

Supplementary material

Systematic review: study protocol

Background:

Preventative healthcare consultations account for a third of all veterinary consultations and so there is considerable opportunity to improve patient care and client satisfaction by maximising the potential of these consultations. In order to maximise the potential of these consultations in improving patient care and client satisfaction, it is important to identify factors associated with the 'success' of these consultations and identify ways in which this 'success' can be measured. This systematic review is the first of its kind in veterinary medicine and will provide a good understanding of the evidence base on measuring success in veterinary consultations. It is a crucial first step in the potential of these consultations in small animal practice.

Aim:

The aim of this study was to describe the existing published evidence base which reported and/or measured the 'success' of veterinary preventative healthcare consultations involving dogs and/or cats. A secondary aim of this study was to assess the quality of the existing published literature which measured the 'success' of veterinary preventative healthcare consultations involving dogs and/or cats, in order to identify any useful measures on consultation success which could be used in future research.

Objective:

The primary objective of the review is to examine the scope of available literature on veterinary preventative healthcare consultations. The secondary objective of this review is to identify measures of success in preventative healthcare consultations in small animal practice (conducted by veterinary surgeons and limited to cats and dogs). Thirdly, to assess the quality of the evidence base describing the factors.

Definitions

Preventative healthcare consultation:

Any consultation where the main reason for presentation relates to the prevention of health problems, and where a clinical examination and/or assessment of the patient's general health would usually be expected to take place. This includes all consultations where the primary reason for presentation is one of the following, regardless of whether the owner was prompted to present the animal via a vaccination/other reminder, or unprompted: vaccination; parasite prevention; prevention of season (oestrus); any other routine health check, for example routine new animal or puppy/kitten checks.

Consultations involving the 'well' patient, in addition to patients with ongoing health problems (provided these health problems were not the primary reason for presentation), were included. Consultations primarily for procedures such as nail clipping, microchipping or any other procedure which may be prophylactic, but where a clinical examination/health check may not routinely be expected, were excluded.

Specific health problem consultation:

Any consultation where the main reason for presentation related to a disease, injury, or set of clinical signs which was currently affecting the animal.

Inclusion and exclusion criteria

Table S1. Inclusion and exclusion criteria for primary research citations and narrative citations identified during a search of CAB Abstracts and Medline databases

Criterion	Inclusion	Exclusion
Population	Preventative healthcare consultations performed by a veterinary surgeon, involving client-owned cats and/or dogs	Consultations not performed by a veterinary surgeon Consultations which were not preventative healthcare consultations (as defined previously) Consultations not involving canine or feline patients
Study type	'Primary research citations': Primary research or evidence synthesis, guidelines/conference abstracts with detailed methodology available 'Narrative citations': Narrative reviews, expert opinion pieces, case studies, books, guidelines/conference abstracts without detailed methodology available	N/A
Language	Any ('primary research citations' not in English language were translated)	Foreign language 'narrative citations' were not translated
Publication type	'Primary research citations': peer-reviewed publications with detailed methodology 'Narrative citations': any	N/A
Availability	Able to obtain through University of Nottingham library or inter-library loan	Unable to obtain whole manuscript

Table S2. Inclusion and exclusion criteria for primary research citations and narrative citations identified during a four Google searches

Criterion	Inclusion	Exclusion
Population	Preventative healthcare consultations conducted by a veterinary surgeon involving client-owned cats and dogs	Preventative healthcare consultations conducted by a veterinary nurse or involving species other than cats and dogs. Specific health problem consultations.
Literature type	'Primary research citations': Primary research or evidence synthesis, guidelines/conference abstracts with detailed methodology available 'Narrative citations': Narrative reviews, expert opinion pieces, blogs, case studies, e-books, guidelines/conference abstracts without detailed methodology available, veterinary practice/veterinary society/veterinary institution webpages, marketing material	N/A
Language	English language articles/literature	Non-English language articles/literature
Availability	Publically available	Not publically available or require a log-in process

Search strategy

Databases: Medline and CAB Abstracts, Search on set date. Medline search back to 1946 and CAB Abstracts back to 1910.

Google search: due to limit on number of terms, four separate Google searches conducted on a set date covering each of the four main aspects of preventative healthcare covered by the definition.

Database search terms

The final search strategy for CAB Abstracts was:

(dog.mp. OR dogs.mp. OR canine.mp. OR canines.mp. OR canis.mp. OR cat.mp. OR cats.mp. OR feline.mp. OR felines.mp. OR felis.mp. OR pet.mp. OR pets.mp. OR small animal\$.mp. OR companion animal\$.mp. OR exp dogs/ OR exp cats/ OR exp pets/ OR exp small animal practice/) AND (preventive.mp. OR preventative.mp. OR prophylaxis.mp. OR prophylactic.mp. OR health promotion.mp. OR ill-health prevention.mp. OR disease prevention.mp. OR wellness.mp. OR vaccine\$.mp. OR vaccination\$.mp. OR immunis\$.mp. OR immuniz\$.mp. OR inoculat\$.mp. OR booster\$.mp. OR parasiticid\$.mp. OR parasite prevention.mp. OR antiparasitic\$.mp. OR anti-parasitic\$.mp. OR endoparasiticid\$.mp. OR anthelmintic\$.mp. OR worming.mp. OR de-worm\$.mp. OR deworm\$.mp. OR worm prevention.mp. OR ectoparasiticid\$.mp. OR insecticid\$.mp. OR de-flea\$.mp. OR deflea\$.mp. OR flea prevention.mp. OR flea treatment.mp. OR oestrus.mp. OR estrus.mp. OR heat cycle.mp. OR season.mp. OR exp preventive medicine/ OR exp prophylaxis/ OR exp health promotion/ OR exp disease prevention/ OR exp wellness/ OR exp vaccination/ OR exp immunization/ OR exp

