

## Supplementary Data

Table S1. Pet owner demographics.

|  |                               |                                |                                      |                                 |                             |
|--|-------------------------------|--------------------------------|--------------------------------------|---------------------------------|-----------------------------|
| <b>Gender</b>  | Female                        | 676/705 (95.9%)                |                                      |                                 |                             |
|  | Male                          | 25/705 (3.5%)                  |                                      |                                 |                             |
|  | Diverse                       | 4/705 (0.6%)                   |                                      |                                 |                             |
| <b>Age Median (IQR)</b>  | 39 (30, 50)                   |                                |                                      |                                 |                             |
| <b>Federal state</b>   | Baden-Wuerttemberg            | 71/693 (10.2%)                 |                                      |                                 |                             |
|  | Bavaria                       | 213/693 (30.7%)                |                                      |                                 |                             |
|  | Berlin                        | 11/693 (1.6%)                  |                                      |                                 |                             |
|  | Brandenburg                   | 15/693 (2.2%)                  |                                      |                                 |                             |
|  | Bremen                        | 9/693 (1.3%)                   |                                      |                                 |                             |
|  | Hamburg                       | 9/693 (1.3%)                   |                                      |                                 |                             |
|  | Hesse                         | 44/693 (6.3%)                  |                                      |                                 |                             |
|  | Mecklenburg-Western Pomerania | 11/693 (1.6%)                  |                                      |                                 |                             |
|  | Lower Saxony                  | 59/693 (8.5%)                  |                                      |                                 |                             |
|  | North-Rhine Westphalia        | 150/693 (21.6%)                |                                      |                                 |                             |
|  | Rhineland-Palatine            | 29/693 (4.2%)                  |                                      |                                 |                             |
|  | Saarland                      | 7/693 (1.0%)                   |                                      |                                 |                             |
|  | Saxon                         | 13/693 (1.9%)                  |                                      |                                 |                             |
|  | Saxony-Anhalt                 | 11/693 (1.6%)                  |                                      |                                 |                             |
|  | Schleswig-Holstein            | 35/693 (5.1%)                  |                                      |                                 |                             |
| Thuringia  | 6/693 (0.9%)                  |                                |                                      |                                 |                             |
| <b>Medical Training</b>  | Yes                           | 206/704 (29.3%)                |                                      |                                 |                             |
|  | No                            | 498/704 (70.7%)                |                                      |                                 |                             |
| <b>Field of medical education</b>                                    | Veterinary Medicine           | 93/205 (45.4%)                 |                                      |                                 |                             |
|  | Human Medicine                | 112/205 (54.6%)                |                                      |                                 |                             |
| <b>Comparison of educational level with medical education</b>        | Overall<br>n = 706            | Medical<br>Training<br>n = 206 | No<br>Medical<br>Training<br>n = 498 | Veterinary<br>Medicin<br>n = 93 | Human<br>Medicin<br>n = 112 |
| No degree (yet)  | 2 (0.3%)                      | 1 (0.5%)                       | 1 (0.2%)                             | 1 (1.1%)                        | 0 (0.0%)                    |
| Lower Certificate of Secondary Education (Hauptschulabschluss)       | 9 (1.3%)                      | 0 (0.0%)                       | 9 (1.8%)                             | 0 (0.0%)                        | 0 (0.0%)                    |
| Intermediate Certificate of Secondary Education (Realschulabschluss) | 71 (10.1%)                    | 19 (9.3%)                      | 52 (10.5%)                           | 6 (6.5%)                        | 13 (11.6%)                  |
| Higher Education Entrance Qualification (Fachhochschulreife)         | 48 (6.8%)                     | 13 (6.3%)                      | 34 (6.8%)                            | 5 (5.4%)                        | 7 (6.2%)                    |
| High School Diploma (Abitur)   | 102 (14.4%)                   | 37 (18.0%)                     | 65 (13.1%)                           | 23 (25.0%)                      | 14 (12.5%)                  |
| Vocational Training (Berufsausbildung)                               | 194 (27.5%)                   | 76 (37.1%)                     | 118 (23.7%)                          | 29 (31.5%)                      | 47 (42.0%)                  |
| University of Applied Sciences degree (Fachhochschulabschluss)       | 72 (10.2%)                    | 9 (4.4%)                       | 63 (12.7%)                           | 2 (2.2%)                        | 7 (6.2%)                    |
| University degree (Hochschulabschluss)                               | 201 (28.5%)                   | 47 (22.9%)                     | 151 (30.4%)                          | 23 (25.0%)                      | 24 (21.4%)                  |
| Other  | 7 (1.0%)                      | 3 (1.5%)                       | 4 (0.8%)                             | 3 (3.3%)                        | (0.0%)                      |

**Table S2. Demographic data of dogs and cats.**

|  |                         |                     |                     |
|--|-------------------------|---------------------|---------------------|
| <b>Animal species</b>                                | Dog                     | 463/708 (65.4%)     |                     |
|  | Cat                     | 245/708 (34.6%)     |                     |
| <b>Outdoor cat</b>                                   | Yes                     | 105/245 (42.9%)     |                     |
|  | No                      | 140/245 (57.1%)     |                     |
| <b>Breed</b>   | Purebred cat            | 210/239 (87.9%)     |                     |
|  | Mixed breed cat         | 29/239 (12.1%)      |                     |
|  | Purebred dog            | 333/462 (72.1%)     |                     |
|  | Mixed breed dog         | 129/462 (27.9%)     |                     |
| <b>Gender</b>  | <b>Overall, n = 708</b> | <b>Dog, n = 463</b> | <b>Cat, n = 245</b> |
| Female   | 144 (20.3%)             | 115 (24.8%)         | 29 (11.8%)          |
| Male   | 129 (18.2%)             | 111 (24.0%)         | 18 (7.3%)           |
| Female neutered                                      | 205 (29.0%)             | 120 (25.9%)         | 85 (34.7%)          |
| Male neutered  | 230 (32.5%)             | 117 (25.3%)         | 113 (46.1%)         |
| <b>Age</b>   | <b>Overall, n = 708</b> | <b>Dog, n = 463</b> | <b>Cat, n = 245</b> |
| 0-3 months   | 1 (0.1%)                | 1 (0.2%)            | 0 (0.0%)            |
| 4-6 months   | 11 (1.6%)               | 7 (1.5%)            | 4 (1.6%)            |
| 7-9 months   | 12 (1.7%)               | 8 (1.7%)            | 4 (1.6%)            |
| 10-11 months   | 12 (1.7%)               | 8 (1.7%)            | 4 (1.6%)            |
| 1 year   | 63 (8.9%)               | 42 (9.1%)           | 21 (8.6%)           |
| 2 years  | 84 (11.9%)              | 57 (12.3%)          | 27 (11.0%)          |
| 3 years  | 84 (11.9%)              | 49 (10.6%)          | 35 (14.3%)          |
| 4 years  | 59 (8.3%)               | 38 (8.2%)           | 21 (8.6%)           |
| 5 years  | 51 (7.2%)               | 36 (7.8%)           | 15 (6.1%)           |
| 6 years  | 53 (7.5%)               | 44 (9.5%)           | 9 (3.7%)            |
| 7 years  | 29 (4.1%)               | 24 (5.2%)           | 5 (2.0%)            |
| 8 years  | 37 (5.2%)               | 22 (4.8%)           | 15 (6.1%)           |
| 9 years  | 38 (5.4%)               | 26 (5.6%)           | 12 (4.9%)           |
| 10 years   | 40 (5.6%)               | 26 (5.6%)           | 14 (5.7%)           |
| 11 years   | 27 (3.8%)               | 19 (4.1%)           | 8 (3.3%)            |
| 12 years   | 31 (4.4%)               | 22 (4.8%)           | 9 (3.7%)            |
| 13 years   | 18 (2.5%)               | 12 (2.6%)           | 6 (2.4%)            |
| 14 years   | 15 (2.1%)               | 9 (1.9%)            | 6 (2.4%)            |
| 15 years   | 11 (1.6%)               | 6 (1.3%)            | 5 (2.0%)            |
| 16 years   | 9 (1.3%)                | 2 (0.4%)            | 7 (2.9%)            |
| 17 years   | 5 (0.7%)                | 1 (0.2%)            | 4 (1.6%)            |
| 18 years   | 4 (0.6%)                | 0 (0.0%)            | 4 (1.6%)            |
| 19 years   | 0                       | 0                   | 0                   |
| 20 years and older                                   | 3 (0.4%)                | 0 (0.0%)            | 3 (1.2%)            |
| Fully grown but age unknown                          | 2 (0.3%)                | 1 (0.2%)            | 1 (0.4%)            |
| Unfortunately, my animal passed away in the meantime | 9 (1.3%)                | 3 (0.6%)            | 6 (2.4%)            |
| <b>Age Median (IQR)</b>                              |                         | 5 (3, 9)            | 5 (3, 10)           |

