Health status and population characteristics of dogs and cats examined at private veterinary practices in the United States

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Objective—To determine age, breed, sex, body condition score, and diet of dogs and cats examined at private veterinary practices in the United States during 1995, and estimate prevalences of the most common disorders for these animals.

Design—Cross-sectional study.

Animals—31,484 dogs and 15,226 cats examined by veterinary practitioners at 52 private veterinary practices.

Procedure—Information on age, breed, sex, body condition score, diet, and assigned diagnostic codes were collected electronically from participating practices and transferred to a relational database. Prevalence estimates and frequencies for population description were generated using statistical software.

Results—Dental calculus and gingivitis were the most commonly reported disorders. About 7% of dogs and 10% of cats examined by practitioners during the study were considered healthy. Many conditions were common to both species (eg, flea infestation, conjunctivitis, diarrhea, vomiting). Dogs were likely to be examined because of lameness, disk disease, lipoma, and allergic dermatitis. Cats were likely to be examined because of renal disease, cystitis, feline urologic syndrome, and inappetence.

Clinical Implications—Results can be used by veterinary practitioners to better understand and anticipate health problems of importance in cats and dogs they examine and to better communicate with clients regarding the most prevalent disorders in cats and dogs. (*J Am Vet Med Assoc* 1999;214:1336–1341)

Observational studies in companion animal research are commonly conducted using information from dogs and cats referred to veterinary teaching hospitals. However, patients referred to veterinary teaching hospitals are not representative of the general population of animals examined at private veterinary practices, but rather, represent a subset of patients with diseases that are difficult to diagnose and treat.[1,2] The Veterinary Medical Database, currently the only available nonproprietary source of data on canine and feline diseases, consists of data collected for patients examined and treated at veterinary teaching hospitals. Research conducted using these data, therefore, may not be valid for the general population of dogs and cats in the United States.

To address this shortcoming, the National Companion Animal Study was developed to determine the most common disorders among dogs and cats examined at private veterinary practices in the United States, and to determine prevalences of and risk factors (eg, age, breed, sex, body condition score, diet type and source) for these disorders. The purpose of the study reported here was to determine estimates of the prevalences of the most common disorders of dogs and cats examined at private veterinary practices in the United States.

Materials and Methods

Data collection methods for the study were developed through the use of a pilot study[a] involving 5 private veterinary practices in Minnesota and South Dakota that was conducted between 1992 and 1994. Coded data were entered into a computer-based practice management system[b] and transferred electronically into a database at the University of Minnesota.

Practice recruitment—Participants in the study were recruited through an article in a newsletter distributed to users of the practice management system. A specific recruitment letter describing the study was mailed subsequent to the newsletter. Only private veterinary practices exclusively engaged in companion animal medicine were eligible to participate; referral and specialty practices were excluded. Incentives offered to participants included a practice-specific data report and a certificate of acknowledgment. After practices returned a form indicating interest in participation, they were informed that a $500 honorarium would be offered to participants who completed all of the required data collection for the study.

Administration and practice support—To enable data collection, 2 additional computer files were created for the study and installed by participants on their computer systems. One file contained approximately 1,300 codes for diagnostic terms, **body condition score (BCS)**, and diet and was merged into the system file containing all other codes (ie, service codes) used in the practice. The other file was used to create a data file in ASCII format for the participation dates.

Investigators provided support through a toll-free number and through support staff of the system's manufacturer. Materials distributed to participants included a study manual and a 30-minute videotape. Calendars with reminders for the specific dates of data collection were provided, and reminder calls were made to each participant the week before

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Participants in the study are listed at the end of the article.

a new data collection period began. A bimonthly newsletter was published during the study to profile participants and to update participants on the study's progress.

