to share relevant information, stay current on new research developments, and coordinate prevention education messaging.
2. Additionally, VDH should:
 - a. work with stakeholders, such as DOE, VCPE, Virginia Farm Bureau, Virginia Cooperative Extension, DCR, NatCapLyme, and youth associations as appropriate (e.g., Boy & Girl Scouts of America), to create tick awareness and tick-borne disease prevention educational programs for K-12 students.
 - b. collaborate with associations representing human and animal healthcare providers of primary care, and other clinical providers as appropriate, to determine the best delivery method and messaging for tick-borne disease education for patients in clinical settings.
 - c. collaborate with private practice veterinarians, through groups such as the Virginia Veterinary Medical Association and the Virginia Board of Veterinary Medicine, to solicit tick samples from companion animals to obtain geographic information

about tick species' distributions in Virginia to inform the public about regional exposure risk.

- d. include state agencies, such as DCR and the Department of Forestry, whose personnel may be at a higher risk for tick encounters at work, in public health efforts to increase awareness and prevention of tick-borne diseases from an occupational health standpoint.
3. In collaboration with DOE, VDH should:
 - a. create lesson plans and additional educational materials to enhance Science, Health, and/or Physical Education curricula and optimize student learning about ticks of human health importance and tick-borne disease prevention.
 - b. produce educational content about tick bite prevention, tick bite response and tick-borne diseases, leveraging DOE's existing partnerships with public radio and public television. This content will feature subject matter experts, focus on information relevant to the local area, and be available for digital distribution for use by schools, local health districts and other partner organizations.
 4. Academic institutions in Virginia should consider engaging in research to better understand individual tick testing methods and how/if this information could be used in a clinically appropriate way.

EDUCATING HEALTHCARE PROVIDERS AND THE PUBLIC ABOUT THE IMPORTANCE OF AND NEED FOR EARLY DIAGNOSIS AND TREATMENT OF TICK-BORNE DISEASES

Subject matter experts Kaila Cooper, MSN, RN, System Nursing Director for Virginia Commonwealth University Healthcare Infection Prevention Program and Associate Director for Virginia Infection Prevention Training, Samuel Shor, MD, Clinical Associate Professor, George Washington University, Samantha Ahdoot, MD, member Virginia chapter of the Chapter of the American Academy of Pediatrics, and Maria Circosta, MSN, FNP-C, Carilion Clinic and member Virginia Council of Nurse Practitioners presented information regarding educating healthcare providers and the public about the importance of and need for early diagnosis and treatment of tick-borne disease to the work group. Key recommendations from these presentations and resultant discussion are detailed below.

KEY CONCEPTS AND RECOMMENDATIONS

1. Virginia medical associations that offer continuing education, particularly those representing primary care and emergency medicine practitioners, as well as nurse practitioners and physician assistants, are strongly encouraged to:
 - a. routinely offer continuing education to include the diagnosis and treatment of tick-borne diseases found in Virginia and variations in clinical presentation which can inform treatment considerations.

- b. assess the most effective means of content delivery and use knowledge gaps regarding tick-borne disease diagnosis and treatment to guide continuing education offerings.
2. Virginia medical associations representing specialists who may be consulted by primary care or emergency medicine practitioners, such as cardiologists, neurologists, and rheumatologists, should routinely offer continuing education associated with clinical manifestations of tick-borne diseases that may present to these specialties.
3. Institutions offering graduate-level clinical programs in Virginia are encouraged to:
 - a. offer comprehensive instruction about the diagnosis and treatment of tick-borne diseases found in Virginia, including variations in presentation which can inform treatment considerations.
 - b. participate in research designed to advance understanding and further development of diagnostics and treatment regimens for tick-borne diseases.
 - c. facilitate the research, development, implementation, and evaluation of practices and interventions to improve health literacy about tick-borne diseases.
4. The work group discussed the need for additional funding to support researchers at Virginia universities and colleges who are engaged in clinical studies on the diagnosis, treatment, and health literacy associated with tick-borne diseases.
5. NatCapLyme should continue its efforts collaborating with Virginia Commonwealth University to sponsor a continuing education seminar for physicians focused on tick-borne disease diagnosis and treatment that includes variations in presentation that can inform treatment considerations.
6. VDH should continue to provide information to clinicians practicing in the Commonwealth concerning the epidemiology of tick-borne diseases in Virginia, the purpose of surveillance case definitions and tick identification associated with ticks of medical importance.
7. VDH, in partnership with medical associations and institutions offering graduate-level clinical health professions programs in Virginia, should support the development of materials clinicians can use to support clinician education of their patients regarding the proper use of tick repellants.

