

AN ONGOING THREAT The 2019 AHS Heartworm Incidence Survey shows that heartworms maintain a stubborn hold in the United States.

HEARTWORM HOTLINE

The State of Heartworm Incidence in the U.S.

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The **Heartworm Hotline** column is presented in partnership between **Today's Veterinary Practice** and the **American Heartworm Society** (heartwormsociety.org). The goal of the column is to communicate practical and timely information on prevention, diagnosis, and treatment of heartworm disease, as well as highlight current topics related to heartworm research and findings in veterinary medicine.

Changes in weather patterns. Lapses in preventive medication compliance. Pet relocation. These factors and more were cited in a recent survey of U.S. veterinarians as factors contributing to the rise and fall of heartworm incidence in their practice areas.

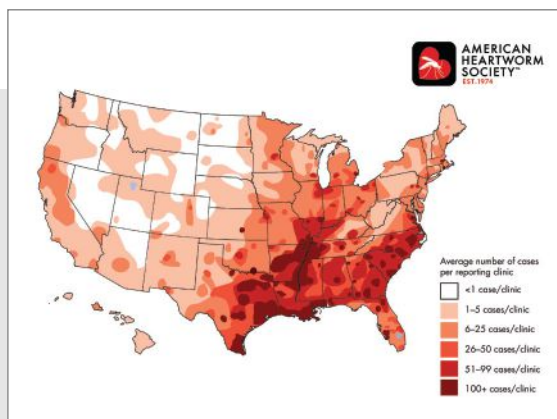


FIGURE 1. Heartworm incidence in the continental U.S. and Hawaii based on the 2019 AHS Heartworm Incidence Survey.

To help veterinary professionals, shelter personnel, and pet owners understand heartworm trends in their areas, the American Heartworm Society (AHS) began tracking U.S. heartworm incidence in January 2002. Since then, the AHS Heartworm Incidence Survey has been conducted every 3 years, using heartworm testing data submitted by veterinary practices, reference laboratories, and animal shelters. Following the analysis of survey results, a U.S. heartworm incidence map is generated to provide a visual representation of the spread and severity of heartworm infections.

The AHS released the results of the most recent survey, which reflects testing results from the 2019 calendar year. Just under 6000 veterinary practices and shelters submitted data from more than 5.5 million pets. The 2019 map (**FIGURE 1**) was unveiled in April 2020.

HOW MANY PETS IN THE U.S. ARE HEARTWORM-POSITIVE?

While it is possible to use the survey data to make

From top: Parilov/shutterstock.com; courtesy American Heartworm Society. Opposite: courtesy American Heartworm Society.