Data collection—Participants were assigned to collect data on all cats and dogs examined by any veterinarian in the practice during 4 specific but not consecutive month-long periods in 1995. Practices were randomly assigned, on the basis of geographic region (Pacific, Mountain, East North Central, West North Central, South Central, Northeast, South Atlantic),[3,c] to 1 of 3 sampling groups: group A (Jan 16 through Feb 18, Apr 17 through May 20, July 17 through Aug 19, and Oct 16 through Nov 18); group B (Feb 13 through Mar 18, May 15 through June 17, Aug 14 through Sept 16, and Nov 13 through Dec 16); and group C (Mar 13 through Apr 15, June 12 through July 15, Sept 18 through Oct 21, and Dec 11 through Jan 13). Data collected for each dog and cat examined during data collection periods included clinic-specific patient identifier, date of service, species, birth date, breed, sex, assigned diagnostic codes, diet, and BCS.

Assignment of diagnostic codes—During each examination, new (incident) and existing (prevalent) disorders were recorded on laminated sheets by the attending veterinarian, and all disorders were assigned a diagnostic code. Case definitions were not imposed on attending veterinarians, and veterinarians were advised to assign the most specific diagnostic code that they were comfortable using, given the patient situation. For example, if a dog was examined because of pruritus and the attending veterinarian was confident that the dog had atopic dermatitis, the code for "dermatitis, atopic" was entered. If the attending veterinarian was uncertain about the diagnosis, however, the code "dermatitis, pruritic" was entered. In general, the most definitive diagnostic codes were recorded. For example, for a dog with renal failure in which the diagnosis had been confirmed on the basis of clinicopathologic testing (eg, urine specific gravity, BUN concentration), "renal failure" would be the only diagnostic code entered, even if the dog had related problems (eg, azotemia, polyuria, polydipsia). If an animal with no existing or new disorders was examined (eg, an animal examined for elective surgery, vaccinations, or other preventive care), the diagnostic code "healthy animal" was entered. This "healthy animal" code enabled the authors to estimate the population at risk (ie, those cats or dogs examined by a veterinarian during the study period), which was then used as the denominator for prevalence estimates.

For patients for which a definitive diagnosis could not be made at the time of the examination or before an invoice was generated, the diagnostic code "pending diagnosis" was entered, in addition to codes for any clinical abnormalities or other disorders identified at the time of the examination. At the end of each month-long data collection period, a list of all animals for which the "pending diagnosis" code had been entered was generated. The paper medical records for these animals were reviewed, and refined diagnostic codes for these patients entered, when possible.

Diet type—A 1-page laminated form on type and source of food fed to the animal during the past 6 months was filled out by the client before an invoice was created. Diet categories were popular dry, premium dry, therapeutic dry, popular canned, premium canned, therapeutic canned, homemade, semi-moist, and other. "Popular" was used to describe brands usually purchased in a grocery store, farm store, or large format pet retailer. "Premium" was used to define brands purchased in a veterinary practice, pet store, or large format pet retailer. "Therapeutic" was used to define brands prescribed and sold by veterinarians for treatment or prevention of disease. Clients chose 1 major diet component (60% or more of diet by volume) and 1 minor diet component (remainder of diet, if applicable). Additional diet codes were entered during subsequent patient visits only if the diet had changed.

Body condition score—Criteria for assigning BCS **(Appendix)** were listed on the opposite side of the sheet used by attending veterinarians to list new and existing disorders, and were included in the videotape provided to participants. The scoring system was a modification of existing systems,[4,d] and involved assessing the amount of fat covering the ribs (dogs and cats), and tailbase (dogs) and the abdominal contour. Only whole-number scores were used; the score indicated by most scoring criteria was used when the BCS was ambiguous. A BCS of 1 indicated the animal was excessively thin, a score of 3 indicated that the animal was the ideal weight, and a score of 5 indicated that the animal was obese. Because puppies and kittens often have pendulous abdomens, abdominal contour was not considered when assigning BCS for animals < 6 months old. Dogs and cats examined by attending veterinarians were assigned BCS at least once during the designated data collection periods. Additional BCS were entered during subsequent visits only if the score had changed.