**IMPROVING PUBLIC HEALTH SURVEILLANCE AND STRATEGIES FOR PREVENTING
TICK-BORNE DISEASES**

VDH subject matter experts Joshua Bernick, Rabies and Vector-borne Epidemiologist, and Julia Murphy, State Public Health Veterinarian, presented information concerning tick-borne disease surveillance and efforts to improve human disease surveillance in the Commonwealth to the work group. In addition, Chris Przybyszewski of US Biologic presented the company's tick management product to the work group for general awareness. Key recommendations from these tick-borne public health surveillance and data collection improvement presentations and resultant discussion are detailed below.

KEY RECOMMENDATIONS

DATA MODERNIZATION

VDH should continue to:

1. modernize and improve visualizations of public health data associated with tick-borne disease.
2. implement new data modernization strategies to capture tick-borne disease data, investigate cases, and apply data quality assurance and quality control measures.
3. assess the utility of incorporating animal health sources of tick-borne disease data as a complement to current data to assess risk.

PUBLIC HEALTH WORKFORCE

VDH should continue to:

1. strengthen and support local health department personnel with training and individual consultations concerning best practices for tick-borne disease surveillance, case investigation, and data collection.
2. seek both state and federal funding opportunities to support workforce development and capacity building associated with both tick and tick-borne disease surveillance.

PARTNERSHIPS

VDH should continue to:

1. engage with healthcare providers to better understand the most effective methods to communicate public health entomology and tick-borne disease information with providers.
2. remain active in national and regional collaborations developed to strengthen understanding geographic and seasonal trends in tick-borne disease.

3. work with federal agencies, academic partners and other stakeholders that are involved in public health entomology for tick surveillance and testing.
4. develop data sharing agreements regarding tick surveillance findings with academic partners and other stakeholders as may be appropriate.

**DEVELOPING AND IMPLEMENTING STRATEGIES TO REDUCE TICK POPULATIONS AND
REDUCE THE RISK OF EXPOSURE TO AND TRANSMISSION OF TICK-BORNE DISEASES**

Subject matter experts Drs. Holly Gaff and Wayne Hynes of Old Dominion University, Dr. Robyn Nadolny of Defense Centers for Public Health, and Dr. David Gaines of VDH presented information regarding ticks of public health importance in Virginia and environmental tick control strategies to the work group. Key recommendations from these presentations and resultant discussion are detailed below.

KEY CONCEPTS AND RECOMMENDATIONS

1. Widespread control of ticks in the environment is extraordinarily challenging:
 - a. Ongoing, widespread application of acaricide, such as pyrethroid insecticides, to control ticks is not recommended because of concerns associated with the environmental impact of this approach and the risks of ticks developing resistance to acaricides.^{1,2}
 - b. Deer reduction strategies to control tick populations are unlikely to be successful unless deer densities are greatly reduced (e.g., greater than 75% of the deer population).³
 - c. Achieving widespread reduction of ticks in the environment by treating wildlife with acaricides has so far not resulted in measurable decreases in human illness.⁴
 - d. Tick control in the environment solely does not necessarily translate into a reduction of human illness due to tick-borne infections.⁵
2. Tick control through acaricide application in the environment may be possible on a hyper-local (e.g., individual yard or park) scale for a limited amount of time and, combined with other tick control strategies, may help reduce human exposure to ticks.
3. Homeowners and property managers may want to consider landscape modifications and property management strategies that can help reduce tick populations in residential areas including keeping grass mowed, discouraging rodent and other wildlife activity, and fencing to reduce deer access. In addition, creating borders between lawn and wooded areas can help indicate areas at higher risk for tick exposure.