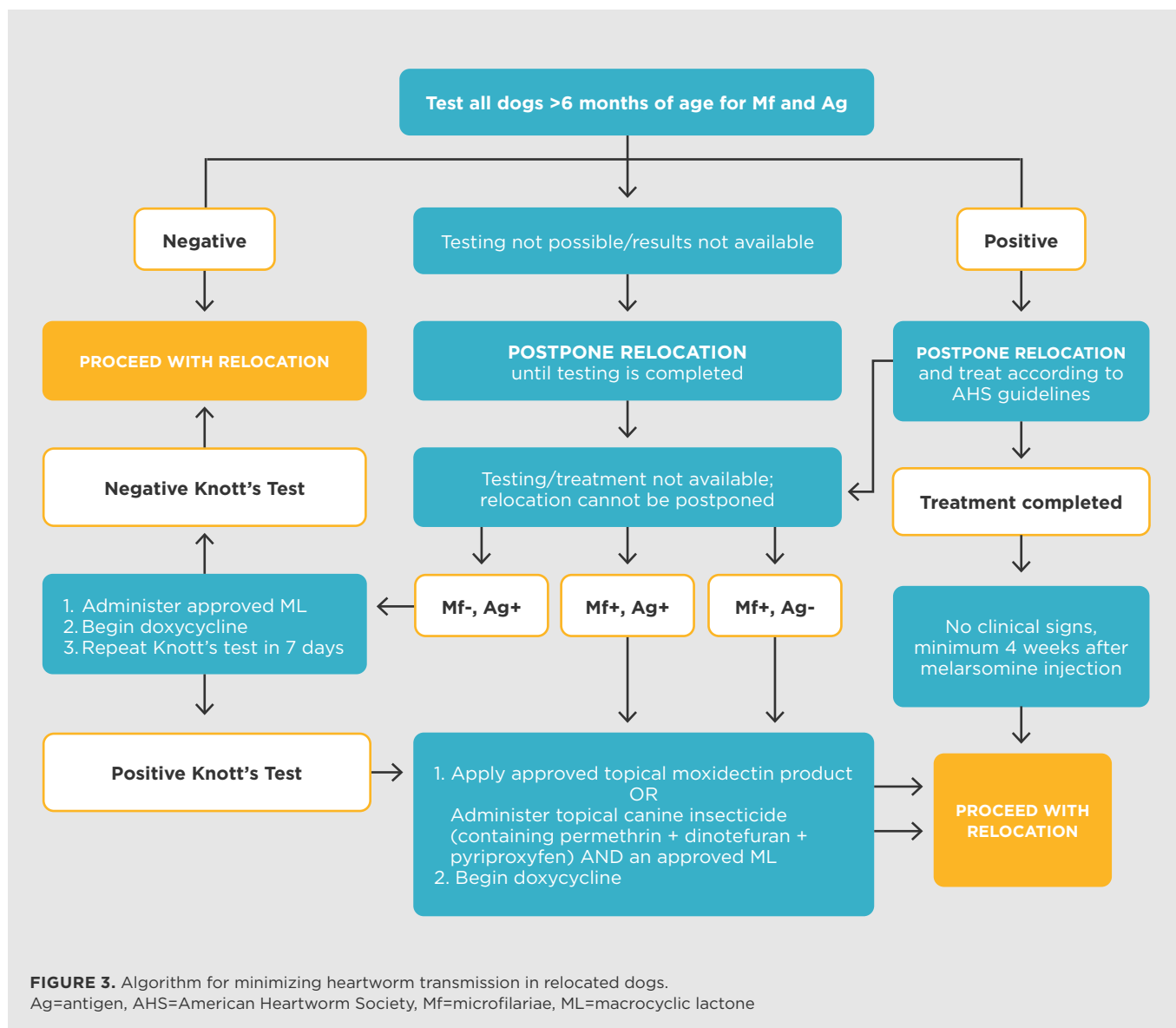


FIGURE 3. Algorithm for minimizing heartworm transmission in relocated dogs. Ag=antigen, AHS=American Heartworm Society, Mf=microfilariae, ML=macrocytic lactone

Veterinarians reported numbers of patients tested for heartworm infection, as well as the number of positive cases from that total.

■ Heartworm infection was diagnosed nationwide. No state in the U.S. is heartworm-free, according to the AHS survey. While Alaska has reported positive dogs in every AHS survey since 2001, to our knowledge, none of those cases occurred in native dogs without a history of travel outside the state. It was revealed the top 5 states for heartworm incidence were Mississippi, Louisiana, South Carolina, Arkansas, and Alabama—all states that have been in the top 10 states since the AHS began tracking incidence data in 2002. Rounding out the top 10 states were Texas, Tennessee, Georgia, North Carolina, and Oklahoma. Among the

top 10 states, only Alabama, Louisiana, and Texas saw decreases in the average number of dogs diagnosed per practice, while increases in the average number of cases were noted in the other 7.