Data processing and translation—Once the patient visit was completed, all study forms were processed by staff who entered data into patient records in the computer-based practice management system at participating practices. At the end of each of the 4 data collection periods and after additional diagnostic codes had been entered for patients with a "diagnosis pending" code, a file was created with records of all dogs and cats examined by a veterinarian during the data collection period, as well as records for invoices that did not involve a direct patient encounter (eg, pet food purchase, fecal examination). This file contained animal identification number, date of patient visit, birth date, zip code, breed, sex, species, practice-specific service codes, and additional diagnostic, BCS, and diet codes collected for the study. Client-specific information except zip code was not collected from practice records. Quarterly, this data file was copied to a floppy disk provided with the study materials and sent to the investigators.

The computer programs used to translate and upload data from disks supplied by participants to a database[f] were developed during the pilot study.[a] This process involved reading the ASCII file that contained variables for the study in a consistent order for each record. With the exception of breed data, all study codes were standardized. Breeds were entered as free text and translated to standard codes for the specific breeds. Any breed combination (eg, German Shepherd Dog/Labrador Retriever or Siberian Husky/German Shepherd Dog) was coded as a mixed-breed.

Nomenclature—The nomenclature system included 2 general categories of terms[5]: diagnostic codes and location codes. However, use of location codes was optional for the study reported here. The list of diagnostic codes was dynamic, and the number of terms and synonyms grew with participant use. All levels of definition of a diagnosis could be captured, from a vague problem (eg, lump) to a specific diagnosis (eg, adenocarcinoma). Terms and codes were matched to the Systematized Nomenclature for Medicine and Veterinary Medicine[5,6,e] to facilitate analysis and future comparisons.

Database—Information in the original database tables was converted to another database program,[g] and records were refined so that individual animals had specific diagnostic codes recorded only once in the database for the entire study period. For example, if a cat had been examined 4 times during the study and a diagnostic code for "gingivitis" had been entered during each visit, that diagnostic code would be counted only once during calculation of the estimated prevalence of gingivitis in cats. If multiple BCS had been entered for an animal, mean BCS was used. Only the first recorded diet code for each animal was used in analyses.

Statistical methods—Text files were created from the database and imported into a statistical software program[7] to generate prevalence estimates and frequencies for population description. Prevalences of specific disorders were estimated by dividing number of cats or dogs for which the corresponding specific diagnostic code had been recorded at least once during the study by total number of cats and dogs for which at least 1 diagnostic code of any kind was recorded during the study period. Confidence intervals were estimated by use of the binomial distribution and exact methods.[8,9]

Results

Practice participation—Study materials were mailed to 63 private veterinary practices in 33 states. Fifty-two practices in 31 states (6 in the South Atlantic region, 6 in the Pacific region, 10 in the Mountain region, 8 in the East North Central region, 8 in the West North Central region, 7 in the South Central region, and 7 in the Northeast region) completed all 4 data collection periods.

Information on age, breed, and sex was provided for 42,774 cats and 86,772 dogs. Database tables included 114,115 diagnostic codes, 73,296 BCS, and 64,631 diet codes. Overall, at least 1 diagnostic code was recorded for 15,226 cats (9% in the South Atlantic region, 11% in the Pacific region, 15% in the Mountain region, 21% in the East North Central region, 10% in the West North Central region, 5% in the South Central region, and 29% in the Northeast region) and 31,484 dogs (8% in the South Atlantic region, 13% in the Pacific region, 20% in the Mountain region, 16% in the East North Central region, 14% in the West North Central region, 9% in the South Central region, and 19% in the Northeast region).

Population description—Age distributions for cats (n = 14,270) and dogs (30,517) included in the study were bimodal. Median age for the dog population was 4.8 years (interquartile range, 7.0 years) and the median age for the cat population was 4.3 years (interquartile range, 7.6 years). Most animals examined were < 1 year old or between 4 and 7 years old (**Fig 1**). Of the 15,205 cats for which sex was indicated, 40% were neutered males, 37.5% were spayed females, 11.4% were sexually intact females, and 9.8% were sexually intact males (1.3% were listed as unknown). Of the 31,442 dogs for which sex was indicated, 37.1% were spayed females, 24.4% were neutered males, 21.2% were sexually intact males, and 16.7% were sexually intact females (0.6% were listed as unknown). Of the 15,226 cats for which breed information was provided, 65.3% were domestic shorthairs, 16.2% were domestic longhairs, 4.1% were Siamese, 4.1% were domestic mediumhairs, 2.8% were mixed-breeds, 2.5% were Persians, 2% were Himalayans, 0.4%