**Table S3. Comparison of pet health insurance between dogs and cats.**

|                      | Overall<br>n = 708 | Dog<br>n = 463 | Cat<br>n = 245 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|----------------------|--------------------|----------------|----------------|----------------------|----------------------|----------------------------|---------------------|
| Pet health insurance |                    |                |                | < 0.001              | < 0.001              | 0.13                       | 0.07-1.00           |
| Yes                  | 174 (24.6%)        | 134 (28.9%)    | 40 (16.3%)     |                      |                      |                            |                     |
| No                   | 534 (75.4%)        | 329 (71.1%)    | 205 (83.7%)    |                      |                      |                            |                     |

<sup>1</sup>Pearson's Chi-squared test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup>CI = confidence interval of effect size

### Antibiotic administration

**Table S4. Owner expectation of antibiotic administration for different indications in dogs and cats.**

| Indication  | Administration<br>was expected<br>n = 580 | Administration<br>was not expected<br>n = 128 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|---|---|---|----------------------|----------------------|----------------------------|---------------------|
| Diarrhea (n = 107)                                | 78 (72.9%)                                | 29 (27.1%)                                    | 0.008                | 0.111                | 0.09                       | 0.00-1.00           |
| Vomiting (n = 59)                                 | 43 (72.9%)                                | 16 (27.1%)                                    | 0.060                | 0.190                | 0.06                       | 0.00-1.00           |
| Infection of the upper respiratory tract (n = 63) | 52 (82.5%)                                | 11 (17.5%)                                    | 0.894                | 0.894                | 0.00                       | 0.00-1.00           |
| Skin problems (n = 50)                            | 39 (78.0%)                                | 11 (22.0%)                                    | 0.455                | 0.662                | 0.00                       | 0.00-1.00           |
| Ear infection (n = 50)                            | 36 (72.0%)                                | 14 (28.0%)                                    | 0.059                | 0.190                | 0.06                       | 0.00-1.00           |
| Infection of the lower respiratory tract (n = 54) | 45 (83.3%)                                | 9 (16.7%)                                     | 0.779                | 0.890                | 0.00                       | 0.00-1.00           |
| Fever (n = 47)                                    | 39 (83.0%)                                | 8 (17.0%)                                     | 0.845                | 0.894                | 0.00                       | 0.00-1.00           |
| Wound infection/abscess/bite injury (n = 131)     | 111 (84.7%)                               | 20 (15.3%)                                    | 0.354                | 0.567                | 0.00                       | 0.00-1.00           |
| Castration/neutering (n = 42)                     | 40 (95.2%)                                | 2 (4.8%)                                      | 0.021                | 0.111                | 0.08                       | 0.00-1.00           |
| Surgery of the bones (n = 28)                     | 25 (89.3%)                                | 3 (10.7%)                                     | 0.301                | 0.536                | 0.01                       | 0.00-1.00           |
| Surgery on soft tissue (n = 69)                   | 64 (92.8%)                                | 5 (7.2%)                                      | 0.014                | 0.111                | 0.08                       | 0.00-1.00           |
| Dental treatment (n = 90)                         | 76 (84.4%)                                | 14 (15.6%)                                    | 0.506                | 0.674                | 0.00                       | 0.00-1.00           |
| Other surgery (n = 12)                            | 11 (91.7%)                                | 1 (8.3%)                                      | 0.704                | 0.866                | 0.00                       | 0.00-1.00           |
| Urinary tract infection (n = 74)                  | 64 (86.5%)                                | 10 (13.5%)                                    | 0.281                | 0.536                | 0.02                       | 0.00-1.00           |
| Eye problem (n = 34)                              | 24 (70.6%)                                | 10 (29.4%)                                    | 0.078                | 0.209                | 0.05                       | 0.00-1.00           |
| Other problem (n = 97)                            | 74 (76.3%)                                | 23 (23.7%)                                    | 0.121                | 0.276                | 0.04                       | 0.00-1.00           |

<sup>1</sup>Pearson's Chi-squared test; Fisher's exact test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup>CI = confidence interval of effect size

**Table S5. Duration and frequency of orally or locally administered antibiotics.**

| Over what time period was the antibiotic administered? |               |
|--|---------------|
| 1 day  | 3/633 (0.5%)  |
| 2 days   | 3/633 (0.5%)  |
| 3 days   | 20/633 (3.2%) |

|  |                 |
|--|-----------------|
| 4 days   | 13/633 (2.1%)   |
| 5 days   | 119/633 (18.8%) |
| 6 days   | 22/633 (3.5%)   |
| 7 days   | 148/633 (23.4%) |
| 8 days   | 19/633 (3.0%)   |
| 9 days   | 3/633 (0.5%)    |
| 10 days  | 132/633 (20.9%) |
| 11 days  | 3/633 (0.5%)    |
| 12 days  | 14/633 (2.2%)   |
| 13 days  | 0/633 (0.0%)    |
| 14 days  | 50/633 (7.9%)   |
| 15 days or longer  | 84/633 (13.3%)  |
| <b>How often were you supposed to administer the antibiotic per day?</b> |                 |
| Once   | 203/625 (32.5%) |
| 2 times  | 388/625 (62.1%) |
| 3 times  | 29/625 (4.6%)   |
| 4 times  | 2/625 (0.3%)    |
| 5 times  | 1/625 (0.2%)    |
| 6 times  | 1/625 (0.2%)    |
| More than 6 times  | 1/625 (0.2%)    |

**Table S6. Comparison between the type of injection and the number of injections administered.**

|                      | Overall<br>n = 155 | Long-acting<br>injection<br>n = 30 | Short-acting<br>injection<br>n = 125 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|----------------------|--------------------|------------------------------------|--------------------------------------|----------------------|----------------------|----------------------------|---------------------|
| Number of injections |                    |                                    |                                      | 0.315                | 0.315                | 0.16                       | 0.00-1.00           |
| Once                 | 77 (49.7%)         | 17 (56.7%)                         | 60 (48.0%)                           |                      |                      |                            |                     |
| 2 times              | 36 (23.2%)         | 12 (40.0%)                         | 24 (19.2%)                           |                      |                      |                            |                     |
| 3 times              | 17 (11.0%)         | 1 (3.3%)                           | 16 (12.8%)                           |                      |                      |                            |                     |
| 4 times              | 4 (2.6%)           | 0 (0.0%)                           | 4 (3.2%)                             |                      |                      |                            |                     |
| 5 times              | 6 (3.9%)           | 0 (0.0%)                           | 6 (4.8%)                             |                      |                      |                            |                     |
| 6 times              | 2 (1.3%)           | 0 (0.0%)                           | 2 (1.6%)                             |                      |                      |                            |                     |
| 7 times              | 5 (3.2%)           | 0 (0.0%)                           | 5 (4.0%)                             |                      |                      |                            |                     |
| 8 times              | 1 (0.6%)           | 0 (0.0%)                           | 1 (0.8%)                             |                      |                      |                            |                     |
| 9 times              | 0 (0.0%)           | 0 (0.0%)                           | 0 (0.0%)                             |                      |                      |                            |                     |
| 10 times             | 4 (2.6%)           | 0 (0.0%)                           | 4 (3.2%)                             |                      |                      |                            |                     |
| More than 10 times   | 3 (1.9%)           | 0 (0.0%)                           | 3 (2.4%)                             |                      |                      |                            |                     |