In addition, participants responded to a brief survey designed to provide insights on factors behind the data. From the survey, the following findings were identified:

■ While heartworm incidence dropped slightly in some parts of the country in 2019, more veterinarians overall noted an upward trend in heartworm incidence over the previous 3 years than a downward trend. Of respondents participating in the AHS survey, 26% reported seeing more heartworm cases in 2019 versus 2016, while 16% reported a decline in their practice

TABLE 1 Veterinary Usage of American Heartworm Society (AHS) Resources

	2013	2016	2019
Follow the AHS guidelines on heartworm prevention, diagnosis, and treatment	72.4%	77%	82%
Use the AHS website (heartwormsociety.org)	38.8%	49%	56%
Have used AHS client education tools	32%	39%	64%
Have attended an AHS symposium	4.8%	4.4%	2%
Do not use AHS resources	15%	10%	8%

areas. The remaining 57% perceived the prevalence in their areas to be “about the same.” These numbers were similar in 2016, when 23% of participants perceived a rise in incidence and 19% saw a drop.

- Among veterinarians who believe heartworm incidence increased, leading reasons cited were an increase in heartworm-positive pets coming from heartworm-endemic areas, poor compliance among pet owners, and weather trends that caused an increase in mosquitoes. Given the mobility of society today, as well as the need to relocate animals due to natural disasters or animal homelessness, the transport of pet animals is a fact of life in U.S. veterinary practices today. To help reduce the transmission of heartworm disease in animals, the AHS partnered with the Association of Shelter Veterinarians (ASV) in 2018 to develop recommendations for the safe transport of heartworm-positive pets (**FIGURE 3**).
- Compliance is the leading factor associated with downward trends in heartworm incidence. Among veterinarians who saw cases drop over the past 3 years, the top 2 reasons they gave were (1) improved compliance, which was defined as more year-round usage of preventives and more doses given on time, and (2) more users, defined as more pet owners giving preventives to their pets.
- Veterinarians are seeking educational resources on heartworm disease. According to the AHS survey, 82% reported that they follow the AHS guidelines on prevention, diagnosis, and treatment of heartworm disease, while more than half of practitioners utilize resources on the AHS website. In most cases, the utilization of AHS resources was higher than that reported in the 2013 and 2016 surveys (**TABLE 1**).

SUMMARY

The results of the AHS Incidence Survey represent a mix of both bad and good news. On one hand, heartworms maintain a stubborn hold in the U.S., with the southeastern U.S. leading the nation in incidence. On the other hand, it is clear that there is a

straightforward answer to this: persuade more pet owners to use preventives and convince them to protect dogs and cats year-round—with no lapses. In addition, adherence to the AHS/ASV recommendations on animal transport by veterinarians, shelters, and rescue organizations can help minimize the chance that heartworm-positive pets moved from one part of the country to another do not become reservoirs for heartworm infection in their new homes.

The 2019 AHS Heartworm Incidence map, as well as maps from 2001 to 2016, can be downloaded at heartwormsociety.org/veterinary-resources/incidence-maps. **TVP**



Chris Duke

A 1983 graduate of the College of Veterinary Medicine at Auburn University, Dr. Duke is the founder of the Bienville Animal Medical Center in Ocean Springs, Mississippi. He is a member of the South Mississippi VMA, the Mississippi VMA, and the AVMA, and is a Hospital Director for the AAHA. He has been published in numerous magazines and newspapers over his career. Dr. Duke has special interest in orthopedic and reconstructive trauma surgery. He has served on the AHS Executive Board since 2016.



Doug Carithers

Dr. Carithers is a 1984 graduate of Iowa State University College of Veterinary Medicine. He has held various roles with Boehringer Ingelheim since leaving private mixed-animal practice in 1993. As a committee and board member for the AHS, he has conducted every AHS Heartworm Incidence Survey since 2001. He has authored or co-authored 35 peer-reviewed papers, 34 scientific papers, and co-authored a best-selling companion animal parasitology atlas. He lectures nationally and internationally and has provided more than 950 hours of CE. Dr. Carithers also currently serves as vice president of the AHS and president of the American Association of Veterinary Parasitologists.