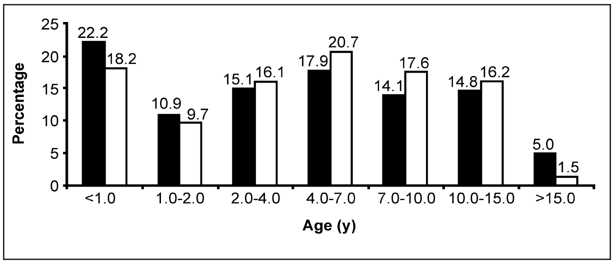

Figure 1—Age distribution for 14,270 cats (■) and 30,517 dogs (□) examined at private veterinary practices in the United States.

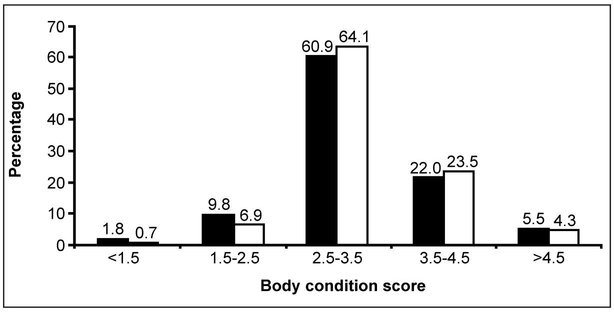

Figure 2—Distribution of body condition scores for 14,270 cats (■) and 30,517 dogs (□) examined at private veterinary practices in the United States.

were Manxs, 0.4% were Maine Coons, and 0.2% were Abyssinians (the remaining 2% represented other breeds). Of the 31,484 dogs for which information on breed was provided, 27% were mixed-breeds, 7.9% were Labrador Retrievers, 4.7% were Golden Retrievers, 4.7% were Cocker Spaniels, 3% were German Shepherd Dogs, 2.3% were Shih Tzus, 2.1% were Poodles, 1.8% were Rottweilers, 1.8% were Shetland Sheepdogs, and 1.6% were Yorkshire Terriers (the remaining 43.1% represented a variety of breeds). Information on diet was provided for 11,807 cats and 23,917 dogs. For most cats (54%), the major diet component was a popular dry food; 26% were fed a premium dry food, 11.4% were fed a popular canned food, 5% were fed a therapeutic dry food, 1.2% were fed a premium canned food, 0.7% were fed a therapeutic canned food, 0.7% were fed a semi-moist food, 0.4% were fed a homemade diet, and 0.7% were fed some other diet. For most dogs (53%), the major diet component was also a popular dry food; 33.3% were fed a premium dry food, 4.8% were fed a popular canned food, 3.4% were fed a therapeutic dry food, 1.3% were fed a homemade diet, 1% were fed a semi-moist food, 0.9% were fed a premium canned food, 0.9% were fed a therapeutic canned food, and 1.4% were fed some other diet. Body condition scores were reported for 13,532 cats and 27,415 dogs (**Fig 2**). Scores were normally distributed; mean ± SD BCS was 3.2 ± 0.7 for cats (n = 14,270) and 3.3 ± 0.7 for dogs (30,517); mode BCS for cats and dogs was 3.

Disease prevalence—For cats and dogs, the most commonly reported disorders were dental calculus and gingivitis (**Tables 1 and 2**). About 7% of dogs and 10% of cats examined by participants during 1995 were considered healthy (ie, did not have any diagnostic

Table 1—The 29 most common disorders reported for 31,484 dogs examined at private veterinary practices in the United States