<sup>1</sup>Fisher's exact test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup> CI = confidence interval of effect size

**Table S7.** Systemic antibiotic administration for the different indications in dogs and cats.

| Indication                               | Ampicillin<br>n = 2 | Amoxicillin<br>n = 101 | Amoxicillin/Cl<br>avulanic acid<br>n = 221 | Cefalexin<br>n = 12 | Cefazolin<br>n = 1 | Cefovecin<br>n = 13 | Clindamycin<br>n = 18 | Doxycycline<br>n = 46 | Enrofloxacin<br>n = 18 |
|--|---------------------|------------------------|--|---------------------|--------------------|---------------------|-----------------------|-----------------------|------------------------|
| Diarrhea                                 | 1 (50.0%)           | 19 (18.8%)             | 25 (11.3%)                                 | 2 (16.7%)           | 0 (0.0%)           | 0 (0.0%)            | 3 (16.7%)             | 3 (6.5%)              | 3 (16.7%)              |
| Vomiting                                 | 1 (50.0%)           | 16 (15.8%)             | 15 (6.8%)                                  | 0 (0.0%)            | 0 (0.0%)           | 0 (0.0%)            | 1 (5.6%)              | 1 (2.2%)              | 2 (11.1%)              |
| Infection of the upper respiratory tract | 0 (0.0%)            | 7 (6.9%)               | 26 (11.8%)                                 | 0 (0.0%)            | 0 (0.0%)           | 1 (7.7%)            | 0 (0.0%)              | 10 (21.7%)            | 2 (11.1%)              |
| Skin problems                            | 0 (0.0%)            | 11 (10.9%)             | 15 (6.8%)                                  | 2 (16.7%)           | 0 (0.0%)           | 2 (15.4%)           | 4 (22.2%)             | 2 (4.3%)              | 1 (5.6%)               |
| Ear infection                            | 0 (0.0%)            | 6 (5.9%)               | 7 (3.2%)                                   | 0 (0.0%)            | 0 (0.0%)           | 1 (7.7%)            | 3 (16.7%)             | 2 (4.3%)              | 3 (16.7%)              |
| Infection of the lower respiratory tract | 0 (0.0%)            | 9 (8.9%)               | 18 (8.1%)                                  | 0 (0.0%)            | 0 (0.0%)           | 0 (0.0%)            | 0 (0.0%)              | 12 (26.1%)            | 2 (11.1%)              |
| Fever                                    | 0 (0.0%)            | 8 (7.9%)               | 17 (7.7%)                                  | 0 (0.0%)            | 0 (0.0%)           | 1 (7.7%)            | 0 (0.0%)              | 6 (13.0%)             | 3 (16.7%)              |
| Wound infection/abscess/bite injury      | 1 (50.0%)           | 20 (19.8%)             | 48 (21.7%)                                 | 3 (25.0%)           | 1 (100.0%)         | 1 (7.7%)            | 2 (11.1%)             | 5 (10.9%)             | 0 (0.0%)               |
| Castration/neutering                     | 0 (0.0%)            | 5 (5.0%)               | 16 (7.2%)                                  | 2 (16.7%)           | 0 (0.0%)           | 0 (0.0%)            | 0 (0.0%)              | 1 (2.2%)              | 0 (0.0%)               |
| Surgery of the bones                     | 0 (0.0%)            | 4 (4.0%)               | 11 (5.0%)                                  | 3 (25.0%)           | 0 (0.0%)           | 0 (0.0%)            | 1 (5.6%)              | 0 (0.0%)              | 0 (0.0%)               |
| Surgery on soft tissue                   | 0 (0.0%)            | 18 (17.8%)             | 25 (11.3%)                                 | 0 (0.0%)            | 0 (0.0%)           | 1 (7.7%)            | 1 (5.6%)              | 3 (6.5%)              | 2 (11.1%)              |
| Dental treatment                         | 0 (0.0%)            | 14 (13.9%)             | 33 (14.9%)                                 | 1 (8.3%)            | 0 (0.0%)           | 5 (38.5%)           | 6 (33.3%)             | 6 (13.0%)             | 3 (16.7%)              |
| Other surgery                            | 0 (0.0%)            | 2 (2.0%)               | 5 (2.3%)                                   | 1 (8.3%)            | 0 (0.0%)           | 0 (0.0%)            | 0 (0.0%)              | 0 (0.0%)              | 0 (0.0%)               |
| Urinary tract infection                  | 0 (0.0%)            | 11 (10.9%)             | 23 (10.4%)                                 | 0 (0.0%)            | 0 (0.0%)           | 4 (30.8%)           | 0 (0.0%)              | 1 (2.2%)              | 5 (27.8%)              |
| Eye problem                              | 0 (0.0%)            | 2 (2.0%)               | 4 (1.8%)                                   | 0 (0.0%)            | 0 (0.0%)           | 0 (0.0%)            | 0 (0.0%)              | 5 (10.9%)             | 0 (0.0%)               |
| Other problem                            | 0 (0.0%)            | 9 (8.9%)               | 30 (13.6%)                                 | 0 (0.0%)            | 0 (0.0%)           | 1 (7.7%)            | 5 (27.8%)             | 16 (34.8%)            | 2 (11.1%)              |

|  | Gentamicin<br>n = 1 | Marbofloxacin<br>n = 15 | Metronidazole<br>n = 47 | Penicillin<br>n = 2 | Pradofloxacin<br>n = 2 | Trimethoprim and<br>Sulfonamides<br>(TSO)<br>n = 6 | Other<br>n = 7 | Unknown<br>n = 242 |
|--|---------------------|-------------------------|-------------------------|---------------------|------------------------|--|----------------|--------------------|
| Diarrhea                                 | 1 (100.0%)          | 2 (13.3%)               | 23 (48.9%)              | 0 (0.0%)            | 0 (0.0%)               | 2 (33.3%)  | 1 (14.3%)      | 41 (16.9%)         |
| Vomiting                                 | 0 (0.0%)            | 0 (0.0%)                | 9 (19.1%)               | 0 (0.0%)            | 0 (0.0%)               | 2 (33.3%)  | 1 (14.3%)      | 25 (10.3%)         |
| Infection of the upper respiratory tract | 0 (0.0%)            | 1 (6.7%)                | 2 (4.3%)                | 0 (0.0%)            | 0 (0.0%)               | 0 (0.0%)   | 1 (14.3%)      | 20 (8.3%)          |
| Skin problems                            | 0 (0.0%)            | 1 (6.7%)                | 2 (4.3%)                | 0 (0.0%)            | 0 (0.0%)               | 0 (0.0%)   | 0 (0.0%)       | 16 (6.6%)          |
| Ear infection                            | 0 (0.0%)            | 1 (6.7%)                | 1 (2.1%)                | 0 (0.0%)            | 0 (0.0%)               | 0 (0.0%)   | 1 (14.3%)      | 20 (8.3%)          |
| Infection of the lower respiratory tract | 0 (0.0%)            | 2 (13.3%)               | 3 (6.4%)                | 0 (0.0%)            | 0 (0.0%)               | 1 (16.7%)  | 2 (28.6%)      | 14 (5.8%)          |
| Fever                                    | 0 (0.0%)            | 1 (6.7%)                | 4 (8.5%)                | 0 (0.0%)            | 0 (0.0%)               | 2 (33.3%)  | 0 (0.0%)       | 17 (7.0%)          |
| Wound infection/abscess/bite injury      | 0 (0.0%)            | 3 (20.0%)               | 3 (6.4%)                | 1 (50.0%)           | 1 (50.0%)              | 0 (0.0%)   | 0 (0.0%)       | 53 (21.9%)         |

