Prioritising canine disorders: A data-driven approach to Welfare Impact assessment

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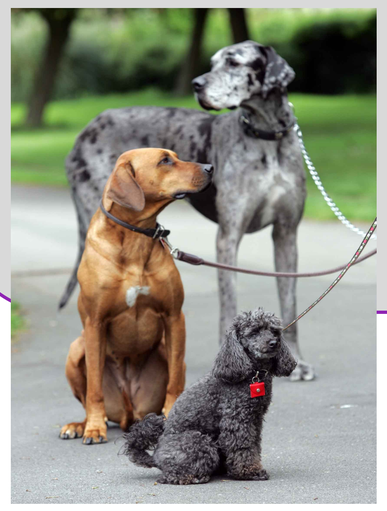

The Challenge

- A wide range of disorders (many associated with certain breeds) affect the welfare of pet dogs[1,2]
- Strategic, evidence-based targeting of available resources is needed to achieve maximum welfare benefit at the dog population level.

Q: Which potentially breed-associated disorders should be priority targets for reform?

The Plan

1. Use electronic patient record (EPR) data held by the VetCompass Programme[3] to generate standardised parameters reflecting **'Welfare Impact'** (WI) at UK population level & to provide evidence for potential breed-associations across a range of common canine disorders
2. Communicate findings to canine health stakeholders in a format which aids decision-making when targeting available resources

Welfare impact of a disorder at population level
= Prevalence x Severity x Duration [4]

- What % of all UK dogs are affected?
- How / how badly are dogs affected?
- For how long are dogs affected?

The Strategy

Prioritisation Matrix parameters (based on 250-case, disorder-specific VetCompass studies on cases from 2013)

Evidence for breed-association	Breeds numerically over-represented in case group vs. background population	**Breed,** **Breed-specific annual period prevalence, PP (95% CI; n);** **Prevalence ratio, PR (= breed PP/overall PP)**
Evidence for scale of effect	**Annual period prevalence**	**% study dogs affected by disorder in 2013** (95% CI)
Evidence-based severity	**VetCompass cross-disorder severity scoring system** *7 Sub-scores: (0-2)*	*1. Highest presentation association for disorder*
		2. No. of disorder-associated vet visits
		3. Chronicity disorder-associated analgesia/anti-inflammatory tx
		4. No. of other therapeutic tx groups prescribed
		5. Disorder-associated procedures under GA/sedation
		6. No. of disorder-associated hospitalisations
		7. Disorder-associated referrals
		Composite score (0-14)
	Reported deaths in case group	*All deaths* (n, % of 250)
		2013 deaths (n, % of 250)
	Deaths related to disorder	*All deaths* (n, % of 250)
		2013 deaths (n, % of 250)
	Median age at death	*All deaths* (years, range)
		2013 deaths (years, range)
Evidence-based duration	**Category of temporal effect**	**Single event** vs. **Multi-episodic** vs. **Continuous disorder** (% of cases with >1 recorded episode in 2013)
	Age at earliest disorder diagnosis in 2013	**Median age**, years (IQR)
	Proportion of an 'affected dog year' affected	**Median % of year, median days** (=median episode duration*median no. episodes per year)

E.g. Otitis Externa

KCS 16.6 (13.5 - 20.05; 5); 4.20
WHWT 8.64 (7.66 - 9.73; 15); 2.19
Pug 8.12 (6.56 - 9.92; 5); 2.05
Cocker Spaniel 6.62 (6.61 - 7.4; 17); 1.67
Labrador 6.04 (5.59 - 6.55; 35); 1.53
Springer Spaniel 5.96 (5.06 - 7.04; 8); 1.51
GSD/Alsatian 5.58 (4.83 - 6.41; 11); 1.41
CKCS 4.95 (4.12 - 5.89; 7); 1.25

3.95% (3.83 - 4.07)	
2	*53.2% presented 'Primarily' for OE a.l.o in 2013 (n=249)*
0	*Median OE-related visits in 2013: 1, range 1-10 (n=250)*
1	*72.4% : 'One-off/shorter term use' at most in 2013 (n=221)*
2	*91.7% had tx from 1+ therapeutic groups in 2013 (n=240)*
0	*89.2% had no OE-related procedures in 2013 (n=250)*
0	*0 OE-related overnight hospitalisations in 2013 (n=250)*
0	*1 (0.4%) OE case referred in 2013 (n=250)*
5 / 14	
17 (6.8%)	
10 (4.0%)	
0	
13.3 (2.0 - 15.9)	
13.1 (2.0 - 15.9)	
Multi-episodic (12.4%)	
5.05 (2.19 – 8.76)	
3.84%, 14 days (14 days*1)	

Abbreviations: **KCS**, King Charles Spaniel; **WHWT**, West Highland White terrier; **GSD**, German Shepherd dog; **CKCS**, Cavalier King Charles spaniel; **CI**, Confidence Interval; **Tx**, Treatment / therapy; **a.l.o** 'At least once'

Conclusions

- Evidence-based cross-disorder comparison by population-level Welfare Impact is feasible using routinely-collected EPR data from UK primary care veterinary clinics.
- Presentation of population-level Welfare Impact parameters in a **'Prioritisation Matrix'** format allows comparison of canine disorders based on overall assessment of population WI or with focus on various individual aspects of particular stakeholder concern.

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References

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