and the best accuracy (53/74 [72%] within $\pm 10\%$).
Of the predictive equations tested, those based upon MER and TBW predict initial EI requirement for weight loss

better than those based upon RER or SBW. Factoring in sex and neuter status improves the accuracy of predictions, and such equations can be easily used in general practice.

Proof of longer life?: Exceptional longevity in a cohort of 39 Labrador retrievers

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The aim of this study was to describe the longevity of 39 pedigree adult neutered Labrador retrievers enrolled in to one study group with a median age of 6.5 years at the start of the study on 16 July 2004. As of 01 October 2015, 1 dog remained alive. The longevity of this group of dogs was compared to 3 other groups of pedigree Labrador retrievers taken from previously published studies:

- Longevity study group fed to maintain a body condition score between 2 and 4 on a 5-point scale
- Kennel Club (KC) survey dogs owned as pets and by

- breeders and kept by owners/breeders
- 'Restricted' group fed 25% less than a sibling pair in 'control' group
- 'Control' group initially fed ad libitum and then fed a restricted amount of food to prevent excessive weight gain

After excluding 32 KC survey dogs that died at <3.50 years of age, Kaplan-Meier analysis revealed significant differences in median survival time (MST) ($P<0.00001$) with the study group living longer than each of the other groups.

In spite of the limitation of using historical control groups, this study shows that the study group lived significantly longer than previously published Labradors. The reason is unclear but it may be that life-long maintenance of lean body mass and attenuated accumulation of body fat are key factors in achieving a longer lifespan. These Labradors had a combination of a high quality plane of nutrition with appropriate husbandry and healthcare and a greater than expected proportion of Labrador retrievers living well beyond that of the expected breed lifespan. Further work will include Cox proportional hazards regression analysis to identify factors associated with longevity, including gender, neuter status and age at neutering, as well as to include data from other published studies.

Group	N	Descriptive statistics		Kaplan-Meier analysis	
		Median age	(Min–Max)	MST*	(95% CI)
1. Longevity study	39	14.01	(9.68–17.90)	14.01	(13.18–14.77)
2. KC survey	574	12.25	(0.17–19.00)	12.58*	(12.17–12.92)
3. 'Restricted'	24	13.09	(4.30–14.56)	13.00*	(12.38–13.50)
4. 'Control'	24	11.16	(3.50–13.29)	11.14	(10.80–11.99)

*Overall $P<0.0001$; all pairs significantly different (≤ 0.004) from one another other than * ($P=0.5$)

Prevalence and clinical significance of ESBL/AmpC producing Enterobacteriaceae from companion animals, N-W England

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Multidrug resistant (MDR) *Escherichia coli* and other *Enterobacteriaceae* are known to be emerging in companion animals. Particularly concerning is the production of

extended-spectrum beta-lactamases (ESBL) and/or AmpC beta-lactamases, which give resistance to all clinical relevant extended-spectrum cephalosporins. Furthermore, the lack of specific guidelines regarding the management of ESBL/AmpC animal infections, leads to an important dilemma faced by the veterinary microbiologist on how to correctly advise clinicians on their clinical significance and therefore when is appropriate to treat these isolates. Although ESBL/AmpC producing *E. coli* can be associated with disease, some animals may only be colonised but not infected with these organisms and it is critical to identify these cases in order to avoid unnecessary use of antimicrobials in only colonised patients.

ESBL and AmpC beta-lactamase producing *E. coli* are routinely found in clinical specimens submitted to our Microbiology Diagnostic laboratory and their prevalence seems to be increasing. Six hundred and seventeen *Enterobacteriaceae* (n=617) were obtained from companion animal

clinical specimens between January 2010–August 2015, of which 151 *E. coli* (24%), 23 *Klebsiella pneumoniae* (3.7%), 24 *Enterobacter* spp (3.8%) and 5 *Citrobacter* spp (0.8%), were resistant to extended spectrum cephalosporins (ESC) and exhibited an ESBL/AmpC phenotype when tested by the double disc synergy test (DDST) in combination with cefoxitin. Molecular characterisation of the 151 ESC resistant *E. coli* isolates, showed that 67 isolates (44%) produced CTX-M type ESBLs, 55 isolates (36%) carried *bla*CIT-M, an AmpC type beta-lactamase, whilst 12 isolates (7.9%) carried both *bla*CTX-M and *bla*CIT-M. TEM and OXA-type beta-lactamases were also identified in 9.8% and 3.5% isolates, respectively. This study identified a high prevalence (24%) of ESC resistant *E. coli* in clinical specimens from