|                         | Gentamicin<br>n = 1 | Marbofloxacin<br>n = 15 | Metronidazole<br>n = 47 | Penicillin<br>n = 2 | Pradofloxacin<br>n = 2 | Trimethoprim and<br>Sulfonamides<br>(TSO)<br>n = 6 | Other<br>n = 7 | Unknown<br>n = 242 |
|-------------------------|---------------------|-------------------------|-------------------------|---------------------|------------------------|--|----------------|--------------------|
| Castration/neutering    | 0 (0.0%)            | 1 (6.7%)                | 7 (14.9%)               | 0 (0.0%)            | 0 (0.0%)               | 1 (16.7%)  | 1 (14.3%)      | 17 (7.0%)          |
| Surgery of the bones    | 0 (0.0%)            | 0 (0.0%)                | 0 (0.0%)                | 0 (0.0%)            | 0 (0.0%)               | 1 (16.7%)  | 0 (0.0%)       | 10 (4.1%)          |
| Surgery on soft tissue  | 0 (0.0%)            | 3 (20.0%)               | 3 (6.4%)                | 1 (50.0%)           | 0 (0.0%)               | 1 (16.7%)  | 0 (0.0%)       | 22 (9.1%)          |
| Dental treatment        | 0 (0.0%)            | 2 (13.3%)               | 3 (6.4%)                | 1 (50.0%)           | 0 (0.0%)               | 0 (0.0%)   | 0 (0.0%)       | 29 (12.0%)         |
| Other surgery           | 0 (0.0%)            | 0 (0.0%)                | 0 (0.0%)                | 0 (0.0%)            | 0 (0.0%)               | 0 (0.0%)   | 1 (14.3%)      | 4 (1.7%)           |
| Urinary tract infection | 0 (0.0%)            | 4 (26.7%)               | 2 (4.3%)                | 0 (0.0%)            | 0 (0.0%)               | 2 (33.3%)  | 1 (14.3%)      | 30 (12.4%)         |
| Eye problem             | 0 (0.0%)            | 0 (0.0%)                | 4 (8.5%)                | 1 (50.0%)           | 0 (0.0%)               | 0 (0.0%)   | 3 (42.9%)      | 5 (2.1%)           |
| Other problem           | 0 (0.0%)            | 1 (6.7%)                | 13 (27.7%)              | 0 (0.0%)            | 1 (50.0%)              | 2 (33.3%)  | 1 (14.3%)      | 26 (10.7%)         |

**Table S8. 5-point Likert scale displaying veterinary education of pet owners and owner compliance with antibiotic administration. Comparison of data with medical training or no medical training.**

|  | Overall<br>n = 708 | Medical<br>training<br>n = 206 | No medical<br>training<br>n = 498 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|--|--------------------|--------------------------------|-----------------------------------|----------------------|----------------------|----------------------------|---------------------|
| <b>My veterinarian involved and advised me in the decision of the choice of the form of administration (tablets, liquid, injections, etc.) (n = 701/708)</b>                 |                    |                                |                                   | 0.001                | 0.007                | 0.14                       | 0.02-1.00           |
| Strongly disagree  | 219 (31.2%)        | 44 (21.5%)                     | 175 (35.6%)                       |                      |                      |                            |                     |
| Disagree   | 58 (8.3%)          | 14 (6.8%)                      | 44 (8.9%)                         |                      |                      |                            |                     |
| Neutral  | 73 (10.4%)         | 21 (10.2%)                     | 52 (10.6%)                        |                      |                      |                            |                     |
| Agree  | 92 (13.1%)         | 31 (15.1%)                     | 58 (11.8%)                        |                      |                      |                            |                     |
| Strongly agree   | 259 (36.9%)        | 95 (46.3%)                     | 163 (33.1%)                       |                      |                      |                            |                     |
| <b>I would have liked more education from my vet on how to best insert/use the antibiotic (for example, tablet insertion with food/treat/tablet dispenser) (n = 639/642)</b> |                    |                                |                                   | 0.269                | 0.645                | 0.04                       | 0.00-1.00           |
| Strongly disagree  | 333 (52.1%)        | 98 (53.0%)                     | 234 (51.9%)                       |                      |                      |                            |                     |
| Disagree   | 116 (18.2%)        | 34 (18.4%)                     | 81 (18.0%)                        |                      |                      |                            |                     |
| Neutral  | 89 (13.9%)         | 18 (9.7%)                      | 71 (15.7%)                        |                      |                      |                            |                     |
| Agree  | 48 (7.5%)          | 17 (9.2%)                      | 30 (6.7%)                         |                      |                      |                            |                     |
| Strongly agree   | 53 (8.3%)          | 18 (9.7%)                      | 35 (7.8%)                         |                      |                      |                            |                     |
| <b>My veterinarian has informed me about possible side effects (n = 704/708)</b>   |                    |                                |                                   | <0.001               | <0.001               | 0.17                       | 0.08-1.00           |
| Strongly disagree  | 224 (31.8%)        | 53 (25.7%)                     | 168 (34.0%)                       |                      |                      |                            |                     |
| Disagree   | 110 (15.6%)        | 35 (17.0%)                     | 75 (15.2%)                        |                      |                      |                            |                     |
| Neutral  | 101 (14.3%)        | 18 (8.7%)                      | 83 (16.8%)                        |                      |                      |                            |                     |
| Agree  | 88 (12.5%)         | 23 (11.2%)                     | 64 (13.0%)                        |                      |                      |                            |                     |
| Strongly agree   | 181 (25.7%)        | 77 (37.4%)                     | 104 (21.1%)                       |                      |                      |                            |                     |
| <b>My vet told me exactly how to give the antibiotic (for example, how often, how many tablets/injections, how long) (n = 701/708)</b>                                       |                    |                                |                                   | 0.925                | >0.999               | 0.00                       | 0.00-1.00           |
| Strongly disagree  | 10 (1.4%)          | 2 (1.0%)                       | 8 (1.6%)                          |                      |                      |                            |                     |
| Disagree   | 8 (1.1%)           | 2 (1.0%)                       | 6 (1.2%)                          |                      |                      |                            |                     |
| Neutral  | 34 (4.9%)          | 9 (4.4%)                       | 25 (5.1%)                         |                      |                      |                            |                     |
| Agree  | 88 (12.6%)         | 23 (11.2%)                     | 64 (13.0%)                        |                      |                      |                            |                     |
| Strongly agree   | 561 (80.0%)        | 169 (82.4%)                    | 389 (79.1%)                       |                      |                      |                            |                     |
| <b>I followed exactly the recommendations of my veterinarian for the antibiotic administration (n = 699/708)</b>   |                    |                                |                                   | 0.601                | 0.901                | 0.00                       | 0.00-1.00           |
| Strongly disagree  | 5 (0.7%)           | 2 (1.0%)                       | 3 (0.6%)                          |                      |                      |                            |                     |
| Disagree   | 3 (0.4%)           | 2 (1.0%)                       | 1 (0.2%)                          |                      |                      |                            |                     |
| Neutral  | 7 (1.0%)           | 2 (1.0%)                       | 5 (1.0%)                          |                      |                      |                            |                     |
| Agree  | 37 (5.3%)          | 12 (5.9%)                      | 25 (5.1%)                         |                      |                      |                            |                     |
| Strongly agree   | 647 (92.6%)        | 187 (91.2%)                    | 456 (93.1%)                       |                      |                      |                            |                     |
| <b>I stuck to the exact number of tablets/capsules per antibiotic administration (n = 582/584)</b>   |                    |                                |                                   | 0.582                | 0.901                | 0.00                       | 0.00-1.00           |
| Strongly disagree  | 2 (0.3%)           | 1 (0.6%)                       | 1 (0.2%)                          |                      |                      |                            |                     |
| Disagree   | 1 (0.2%)           | 0 (0.0%)                       | 1 (0.2%)                          |                      |                      |                            |                     |
| Neutral  | 0 (0.0%)           | 0 (0.0%)                       | 0 (0.0%)                          |                      |                      |                            |                     |
| Agree  | 12 (2.1%)          | 2 (1.2%)                       | 10 (2.5%)                         |                      |                      |                            |                     |
| Strongly agree   | 567 (97.4%)        | 169 (98.3%)                    | 395 (97.1%)                       |                      |                      |                            |                     |
| <b>I stuck to the exact amount of solution/suspension/paste to be given per antibiotic administration (n = 38/38)</b>  |                    |                                |                                   | >0.999               | >0.999               | 0.00                       | 0.00-1.00           |
| Strongly disagree  | 0 (0.0%)           | 0 (0.0%)                       | 0 (0.0%)                          |                      |                      |                            |                     |
| Disagree   | 0 (0.0%)           | 0 (0.0%)                       | 0 (0.0%)                          |                      |                      |                            |                     |
| Neutral  | 1 (2.6%)           | 0 (0.0%)                       | 1 (3.2%)                          |                      |                      |                            |                     |
| Agree  | 0 (0.0%)           | 0 (0.0%)                       | 0 (0.0%)                          |                      |                      |                            |                     |
| Strongly agree   | 37 (97.4%)         | 7 (100.0%)                     | 30 (96.8%)                        |                      |                      |                            |                     |
| <b>I followed the exact number of antibiotic doses per day (n = 640/642)</b>   |                    |                                |                                   | 0.542                | 0.901                | 0.00                       | 0.00-1.00           |