inoculation/ OR exp antiparasitic agents/ OR exp anthelmintics/ OR exp ectoparasiticides/ OR exp insecticides/ OR exp oestrus/) AND (consultation\$.mp. OR appointment\$.mp. OR check-up\$.mp. OR checkup\$.mp. OR routine.mp. OR annual.mp. OR yearly.mp. OR visit\$.mp. OR exam\$.mp. OR physical\$.mp. OR biennial.mp. OR triennial.mp.)

The final search strategy for Medline was:

(dog.mp. OR dogs.mp. OR canine.mp. OR canines.mp. OR canis.mp. OR cat.mp. OR cats.mp. OR feline.mp. OR felines.mp. OR felis.mp. OR pet.mp. OR pets.mp. OR small animal\$.mp. OR companion animal\$.mp. OR exp Dogs/ OR exp Cats/ OR exp Pets/) AND (preventive.mp. OR preventative.mp. OR prophylaxis.mp. OR prophylactic.mp. OR health promotion.mp. OR ill-health prevention.mp. OR disease prevention.mp. OR wellness.mp. OR vaccine\$.mp. OR vaccination\$.mp. OR immunis\$.mp. OR immuniz\$.mp. OR inoculat\$.mp. OR booster\$.mp. OR parasitid\$.mp. OR parasite prevention.mp. OR antiparasitic\$.mp. OR anti-parasitic\$.mp. OR endoparasitid\$.mp. OR anthelmintic\$.mp. OR worming.mp. OR de-worm\$.mp. OR deworm\$.mp. OR worm prevention.mp. OR ectoparasitid\$.mp. OR insectid\$.mp. OR de-flea\$.mp. OR deflea\$.mp. OR flea prevention.mp. OR flea treatment.mp. OR oestrus.mp. OR estrus.mp. OR heat cycle.mp. OR season.mp. OR exp Preventive Medicine/ OR exp Preventive Health Services/ OR exp Health Promotion/ OR exp Vaccination/ OR exp Immunization/ OR exp Antiparasitic Agents/ OR exp Anthelmintics/ OR exp Insecticides/ OR exp Estrus/) AND (consultation\$.mp. OR appointment\$.mp. OR check-up\$.mp. OR checkup\$.mp. OR routine.mp. OR annual.mp. OR yearly.mp. OR visit\$.mp. OR exam\$.mp. OR physical\$.mp. OR biennial.mp. OR triennial.mp. OR exp Physical Examination/)

Google search terms

General search:

(dog OR dogs OR canine OR canines OR cat OR cats OR feline OR felines OR pet OR pets) AND (preventive OR preventative OR prophylaxis OR prophylactic OR prophylactics OR "health promotion" OR "ill-health prevention" OR "disease prevention" OR wellness) AND (consultation OR consultations OR consult OR consults OR appointment OR appointments)

Vaccination search:

(dog OR dogs OR canine OR canines OR cat OR cats OR feline OR felines OR pet OR pets) AND (vaccine OR vaccines OR vaccination OR vaccinations OR immunise OR immunisation OR immunisations OR immunize OR immunization OR immunizations OR inoculate OR inoculation OR inoculations OR booster OR boosters) AND (consultation OR consultations OR consult OR consults OR appointment OR appointments)

Parasite prevention search:

(dog OR dogs OR canine OR canines OR cat OR cats OR feline OR felines OR pet OR pets) AND (parasiticide OR parasiticides OR "parasite prevention" OR worming OR "worm prevention" OR insecticide OR "flea prevention" OR "flea treatment") AND (consultation OR consultations OR consult OR consults OR appointment OR appointments)

Prevention of season search:

(dog OR dogs OR canine OR canines OR cat OR cats OR feline OR felines OR pet OR pets) AND (oestrus OR estrus OR "heat cycle" OR season) AND (consultation OR consultations OR consult OR consults OR appointment OR appointments)

SEARCH OUTPUT SORTING CRITERIA:

- All duplicates removed
- NR run searches and identify titles and abstracts that describe and/or measure the success of preventative healthcare consultations, those that are unsure and those that do not
- RD to check 10% of results and compare with NR for agreement
- Identify all studies for next step

DATA EXTRACTION:

- Extract all measures used to describe preventative healthcare consultations
- Extract all outcomes relevant to measuring 'success' of the preventative healthcare consultation for cats and dogs

QUALITY ASSESMENT:

- Perform for all studies measuring 'success' of the consultation
- Use appropriate risk of bias and quality assessment tools for each study type

SYNTHESIS and REPORTING:

- Narrative synthesis
- Meta-analysis where appropriate
- Adherence to PRISMA guideline

DISSEMINATION:

- Peer-reviewed publication
- Report for funding body (MSD Animal Health)