companion animals in the UK, which is much higher of that found in similar studies from pets in France (3.7%) or Netherlands (2%). The current study also characterises ESBL/AmpC producing *E. coli* isolates with focus on their genetic background, virulence factors and how these relate to clinical data and para-clinical information (cytology with evidence of Gram-negative bacteria, persistence of infection, evidence of inflammation) in order to determine their pathogenic potential. This continuing work seeks to establish the clinical significance of ESBL/AmpC producing *E. coli* isolates recovered from companion animal infections in order to support evidence-based decisions regarding treatment and infection control policies in veterinary settings.

Health disorders of Pugs and Border Terriers

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Health and welfare issues surrounding purebred dogs have been highly controversial since the BBC's *Pedigree Dogs Exposed* documentary in 2008, but several major reports have identified a deficiency of reliable disorder information within breeds. The limited data available mainly reflects referral or non-UK dog populations and is not necessarily representative of the wider population of UK dogs.

This study aimed to use clinical data from primary-care veterinary practices in the UK to report and compare the prevalence of common disorders in Border Terriers and Pugs.

Electronic patient records spanning 1st January to 31st December 2013 covering 1,327 Border Terriers and 1,015 Pugs within the VetCompass Programme were manually examined to extract data on all disorders diagnosed during this period. Border Terriers had a median age of 5.9 years (Interquartile range [IQR]: 3.1–9.2) and a median weight of 9.9kg (IQR: 8.6–11.5), compared with 3.0 years (IQR: 1.3–5.2) and 8.8kg (IQR: 7.1–10.1) for Pugs. 47.2% of Border

Terriers were neutered, 34.1% were insured and 45.6% were microchipped, compared with 30.9%, 25.5% and 37.0% for the Pugs. The most prevalent disorders of Border Terriers were periodontal disease (17.6%, 95% confidence interval [CI]: 15.6–19.6), obesity (6.9%, 95%CI: 5.5–8.3) and otitis externa (6.7%, 95%CI: 5.4–8.0). The most prevalent disorders of Pugs were obesity (13.1%, 95%CI: 11.0–15.2), corneal disorders (8.7%, 95%CI: 7.0–10.4) and otitis externa (7.5%, 95%CI: 5.9–9.1). The head and neck was the most commonly affected body area in both breeds, but Pugs had a significantly higher prevalence of conditions affecting this region than Border Terriers (43.3% vs 37.7%, $p=0.006$). Comparing the breeds for their top 24 disorders, Border Terriers had statistically significantly higher prevalence of four conditions; periodontal disease ($P<0.001$), conjunctivitis ($P=0.041$), heart murmurs ($P<0.001$) and cataracts ($P=0.001$), whereas Pugs had statistically significantly higher prevalence in nine; obesity ($P<0.001$), corneal disorders ($P<0.001$), ear disorders ($P<0.001$), upper respiratory tract noise ($P<0.001$), BOAS ($P<0.001$), intertrigo ($P<0.001$), retained deciduous teeth ($P<0.001$), umbilical hernias ($P<0.001$) and ocular discharge ($p=0.011$).

These results provide much-needed health data on the general UK population of Pugs and Border Terriers and can assist with prioritisation of disorders for health reforms of these two breeds.

Road Traffic Accidents (RTA) in dogs in the UK: epidemiology, clinical management and outcomes.

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OBJECTIVE

To estimate the prevalence and risk factors for road traffic

accidents (RTA) and describe the management and outcome of RTA events in dogs attending primary-care veterinary practices in the UK.

METHOD

Electronic patient records of dogs attending practices participating in the VetCompass Programme were assessed against selection criteria used to define RTA cases. The study population included 199,464 dogs attending 115 clinics across central and south-eastern England. The clinical notes were searched using a range of free-text search terms to identify potential RTA cases that were then manually verified to calculate prevalence. Univariable and multivariable logistic regression methods were used to evaluate associations between risk factors and RTA.

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