|  | Overall<br>n = 708 | Medical<br>training<br>n = 206 | No medical<br>training<br>n = 498 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|--|--------------------|--------------------------------|-----------------------------------|----------------------|----------------------|----------------------------|---------------------|
| Strongly disagree  | 2 (0.3%)           | 1 (0.5%)                       | 1 (0.2%)                          |                      |                      |                            |                     |
| Disagree   | 2 (0.3%)           | 0 (0.0%)                       | 2 (0.4%)                          |                      |                      |                            |                     |
| Neutral  | 2 (0.3%)           | 1 (0.5%)                       | 1 (0.2%)                          |                      |                      |                            |                     |
| Agree  | 16 (2.5%)          | 6 (3.2%)                       | 10 (2.2%)                         |                      |                      |                            |                     |
| Strongly agree   | 618 (96.6%)        | 179 (95.7%)                    | 436 (96.9%)                       |                      |                      |                            |                     |
| <b>I strictly followed the time intervals between antibiotic administrations (n = 636/642)</b>                                   |                    |                                |                                   | 0.067                | 0.267                | 0.00                       | 0.00-1.00           |
| Strongly disagree  | 1 (0.2%)           | 1 (0.5%)                       | 0 (0.0%)                          |                      |                      |                            |                     |
| Disagree   | 2 (0.3%)           | 0 (0.0%)                       | 2 (0.4%)                          |                      |                      |                            |                     |
| Neutral  | 35 (5.5%)          | 15 (8.0%)                      | 20 (4.5%)                         |                      |                      |                            |                     |
| Agree  | 186 (29.2%)        | 60 (32.1%)                     | 124 (27.8%)                       |                      |                      |                            |                     |
| Strongly agree   | 412 (64.8%)        | 111 (59.4%)                    | 300 (67.3%)                       |                      |                      |                            |                     |
| <b>I have suspended the administration of the antibiotic at least once because I was not able to administer it (n = 640/642)</b> |                    |                                |                                   | 0.247                | 0.645                | 0.04                       | 0.00-1.00           |
| Strongly disagree  | 579 (90.5%)        | 164 (87.7%)                    | 412 (91.6%)                       |                      |                      |                            |                     |
| Disagree   | 19 (3.0%)          | 9 (4.8%)                       | 10 (2.2%)                         |                      |                      |                            |                     |
| Neutral  | 8 (1.3%)           | 4 (2.1%)                       | 4 (0.9%)                          |                      |                      |                            |                     |
| Agree  | 13 (2.0%)          | 3 (1.6%)                       | 10 (2.2%)                         |                      |                      |                            |                     |
| Strongly agree   | 21 (3.3%)          | 7 (3.7%)                       | 14 (3.1%)                         |                      |                      |                            |                     |
| <b>I always went to the vet for the injections on the scheduled appointment (n = 173/182)</b>                                    |                    |                                |                                   | 0.939                | >0.999               | 0.00                       | 0.00-1.00           |
| Strongly disagree  | 14 (8.1%)          | 5 (10.6%)                      | 9 (7.2%)                          |                      |                      |                            |                     |
| Disagree   | 1 (0.6%)           | 0 (0.0%)                       | 1 (0.8%)                          |                      |                      |                            |                     |
| Neutral  | 4 (2.3%)           | 1 (2.1%)                       | 3 (2.4%)                          |                      |                      |                            |                     |
| Agree  | 4 (2.3%)           | 1 (2.1%)                       | 3 (2.4%)                          |                      |                      |                            |                     |
| Strongly agree   | 150 (86.7%)        | 40 (85.1%)                     | 109 (87.2%)                       |                      |                      |                            |                     |
| <b>I skipped an injection at least once and did not go to the vet (n = 177/182)</b>  |                    |                                |                                   | >0.999               | >0.999               | 0.00                       | 0.00-1.00           |
| Strongly disagree  | 173 (97.7%)        | 49 (100.0%)                    | 123 (96.9%)                       |                      |                      |                            |                     |
| Disagree   | 2 (1.1%)           | 0 (0.0%)                       | 2 (1.6%)                          |                      |                      |                            |                     |
| Neutral  | 1 (0.6%)           | 0 (0.0%)                       | 1 (0.8%)                          |                      |                      |                            |                     |
| Agree  | 0 (0.0%)           | 0 (0.0%)                       | 0 (0.0%)                          |                      |                      |                            |                     |
| Strongly agree   | 1 (0.6%)           | 0 (0.0%)                       | 1 (0.8%)                          |                      |                      |                            |                     |

<sup>1</sup>Pearson's Chi-squared test; Fisher's exact test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup>CI = confidence interval of effect size