4. Testing ticks for human pathogens is a critical part of the understanding of where human illness risk lies in the environment. This information can be used to educate healthcare providers and members of the public to encourage personal protective measure implementation and early detection of both common and emerging tick-borne diseases.
5. VDH and other state agencies that have a mission to educate members of the public about the environment and/or human disease prevention, should continue to highlight best practices in landscape management to reduce tick abundance in the environment around homes and public areas. VDH should explore coordinating messaging and outreach materials with other state agencies that encourage environmental strategies to decrease tick exposure.
6. VDH, in coordination with Virginia Cooperative Extension (VCE) and other stakeholders, should develop a tick surveillance best practice guide for use by VCE entomology staff and participants in Master Naturalist and other VCE programs as appropriate.
7. Given Virginia's diverse landscape, a localized approach to tick mitigation and information dissemination pertaining to tick-borne disease is important. Local governments, including mosquito control groups, should consider developing and including tick management and mitigation strategies in their plans, protocols, and guidance documents.

The work group discussed the need for funding:

- a. to support institutions of higher education in Virginia engaged in public health entomology research focused on the environmental control of ticks, tick surveillance, and tick testing.
- b. for public health personnel focused on tick-borne disease surveillance and prevention. Such funding could support positions such as a full-time State Public Health Entomologist, full-time Tick Surveillance Coordinator, seasonal Tick Surveyor personnel and tick testing efforts through the Department of General Services (DGS).
- c. for ongoing tick-borne disease education efforts and related initiatives (e.g., VCE's fact sheets, youth outreach through events such as Hokie Bugfest, Extension publications, and the tick surveillance best practice guide to be produced as an Extension publication in collaboration with VDH).

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APPENDIX A – CHAPTER 120 OF THE YEAR 2023 ACTS OF ASSEMBLY

Be it enacted by the General Assembly of Virginia:

1. *§ 1. That the Department of Health shall convene a work group composed of representatives of health care providers, public health experts, organizations representing individuals living with or impacted by tick-borne diseases, and other appropriate stakeholders to study and make recommendations for reducing the occurrence and impact of tick-borne diseases in the Commonwealth. The work group's report shall include recommendations for (i) increasing public awareness of tick-borne diseases and strategies for preventing tick-borne diseases, (ii) educating health care providers and the public about the importance of and need for early diagnosis and treatment of tick-borne diseases, (iii) improving public health surveillance and data collection related to tick-borne diseases, and (iv) developing and implementing strategies to reduce tick populations and reduce the risk of exposure to and transmission of tick-borne diseases in the Commonwealth. The work group shall report its findings and recommendations to the Governor and the General Assembly by November 1, 2023.*

APPENDIX B – ACRONYMS AND ABBREVIATIONS

This is a listing of the acronyms and abbreviations appearing throughout the report and its appendices.

DCR – Virginia Department of Conservation and Recreation

DOE – Virginia Department of Education

FTE – Full-time Exempt

NatCapLyme – National Capital Lyme Disease Association

VCPE – Virginia Council for Private Education

VDH – Virginia Department of Health

APPENDIX C – STAKEHOLDER FEEDBACK AND COMMENTS AS PART OF NARRATIVE DEVELOPMENT

TESTING OF INDIVIDUAL TICKS

Stakeholders offered varying opinions concerning the value and importance of testing ticks that individuals find on themselves. While the narrative reflects the best effort to reconcile these varying perspectives, and all stakeholders were in agreement that the recommendation “Academic institutions in Virginia should consider engaging in research to better understand individual tick testing methods and how/if this information could be used in a clinically appropriate way” was appropriate, language individual stakeholders suggested is included below.