Disorder	Prevalence (%)	95% CI
Dental calculus	20.5	20.0–20.9
Gingivitis	19.5	19.1–20.0
Otitis externa	13.0	12.6–13.4
Healthy animal	6.8	6.5–7.1
Dermatitis	4.9	4.7–5.2
Flea infestation	4.4	4.2–4.6
Allergy	4.0	3.8–4.2
Lump	3.6	3.4–3.8
Pyoderma	3.4	3.2–3.6
Atopic/allergic dermatitis	3.1	2.9–3.3
Lameness	3.1	2.9–3.3
Conjunctivitis	3.0	2.8–3.2
Anal sac disease	2.5	2.3–2.6
Animal bite	2.5	2.3–2.7
Arthritis	2.4	2.3–2.6
Lipoma	2.3	2.1–2.5
Diarrhea	2.2	2.0–2.4
Heart murmur	2.2	2.1–2.4
Moist dermatitis	2.2	2.0–2.3
Periodontal disease	2.2	2.0–2.3
Vomiting	2.1	2.0–2.3
Obesity	2.0	1.8–2.2
Fungal otitis externa	2.0	1.8–2.1
Roundworm infection	1.9	1.8–2.1
Atopy	1.6	1.5–1.8
Cataract	1.6	1.4–1.7
Disk disease	1.6	1.5–1.7
Nuclear sclerosis	1.6	1.5–1.8
Pruritis	1.6	1.5–1.8

CI = confidence interval.

Table 2—The 25 most common disorders reported for 15,226 cats examined at private veterinary practices in the United States

Disorder	Prevalence (%)	95% CI
Dental calculus	24.2	23.6–24.9
Gingivitis	13.1	12.5–13.6
Healthy animal	9.5	9.1–10.0
Flea infestation	9.2	8.7–9.6
Otodectes spp infestation	7.4	7.0–7.9
Abscess	6.5	6.1–6.9
Respiratory tract infection	5.0	4.6–5.3
Cat bite	4.7	4.4–5.0
Tapeworm infection	3.3	3.1–3.6
Periodontal disease	3.0	2.7–3.2
Conjunctivitis	2.8	2.3–3.1
Feline miliary dermatitis	2.3	2.0–2.5
Otitis externa	2.3	2.1–2.6
Roundworm infection	2.3	2.1–2.6
Heart murmur	2.2	1.9–2.4
Vomiting	2.2	2.0–2.4
Renal disease	1.9	1.6–2.1
Diarrhea	1.8	1.6–2.0
Obesity	1.8	1.6–2.0
Animal bite	1.7	1.5–1.9
Dermatitis	1.7	1.5–1.9
Weight loss	1.6	1.4–1.8
Cystitis	1.5	1.3–1.7
Feline urologic syndrome	1.5	1.3–1.7
Loss of appetite	1.5	1.3–1.7

CI = confidence interval.

codes other than "healthy animal" reported during the study period). Many disorders were common to dogs and cats (eg, flea infestation, conjunctivitis, diarrhea, vomiting). Dogs were likely to be examined because of lameness, disk disease, lipoma, and allergic dermatitis, and cats were likely to be examined because of renal disease, cystitis, feline urologic syndrome, and inappetence.

Discussion

Results of a 1996 study[10] suggest that nearly 32% of US households owned at least 1 dog and 27% owned at least 1 cat, resulting in an estimated population of 59 million cats and 53 million dogs in the United States. In the same study, 67.7% of the cat-owning households and 85.3% of the dog-owning households reported visiting a veterinarian at least once during 1996. The present study was designed to obtain basic epidemiologic information about diseases in cats and dogs in the United States that are examined in private veterinary practice. With this information, veterinarians should be able to better focus on what is important to these populations. Veterinary researchers, for instance, could use this information to set priorities for disease investigation. Veterinary practitioners could use the information to better understand and anticipate conditions of importance to cats and dogs they examine in their practices. In addition, this information could help practitioners provide their clients with information on the most prevalent disorders in cats and dogs. Direct comparison of data collected for the study reported here and information from other sources is difficult, because to the authors' knowledge no other study has used comparable methods to collect similar comprehensive data from a large sample of cats and dogs in the United States.

In any epidemiologic study, it is important to determine how well the study population represents the population to which the results will be applied. Because of the absence of other information on the population of all cats and dogs in the United States examined at private veterinary practices, the authors are unable to determine the representativeness of the population included in the study reported here. The practitioners who participated were self-selected from all practitioners who used a particular practice management system and represented only about 3.5% of all companion animal practitioners who use this particular practice management system. Thus, if the populations of dogs and cats examined by practitioners who use this particular practice management system differ in disease distribution from the populations examined by practitioners who use other practice management systems or do not use practice management systems, then the authors' results may not be generally applicable.