**Table S9. Comparison between medical training and hand washing or wearing gloves.**

|  | Overall<br>n = 600 | Medical<br>training<br>n = 178 | No medical<br>training<br>n = 420 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|--|--------------------|--------------------------------|-----------------------------------|----------------------|----------------------|----------------------------|---------------------|
| <b>Did you wash your hands immediately after administering the antibiotic?</b> |                    |                                |                                   | 0.014                | 0.014                | 0.11                       | 0.00-1.00           |
| Yes  | 336 (56.0%)        | 111 (62.4%)                    | 224 (53.3%)                       |                      |                      |                            |                     |
| No   | 247 (41.2%)        | 59 (33.1%)                     | 187 (44.5%)                       |                      |                      |                            |                     |
| No, but I wore gloves  | 4 (0.7%)           | 3 (1.7%)                       | 1 (0.2%)                          |                      |                      |                            |                     |
| Yes and I wore gloves  | 13 (2.2%)          | 5 (2.8%)                       | 8 (1.9%)                          |                      |                      |                            |                     |

<sup>1</sup>Fisher's exact test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup> CI = confidence interval of effect size

**Table S10: Adverse reactions and premature discontinuation of administration**

|  |   |                 |
|--|---|-----------------|
| <b>Did you stop antibiotic administration before the duration of use indicated by your veterinarian was completed? (n = 706/708)</b>         | Yes                                     | 29/706 (4.1%)   |
|  | No                                      | 677/706 (95.9%) |
| <b>What was the reason for stopping the administration early? (Multiple answers possible)</b>  | Difficulties with ingestion/application | 7/29 (24.1%)    |
|  | Lack of time                            | 0               |
|  | Side effects have occurred              | 9/29 (31.0%)    |
|  | Fear of potential side effects          | 2/29 (6.9%)     |
|  | My dog/cat had already recovered        | 2/29 (6.9%)     |
|  | Consultation with my veterinarian       | 8/29 (27.6%)    |
|  | Other reason                            | 5/29 (17.2%)    |
| <b>Did your animal experience any side effects that may have occurred as a result of the administration of the antibiotic? (n = 622/708)</b> | Yes                                     | 145/622 (21.9%) |
|  | No                                      | 517/622 (78.1%) |
| <b>What side effects have occurred? (Multiple answers possible)</b>  | Diarrhea                                | 87/145 (60.0%)  |
|  | Vomiting                                | 25/145 (17.2%)  |
|  | Allergic reaction                       | 25/145 (17.2%)  |
|  | Other side effect                       | 51/145 (35.2%)  |

**Table S11: Culture and sensitivity testing before antibiotic administration**

|   |  |                 |
|---|--|-----------------|
| <b>Did your veterinarian perform any tests prior to administering the antibiotic, based on the results of which the antibiotic was prescribed/administered? (Multiple answers possible)</b> | No   | 364/708 (51.4%) |
|   | Yes, there were changes in the blood count   | 97/708 (13.7%)  |
|   | Yes, there were changes in the X-ray images  | 26/708 (3.7%)   |
|   | Yes, changes were present in the urine analysis  | 54/708 (7.6%)   |
|   | Yes, changes were present in the ultrasound examination  | 41/708 (5.8%)   |
|   | Yes, changes were present in a microscopic examination   | 71/708 (10.0%)  |
|   | Yes, changes were present in other examinations  | 124/708 (17.5%) |
|   | Yes, but i do not know what test or changes exactly  | 17/708 (2.4%)   |
|   | I do not know  | 31/708 (4.4%)   |
|   | <b>Was a culture with resistance test or other tests for pathogen detection performed prior to antibiotic administration/prescription? (n = 648/708)</b> | Yes             |
| No  |  | 523/648 (80.7%) |

**Table S12: Comparison between antibiotic and C&S.**

|  | <b>Overall<br/>n = 472</b> | <b>C&amp;S<br/>n = 106</b> | <b>No C&amp;S<br/>n = 366</b> | <b>p-value<sup>1</sup></b> | <b>q-value<sup>2</sup></b> | <b>Cramer's<br/>V<sup>3</sup></b> | <b>95% CI<sup>4</sup></b> |
|--|----------------------------|----------------------------|-------------------------------|----------------------------|----------------------------|-----------------------------------|---------------------------|
|  |                            |                            |                               | < 0.001                    | < 0.001                    | 0.20                              | 0.12-1.00                 |
| Kein Reserveantibiotikum<br>(Other antibiotics)                                | 430 (100.0%)               | 85 (19.8%)                 | 345 (80.2%)                   |                            |                            |                                   |                           |
| Reserveantibiotikum<br>(Fluorochinolones and 3rd<br>generation cephalosporins) | 42 (100.0%)                | 21 (50.0%)                 | 21 (50.0%)                    |                            |                            |                                   |                           |

<sup>1</sup>Pearson's Chi-squared test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup>CI = confidence interval of effect size

**Table S13: Comparison between reason and C&S.**

|  | Overall<br>n= 648 | C&S<br>n = 125 | No C&S<br>n = 523 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|--|-------------------|----------------|-------------------|----------------------|----------------------|----------------------------|---------------------|
| Diarrhea                                 | 100 (15.4%)       | 20 (16.0%)     | 80 (15.3%)        | 0.890                | > 0.999              | 0.00                       | 0.00-1.00           |
| Vomiting                                 | 55 (8.5%)         | 6 (4.8%)       | 49 (9.4%)         | 0.110                | 0.439                | 0.05                       | 0.00-1.00           |
| Infection of the upper respiratory tract | 59 (9.1%)         | 12 (9.6%)      | 47 (9.0%)         | 0.863                | > 0.999              | 0.00                       | 0.00-1.00           |
| Skin problems                            | 47 (7.3%)         | 10 (8.0%)      | 37 (7.1%)         | 0.703                | > 0.999              | 0.00                       | 0.00-1.00           |
| Ear infection                            | 46 (7.1%)         | 17 (13.6%)     | 29 (5.5%)         | 0.003                | 0.019                | 0.12                       | 0.04-1.00           |
| Infection of the lower respiratory tract | 53 (8.2%)         | 14 (11.2%)     | 39 (7.5%)         | 0.202                | 0.538                | 0.04                       | 0.00-1.00           |
| Fever                                    | 43 (6.6%)         | 7 (5.6%)       | 36 (6.9%)         | 0.693                | > 0.999              | 0.00                       | 0.00-1.00           |
| Wound infection/abscess/bite injury      | 127 (19.6%)       | 21 (16.8%)     | 106 (20.3%)       | 0.452                | > 0.999              | 0.00                       | 0.00-1.00           |
| Castration/neutering                     | 38 (5.9%)         | 6 (4.8%)       | 32 (6.1%)         | 0.676                | > 0.999              | 0.00                       | 0.00-1.00           |
| Surgery of the bones                     | 26 (4.0%)         | 2 (1.6%)       | 24 (4.6%)         | 0.201                | 0.538                | 0.05                       | 0.00-1.00           |
| Surgery on soft tissue                   | 58 (9.0%)         | 11 (8.8%)      | 47 (9.0%)         | > 0.999              | > 0.999              | 0.00                       | 0.00-1.00           |
| Dental treatment                         | 79 (12.2%)        | 6 (4.8%)       | 73 (14.0%)        | 0.004                | 0.019                | 0.10                       | 0.02-1.00           |
| Other surgery                            | 10 (1.5%)         | 2 (1.6%)       | 8 (1.5%)          | > 0.999              | > 0.999              | 0.00                       | 0.00-1.00           |
| Urinary tract infection                  | 62 (9.6%)         | 27 (21.6%)     | 35 (6.7%)         | < 0.001              | < 0.001              | 0.20                       | 0.13-1.00           |
| Eye problem                              | 32 (4.9%)         | 6 (4.8%)       | 26 (5.0%)         | > 0.999              | > 0.999              | 0.00                       | 0.00-1.00           |
| Other problem                            | 88 (13.6%)        | 15 (12.0%)     | 73 (14.0%)        | 0.663                | > 0.999              | 0.00                       | 0.00-1.00           |