DEFENSE CENTERS FOR PUBLIC HEALTH

- If a tick-bite victim saves and submits their tick for identification and/or testing from a state agency or state-recommended resource, they are reaching out for information from the experts-this is an important teachable moment and should be encouraged.
- Tick-borne pathogens are more easily detected within the tick than in the person, so having a tick professionally identified tested by a reputable lab can provide helpful information that can assist a healthcare provider with making a diagnosis or treatment plan, especially if the tick-borne pathogen is rare or emerging.
- In the event that tick testing is conducted for human-biting ticks, it should always be made clear that an infected tick does not mean that the person will or will not develop a disease but provides a sense of the risk associated with that tick encounter.

NATIONAL CAPITAL LYME DISEASE ASSOCIATION

Private laboratories should also be approved for tick testing, but with a VDH approved criteria that will account for the concerns expressed by the group.

AMERICAN ACADEMY OF PEDIATRICS, VIRGINIA CHAPTER

In response to the language “and should only be done provided there is appropriate guidance concerning interpretation of results” AAP recommended removing this phrase and offered the comment “Appropriate guidance is not currently possible, other than to note that the test results do not inform clinical decisions and should not be performed. This phrase implies that appropriate guidance is possible and thus creates an inaccurate patient expectation.”

VIRGINIA DEPARTMENT OF HEALTH

VDH does not regulate testing associated with nonhuman specimens and so putting forward approval criteria associated with testing of ticks by private laboratories would be problematic. Further, regardless of laboratory methods used, interpretation of results is still unclear. This is why Dr. Gaff suggested that the recommendation "Academic institutions in Virginia should consider engaging in research to better understand individual tick testing methods and how/if this information could be used in a clinically appropriate way" be inserted into this section. Expressing what work group member opinions were about testing of individual ticks that people find on themselves and saying more information is needed to understand if there could be any clinical relevance here seems to be the best fit at this point in time.

VDH COLLABORATION WITH DOE CONCERNING LESSON PLANS

Stakeholders expressed a variety of opinions concerning adding physical education teachers to the list of DOE personnel involved in increasing public awareness of tick-borne diseases and strategies for preventing tick-borne diseases in reference to the recommendation "In collaboration with the Virginia Department of Education, VDH should create example lesson plans and additional educational materials to enhance Science and Health Education curriculum and optimize student learning."

NATIONAL CAPITAL LYME DISEASE ASSOCIATION

In the absence of a such a curriculum, the Virginia Department of Education should consider school health and physical education teachers should be trained to teach a tick awareness and prevention program.

AMERICAN ACADEMY OF PEDIATRICS, VIRGINIA CHAPTER

This creates challenges/privacy issues, as ticks often insert in sensitive areas of the body. Tick checks are not possible by school personnel. Therefore, this is likely not possible.

VIRGINIA DEPARTMENT OF HEALTH

I don't think the suggestion here is that PE teachers check kids for ticks, but rather engage in teaching kids about tick-borne disease. I think including PE teachers as an option of personnel who might be trained in some way to assist in increasing awareness helps address the suggested addition.

IMPROVING PUBLIC HEALTH SURVEILLANCE

DEFENSE CENTERS FOR PUBLIC HEALTH

Suggest we add a recommendation under "Data collection", suggesting that along with human case data surveillance from reportable diseases, VDH should also partner with academic institutions in VA to ensure that active surveillance of ticks from the environment and from wildlife hosts is conducted on a routine and widespread basis, as well as passive surveillance data from vets or from human biting ticks.

VIRGINIA DEPARTMENT OF HEALTH

This addition to the recommendation list associated with improving public health surveillance was offered after the final meeting of the group and would require further discussion to assess the staffing and funding needed to accomplish this.

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