Diagnostic reporting was not complete for all dogs and cats seen during the course of the study. Approximately 36% of the total unique animal records processed for the study contained at least 1 diagnostic code, but diagnostic codes were not provided for the remaining 64%. This figure is an overestimate of the magnitude of underreporting, however, because the total unique animal records included client transactions that did not involve examination of an animal (eg, pet food purchase, fecal examination). Because each participating practice had its own unique procedure and service codes (which were unfamiliar to the investigators), the authors could not determine from the practice records which animal records represented instances when an animal was not examined.

Underreporting of diagnoses is common to many disease studies and surveillance systems in human and veterinary medicine.[11-16] In the authors' pilot study,[a] there were no significant differences in type of disease (by category) reported when paper medical records were compared with computer records; however, the proportion of animals examined that were healthy was underreported in paper and computer records. Two studies of postoperative complications following elective surgery in dogs and cats reported variable levels of underreporting when computer records were compared with paper medical records.[17,18]

Two important limitations of the study reported here are the lack of case definitions and the collection of information on new (incident) and existing (prevalent) disorders. When interpreting trends in disease occurrence over time, criteria used to define a case can be critical to understanding the patterns observed. Because participation in this project was voluntary, the authors' priority was to collect comprehensive prevalence data that reflected the judgment of the practitioners involved without imposing constraints on their style or ability to practice. Consistent application of strict diagnostic criteria was not feasible; thus, the possibility of disease misclassification must be considered. Animals may have been assigned diagnostic codes for diseases or conditions they did not truly have or alternatively, may not have been assigned diagnostic codes for disorders that they truly did have. Because the practice of veterinary medicine is constrained by the availability of diagnostic testing resources, it is likely that disorders that required extensive or expensive diagnostic testing were underreported (ie, animals with these diseases were misclassified as not having the disease) and disorders that could be determined by physical examination alone were those most accurately reported.

Prevalence rates do not lend themselves as well to monitoring disease trends over time as do incidence rates, because prevalence rates are a function of the rate of new disease occurrence and the duration of disease. Incidence rates are the optimum measure for monitoring trends in disease occurrence in a population, because they reflect only the rate of new disease occurrence, and are not affected by the duration of the disease condition.

The study reported here could only have been accomplished with the use of computerized information systems by private veterinary practices. However, these information systems are based on an accounting paradigm and as such, are not optimal for collection of clinical data. Participants in the study were motivated to collect data for the study, but data collection for a study involving more practices would require information systems that capture clinical data in a more seamless fashion. Information systems and electronic tools for data capture are becoming increasingly sophisticated; perhaps with the adoption of fully integrated information systems, studies of this type will be more feasible and permit inclusion of a greater number of US practitioners.