<sup>1</sup>Fisher's exact test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup>CI = confidence interval of effect size

**Table S14: 5-point Likert scale regarding preferred route for systemic antibiotic administration comparing dogs and cats.**

|                                  | Overall<br>n = 708 | Dog<br>n = 463 | Cat<br>n = 245 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|----------------------------------|--------------------|----------------|----------------|----------------------|----------------------|----------------------------|---------------------|
| <b>Tablets</b>                   |                    |                |                | < 0.001              | < 0.001              | 0.28                       | 0.21-1.00           |
| Not at all                       | 51 (7.2%)          | 21 (4.5%)      | 30 (12.2%)     |                      |                      |                            |                     |
| Little                           | 39 (5.5%)          | 11 (2.4%)      | 28 (11.4%)     |                      |                      |                            |                     |
| Neutral                          | 72 (10.2%)         | 35 (7.6%)      | 37 (15.1%)     |                      |                      |                            |                     |
| Strong                           | 175 (24.7%)        | 119 (25.7%)    | 56 (22.9%)     |                      |                      |                            |                     |
| Very strong                      | 371 (52.4%)        | 277 (59.8%)    | 94 (38.4%)     |                      |                      |                            |                     |
| <b>Capsules</b>                  |                    |                |                | < 0.001              | < 0.001              | 0.26                       | 0.18-1.00           |
| Not at all                       | 130 (18.4%)        | 62 (13.4%)     | 68 (27.8%)     |                      |                      |                            |                     |
| Little                           | 97 (13.7%)         | 49 (10.6%)     | 48 (19.6%)     |                      |                      |                            |                     |
| Neutral                          | 174 (24.6%)        | 112 (24.2%)    | 62 (25.3%)     |                      |                      |                            |                     |
| Strong                           | 132 (18.6%)        | 99 (21.4%)     | 33 (13.5%)     |                      |                      |                            |                     |
| Very strong                      | 175 (24.7%)        | 141 (30.5%)    | 34 (13.9%)     |                      |                      |                            |                     |
| <b>Solution/suspension/paste</b> |                    |                |                | 0.010                | 0.014                | 0.11                       | 0.00-1.00           |
| Not at all                       | 172 (24.3%)        | 123 (26.6%)    | 49 (20.0%)     |                      |                      |                            |                     |
| Little                           | 112 (15.8%)        | 77 (16.6%)     | 35 (14.3%)     |                      |                      |                            |                     |
| Neutral                          | 140 (19.8%)        | 97 (21.0%)     | 43 (17.6%)     |                      |                      |                            |                     |
| Strong                           | 126 (17.8%)        | 67 (14.5%)     | 59 (24.1%)     |                      |                      |                            |                     |
| Very strong                      | 158 (22.3%)        | 99 (21.4%)     | 59 (24.1%)     |                      |                      |                            |                     |

|                               | Overall<br>n = 708 | Dog<br>n = 463 | Cat<br>n = 245 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|-------------------------------|--------------------|----------------|----------------|----------------------|----------------------|----------------------------|---------------------|
| <b>Short-acting injection</b> |                    |                |                | 0.011                | 0.014                | 0.11                       | 0.00-1.00           |
| Not at all                    | 200 (28.2%)        | 148 (32.0%)    | 52 (21.2%)     |                      |                      |                            |                     |
| Little                        | 147 (20.8%)        | 89 (19.2%)     | 58 (23.7%)     |                      |                      |                            |                     |
| Neutral                       | 141 (19.9%)        | 94 (20.3%)     | 47 (19.2%)     |                      |                      |                            |                     |
| Strong                        | 105 (14.8%)        | 58 (12.5%)     | 47 (19.2%)     |                      |                      |                            |                     |
| Very strong                   | 115 (16.2%)        | 74 (16.0%)     | 41 (16.7%)     |                      |                      |                            |                     |
| <b>Long-acting injection</b>  |                    |                |                | 0.019                | 0.019                | 0.10                       | 0.00-1.00           |
| Not at all                    | 142 (20.1%)        | 100 (21.6%)    | 42 (17.1%)     |                      |                      |                            |                     |
| Little                        | 75 (10.6%)         | 50 (10.8%)     | 25 (10.2%)     |                      |                      |                            |                     |
| Neutral                       | 122 (17.2%)        | 86 (18.6%)     | 36 (14.7%)     |                      |                      |                            |                     |
| Strong                        | 154 (21.8%)        | 106 (22.9%)    | 48 (19.6%)     |                      |                      |                            |                     |
| Very strong                   | 215 (30.4%)        | 121 (26.1%)    | 94 (38.4%)     |                      |                      |                            |                     |

<sup>1</sup>Pearson's Chi-squared test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup>CI = confidence interval of effect size

**Table S15: Tablet administration**

|   | Overall<br>n = 706 | Dog<br>n = 462 | Cat<br>n = 244 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% IC              |
|---|--------------------|----------------|----------------|----------------------|----------------------|----------------------------|---------------------|
| <b>How well does your dog/cat take tablets?</b>   |                    |                |                | < 0.001              | < 0.001              | 0.32                       | 0.25-1.00           |
| Not at all  | 29 (4.1%)          | 8 (1.7%)       | 21 (8.6%)      |                      |                      |                            |                     |
| Rather less good  | 67 (9.5%)          | 24 (5.2%)      | 43 (17.6%)     |                      |                      |                            |                     |
| Neutral   | 75 (10.6%)         | 38 (8.2%)      | 37 (15.2%)     |                      |                      |                            |                     |
| Rather good   | 141 (20.0%)        | 88 (19.0%)     | 53 (21.7%)     |                      |                      |                            |                     |
| Very good   | 394 (55.8%)        | 304 (65.8%)    | 90 (36.9%)     |                      |                      |                            |                     |
|   | Overall<br>n = 576 | Dog<br>n = 360 | Cat<br>n = 216 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
| <b>Does your dog/cat tolerate liquid/paste medication (solution/suspension/paste) better than tablets/capsules?</b> |                    |                |                | < 0.001              | < 0.001              | 0.18                       | 0.11-1.00           |
| Yes   | 154 (26.7%)        | 73 (20.3%)     | 81 (37.5%)     |                      |                      |                            |                     |
| No  | 422 (73.3%)        | 287 (79.7%)    | 135 (62.5%)    |                      |                      |                            |                     |
|   | Overall<br>n = 567 | Dog<br>n = 390 | Cat<br>n = 177 | p-value <sup>1</sup> | q-value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
| <b>Is your pet's ability to take tablets related to the taste of the medication?</b>                                |                    |                |                | 0.003                | 0.003                | 0.12                       | 0.04-1.00           |
| Yes   | 289 (51.0%)        | 182 (46.7%)    | 107 (60.5%)    |                      |                      |                            |                     |
| No  | 278 (49.0%)        | 208 (53.3%)    | 70 (39.5%)     |                      |                      |                            |                     |

<sup>1</sup>Pearson's Chi-squared test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup>CI = confidence interval of effect size

