

# Point Prevalence Survey of Antimicrobial Use in U.S. Veterinary Teaching Hospitals

## OVERVIEW AND BENEFITS OF PARTICIPATION

### What are point prevalence surveys and why are they important?

Measurement and reporting of **antimicrobial use (AU)** and **antimicrobial resistance (AMR)** is a core component of antimicrobial stewardship (AS). In public health, the **point prevalence survey (PPS)** approach has been used to establish national estimates of AU in acute care and long-term care settings.<sup>1-3</sup> A PPS is an approach to identify the number of people with a disease or condition at a specific point in time. In the case of AU, the PPS has been used to determine the number of people receiving antimicrobial treatment on a given day. National PPS for healthcare settings have compiled the number of individuals on an antibiotic in many individual facilities into a national estimate of how many people receive antimicrobials in these settings per day. Information is also gathered about antimicrobial type, class, and reason for use, as well as general patient details.

### Why should we consider conducting a national AU PPS for companion animal veterinary medicine?

The companion animal veterinary profession lacks data to evaluate AU and AS practices, but inappropriate AU is likely as prevalent in clinic-based veterinary practice as it is in human medicine. In a single-center study, 38% of canine antibiotics in a veterinary teaching hospital were prescribed without documented evidence of infection.<sup>4</sup> The International Society for Companion Animal Infectious Diseases (ISCAID) has published AU guidelines for canine superficial bacterial folliculitis and for canine and feline urinary tract and respiratory tract disease.<sup>5-7</sup> However, without AU data, we cannot assess adherence to these guidelines, measure trends, or describe broader AS practices. PPS can be used to collect uniform data from multiple sites over a single time period, providing a snapshot of practice and valuable information to guide profession-wide improvement.

### What are the goals of this national PPS?

**The goal of this study is to establish a national estimate of AU in U.S. small animal veterinary teaching hospitals for use in setting AS objectives, defining interventions, and benchmarking progress.** There are no published national data on AU in U.S. companion animal hospitals and few data on practices in individual hospitals. Beginning in late 2018, a research team at the University of Minnesota (UMN) College of Veterinary Medicine has been using the PPS approach for internal AU measurement and has summarized this methodology to facilitate establishment of a national one-day snapshot of AU in veterinary teaching hospitals. Currently, this methodology is being piloted by the UMN research team in Minnesota and North Dakota in companion animal general practices.

### What will be required of me if I participate in the national PPS survey?

Each participating facility must identify a primary contact for this study. This person, or his/her designated team, will be responsible for obtaining local ethics approval (e.g., Institutional Review Board, IRB), if necessary, completing a facility survey (e.g., services offered, hospital capacity, urban/rural characteristics), attending an online training session, identifying a survey date, generating a census of patients on study services on the survey date, collecting medical record information for each animal included in that census into an online data collection tool, completing an assessment survey of how data collection went, and communicating with the UMN research team for data validation and other study coordination. Approximately 10 hours will be required for each survey

year, however, an exact time estimate will vary depending on size of clinic. In 2020, services included will be: Emergency/Urgent Care, Critical Care, Internal Medicine, Primary Care, and Surgery. Future years will likely include additional services, such as dermatology, oncology, and ophthalmology.

## What will be provided to me?

A clinic survey, data collection tool, data dictionary, standard operating procedures (SOP) for data collection, online training session, and sample IRB project description, if requested, will be provided to participating veterinary hospitals. Lead study personnel from UMN will be available for assistance. In addition, an AS resource toolkit, including a Handbook of AS in Companion Animal Veterinary Settings, customizable commitment posters, an antibiotic time-out worksheet, antibiotic use talking points, and more, will be available online to each participating hospital.

## What are the benefits to my hospital?

In addition to contributing to a baseline of knowledge for the profession, each participating facility will gain experience reviewing AU data and using protocols that can be used internally for continued AU tracking and improvement of facility-level prescribing.

## Are there any data privacy issues?

Data will be collected in secure software systems. Data identifying client or veterinary team members will not be collected. Participating clinics will have access to enter patient data. Any report published or presented as a result of this study will not include any information that will make it possible to identify a patient, employee, or clinic. The UMN ethics committees have deemed this research exempt from review.

## What is the timeline, and how do I participate?

- June–August 2020: Hospital recruitment, participating hospitals obtain ethics approval (if required), primary contact training, facility survey completed
- August 2020–Jan 2021: Collection of single-day data, post-data collection assessment survey completed
- Repeat single-day data collection in 2022 and 2024.

To participate, contact the lead study personnel to receive additional information.

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## References

1. Eure, Taniece et al. *Infect Control and Hosp Epidemiol* (2017)
2. Timbrook, Tristan T. et al. *Infectious Dis Ther* (2017)
3. Magill, Shelley S. et al. *N Engl J Med* (2014)
4. Wayne, A., R. McCarthy, and J. Lindenmayer. *J Small Anim Pract* (2011)
5. Hillier, Andrew et al. *Vet Dermatol* (2014)
6. Lappin, M. R. et al. *J Vet Intern Med* (2017)
7. Weese, J. Scott et al. *Vet Med Int* (2011)