The following veterinary practices participated in the study: Aggie Animal Clinic, Dixon, Calif; All Animals Veterinary Hospital, Sanford, NC; Animal Health Center, Casper, Wyo; Animal Hospital of Sullivan County, Ferndale, NY; Animal Medical Centre of Greensboro, Greensboro, NC; Ashby Animal Clinic, Harrisonburg, Va; Baring Blvd Veterinary Hospital, Sparks, Nev; Biddeford Animal Hospital, Biddeford, Me; Bijou Animal Hospital, Colorado Springs, Colo; Bountiful Small Animal Hospital, Bountiful, Utah; Bridge City Animal Hospital, Bridge City, Tex; Brookings-Harbor Veterinary Hospital, Brookings, Ore; Canyon Lake Veterinary Hospital, Rapid City, SD; Cat Care Clinic, Mishawaka, Ind; Cheektowaga Veterinary Hospital, Cheektowaga, NY; Claiborne Animal Clinic, Homer, La; College Blvd Animal Hospital, Overland Park, Kan; College Village Animal Clinic, Anchorage, Alaska; Companion Animal Hospital, Phenix City, Ala; Cortez Animal Clinic, Cortez, Colo; Countryside Veterinary Hospital Inc, Howell, Mich; Crossroads Animal Hospital, Burnsville, Minn; Faribault Veterinary Clinic, Faribault, Minn; Fullerton Animal Hospital, Fullerton, Calif; Guardian Animal Hospital, Ashland, Ky; Helena Veterinary Service, Helena, Mont; Howell Animal Hospital, Howell, Mich; Jimmie Davis Animal Hospital, Bossier City, La; Knollwood Animal Hospital, Lake Bluff, Ill; Lakewood Veterinary Hospital, Clinton Township, Mich; Lamoille Valley Veterinary Services, Hyde Park, Vt; Mesquite Veterinary Hospital, Catalina, Ariz; Metcalf 107 Animal Clinic, Overland Park, Kan; New Creation Veterinary Clinic, Ruston, La; Northwest Animal Hospital, Plymouth, Minn; Norwood Animal Hospital, Norwood, Mass; Parker Veterinary Hospital, Charlotte, NC; Perry Creek Animal Hospital, Sioux City, Iowa; Popish Veterinary Clinic, Casper, Wyo; Range Animal Hospital, Ironwood, Mich; Solomons Veterinary Clinic, Solomons, Md; Sparta Veterinary Clinic, Sparta, Wis; Sturbridge Veterinary Hospital, Sturbridge, Mass; The Pet Hospital, Big Rapids, Mich; Town & Country Animal Hospital, Jefferson City, Tenn; University Hills Animal Hospital, Denver, Colo; Veterinary Medical Associates, Visalia, Calif; Village Animal Hospital, Minnetonka, Minn; VT-NH Veterinary Clinic, Putney, Vt; Western Veterinary Service, Big Piney, Wyo; Willowdale Veterinary Center, Orange Park, Fla; Wilsonville Veterinary Clinic, Wilsonville, Ore.

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[b]Advanced Veterinary Systems, IDEXX Informatics Inc, Eau Claire, Wis.

[c]South Central included West and East South Central; Northeast included New England and Middle Atlantic; Pacific included Alaska and Hawaii.

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[f]Paradox, Borland International Inc, Scotts Valley, Calif.

[g]Access, Microsoft Corp, Redmond, Wash.

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Appendix

Criteria used for assigning body condition scores (BCS) in dogs and cats

		Criteria	
Score	**Area of evaluation**	**Dogs**	**Cats**
1 (thin)	Ribs	Easily palpable with no fat cover	Easily palpable with no fat cover
	Tailbase	Prominent raised bony structure with no SC tissue	Easily palpable bony prominences
	Abdomen	Severe tuck with accentuated hourglass shape	Severe tuck
2 (underweight)	Ribs	Easily palpable with minimal fat cover	Easily palpable with minimal fat cover
	Tailbase	Raised bony structure with little SC tissue	Easily palpable bony prominences
	Abdomen	Noticeable tuck with marked hourglass shape	Obvious waist
3 (ideal)	Ribs	Palpable with slight fat cover	Palpable with slight fat cover
	Tailbase	Smooth contour or some thickening; bony structures palpable under thin layer of SC fat	Not evaluated
	Abdomen	Noticeable tuck; well-proportioned lumbar waist	Well-proportioned waist; minimal abdominal fat pad
4 (overweight)	Ribs	Difficult to palpate; moderate fat cover	Difficult to palpate; moderate fat cover
	Tailbase	Smooth contour or some thickening; bony structures remain palpable	Not evaluated
	Abdomen	Little or no abdominal tuck or waist; back slightly broadened	Little or no waist; abdominal rounding; moderate abdominal fat pad
5 (obese)	Ribs	Very difficult to palpate; thick fat cover	Very difficult to palpate; thick fat cover
	Tailbase	Appears thickened; difficult to palpate bony structures	Not evaluated
	Abdomen	Pendulous ventral bulge; no waist; back markedly broadened; trough may form where epaxial areas bulge dorsally	Distended with extensive fat deposits; no waist; fat deposits over lumbar area and possibly over face and limbs