**Table S16: 5-point Likert scale regarding influencing factors on antibiotic administration comparing dogs and cats.**

|  | <b>Overall<br/>n = 708</b> | <b>Dog<br/>n = 463</b> | <b>Cat<br/>n = 245</b> | <b>p-<br/>value<sup>1</sup></b> | <b>q-<br/>value<sup>2</sup></b> | <b>Cramer's<br/>V<sup>3</sup></b> | <b>95% CI<sup>4</sup></b> |
|--|----------------------------|------------------------|------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------|
| <b>Easy form of administration</b>                       |                            |                        |                        | 0.001                           | 0.004                           | 0.14                              | 0.03-1.00                 |
| Not at all important                                     | 54 (7.6%)                  | 40 (8.6%)              | 14 (5.7%)              |                                 |                                 |                                   |                           |
| Not very important                                       | 45 (6.4%)                  | 35 (7.6%)              | 10 (4.1%)              |                                 |                                 |                                   |                           |
| Somewhat important                                       | 111 (15.7%)                | 85 (18.4%)             | 26 (10.6%)             |                                 |                                 |                                   |                           |
| Very important   | 175 (24.7%)                | 115 (24.8%)            | 60 (24.5%)             |                                 |                                 |                                   |                           |
| Extremely important                                      | 323 (45.6%)                | 188 (40.6%)            | 135 (55.1%)            |                                 |                                 |                                   |                           |
| <b>Costs</b>   |                            |                        |                        | 0.004                           | 0.007                           | 0.13                              | 0.00-1.00                 |
| Not at all important                                     | 200 (28.2%)                | 116 (25.1%)            | 84 (34.3%)             |                                 |                                 |                                   |                           |
| Not very important                                       | 165 (23.3%)                | 100 (21.6%)            | 65 (26.5%)             |                                 |                                 |                                   |                           |
| Somewhat important                                       | 216 (30.5%)                | 152 (32.8%)            | 64 (26.1%)             |                                 |                                 |                                   |                           |
| Very important   | 86 (12.1%)                 | 61 (13.2%)             | 25 (10.2%)             |                                 |                                 |                                   |                           |
| Extremely important                                      | 41 (5.8%)                  | 34 (7.3%)              | 7 (2.9%)               |                                 |                                 |                                   |                           |
| <b>Tolerability (potential side effects)</b>             |                            |                        |                        | 0.002                           | 0.004                           | 0.13                              | 0.00-1.00                 |
| Not at all important                                     | 1 (0.1%)                   | 1 (0.2%)               | 0 (0.0%)               |                                 |                                 |                                   |                           |
| Not very important                                       | 2 (0.3%)                   | 2 (0.4%)               | 0 (0.0%)               |                                 |                                 |                                   |                           |
| Somewhat important                                       | 34 (4.8%)                  | 13 (2.8%)              | 21 (8.6%)              |                                 |                                 |                                   |                           |
| Very important   | 159 (22.5%)                | 97 (21.0%)             | 62 (25.3%)             |                                 |                                 |                                   |                           |
| Extremely important                                      | 512 (72.3%)                | 350 (75.6%)            | 162 (66.1%)            |                                 |                                 |                                   |                           |
| <b>Avoiding the development of antibiotic resistance</b> |                            |                        |                        | 0.105                           | 0.168                           | 0.07                              | 0.00-1.00                 |
| Not at all important                                     | 4 (0.6%)                   | 3 (0.6%)               | 1 (0.4%)               |                                 |                                 |                                   |                           |
| Not very important                                       | 9 (1.3%)                   | 8 (1.7%)               | 1 (0.4%)               |                                 |                                 |                                   |                           |
| Somewhat important                                       | 56 (7.9%)                  | 30 (6.5%)              | 26 (10.6%)             |                                 |                                 |                                   |                           |
| Very important   | 157 (22.2%)                | 97 (21.0%)             | 60 (24.5%)             |                                 |                                 |                                   |                           |
| Extremely important                                      | 482 (68.1%)                | 325 (70.2%)            | 157 (64.1%)            |                                 |                                 |                                   |                           |
| <b>Efficacy</b>  |                            |                        |                        | 0.684                           | 0.684                           | 0.00                              | 0.00-1.00                 |
| Not at all important                                     | 0 (0.0%)                   | 0 (0.0%)               | 0 (0.0%)               |                                 |                                 |                                   |                           |
| Not very important                                       | 0 (0.0%)                   | 0 (0.0%)               | 0 (0.0%)               |                                 |                                 |                                   |                           |
| Somewhat important                                       | 1 (0.1%)                   | 1 (0.2%)               | 0 (0.0%)               |                                 |                                 |                                   |                           |
| Very important   | 44 (6.2%)                  | 31 (6.7%)              | 13 (5.3%)              |                                 |                                 |                                   |                           |
| Extremely important                                      | 663 (93.6%)                | 431 (93.1%)            | 232 (94.7%)            |                                 |                                 |                                   |                           |
| <b>Recommendation of my veterinarian</b>                 |                            |                        |                        | 0.495                           | 0.565                           | 0.00                              | 0.00-1.00                 |
| Not at all important                                     | 10 (1.4%)                  | 7 (1.5%)               | 3 (1.2%)               |                                 |                                 |                                   |                           |
| Not very important                                       | 22 (3.1%)                  | 12 (2.6%)              | 10 (4.1%)              |                                 |                                 |                                   |                           |
| Somewhat important                                       | 110 (15.5%)                | 76 (16.4%)             | 34 (13.9%)             |                                 |                                 |                                   |                           |
| Very important   | 275 (38.8%)                | 172 (37.1%)            | 103 (42.0%)            |                                 |                                 |                                   |                           |
| Extremely important                                      | 291 (41.1%)                | 196 (42.3%)            | 95 (38.8%)             |                                 |                                 |                                   |                           |
| <b>Tastefulness of the antibiotic</b>                    |                            |                        |                        | <0.001                          | <0.001                          | 0.25                              | 0.18-1.00                 |
| Not at all important                                     | 156 (22.0%)                | 129 (27.9%)            | 27 (11.0%)             |                                 |                                 |                                   |                           |
| Not very important                                       | 126 (17.8%)                | 98 (21.2%)             | 28 (11.4%)             |                                 |                                 |                                   |                           |
| Somewhat important                                       | 223 (31.5%)                | 129 (27.9%)            | 94 (38.4%)             |                                 |                                 |                                   |                           |
| Very important   | 122 (17.2%)                | 63 (13.6%)             | 59 (24.1%)             |                                 |                                 |                                   |                           |
| Extremely important                                      | 81 (11.4%)                 | 44 (9.5%)              | 37 (15.1%)             |                                 |                                 |                                   |                           |
| <b>Avoidance of „reserve antibiotics“</b>                |                            |                        |                        | 0.307                           | 0.409                           | 0.03                              | 0.00-1.00                 |
| Not at all important                                     | 23 (3.2%)                  | 15 (3.2%)              | 8 (3.3%)               |                                 |                                 |                                   |                           |
| Not very important                                       | 32 (4.5%)                  | 18 (3.9%)              | 14 (5.7%)              |                                 |                                 |                                   |                           |
| Somewhat important                                       | 145 (20.5%)                | 98 (21.2%)             | 47 (19.2%)             |                                 |                                 |                                   |                           |

|                     | Overall<br>n = 708 | Dog<br>n = 463 | Cat<br>n = 245 | p-<br>value <sup>1</sup> | q-<br>value <sup>2</sup> | Cramer's<br>V <sup>3</sup> | 95% CI <sup>4</sup> |
|---------------------|--------------------|----------------|----------------|--------------------------|--------------------------|----------------------------|---------------------|
| Very important      | 192 (27.1%)        | 116 (25.1%)    | 76 (31.0%)     |                          |                          |                            |                     |
| Extremely important | 316 (44.6%)        | 216 (46.7%)    | 100 (40.8%)    |                          |                          |                            |                     |

<sup>1</sup>Pearson's Chi-squared test; Fisher's exact test

<sup>2</sup>False discovery rate correction for multiple testing

<sup>3</sup>Interpretation: > 0.25 very strong, > 0.15 strong, > 0.10 moderate, > 0.05 weak, > 0 no or very weak association [27]

<sup>4</sup>CI = confidence interval of effect size