Client: Bates Wells Braithwaite

Title: An independent review of evidence concerning the economic and wider impacts of proposed changes to the charitable status of the People’s Dispensary for Sick Animals (PDSA).

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Date: 10 December 2014
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The RTK Ltd and Veterinary Consultancy Services are pleased to present this review to Bates Wells Braithwaite of the evidence concerning the likely economic impacts and public benefits of proposed changes to the charitable status of the People’s Dispensary for Sick Animals (PDSA). Should Bates Wells Braithwaite have any queries in relation to the review, please contact:

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Executive summary

In October 2011, the PDSA submitted a proposal to the Charity Commission to expand its charitable objects (a statement of its purposes). The proposed expansion will widen the PDSA’s remit, enabling the organisation to provide medical, surgical and preventive services for more pet owners in financial need than previously possible.

The PDSA’s current charitable objects were legislated by an Act of Parliament in 1949; they allow for the provision of free veterinary services to the sick and injured pets of owners who cannot afford the services of a private veterinary surgeon. The proposed new objects will allow PDSA to have a greater impact on animal welfare by enabling it to fulfil a wider range of charitable purposes complimentary to its current charitable activities.

The PDSA has been liaising with the Charity Commission and the Office of the Scottish Charity Regulator (OSCR) to finalise its new charitable objects. The proposed expansion of the objects will allow PDSA to:

- Provide veterinary treatment both at a reduced cost or at no charge for pet owners who live in poverty and cannot afford some or all of the charges;
- Undertake preventative work (for example, vaccinations, neutering, flea and worm treatment) whether free, at a reduced charge, or at full charge;
- Educate and support the wider pet-owning public in all aspects of pet ownership; and
- Carry out any other activities that advance animal welfare and are exclusively charitable.

The purpose of this review is to identify the economic and “public benefit” impacts of proposed changes to PDSA’s charitable objects. In keeping with its terms of reference, the review has focused on existing evidence collated by the PDSA and sought additional research where available to corroborate assumptions concerning potential impact. The time available to produce their findings did not allow the review team to conduct a full systematic search for additional evidence. We have not sought to include any recommendations as to the outcome of the Commission’s decision-making, or any consideration of how the likely impact on the private veterinary sector might weigh against any public benefit.

The review was charged with addressing the available evidence with regard to 18 specific questions concerning the likely impact of the proposed changes on the public good and the financial future of the veterinary industry.

In summary, the review found that the available evidence adequately or better supports the PDSA’s modelling of the likely impact of most of the questions posed. Taken as a whole, that evidence has highlighted the following:
1. Expanding the affordability of preventive treatments is likely to have a positive impact on animal welfare in general;

2. Public awareness of animal welfare issues could be improved significantly. An education programme of the type proposed by the PDSA under the proposed changes could deliver considerable positive change and promote growth in the UK veterinary industry;

3. While the PDSA has not yet undertaken robust modelling of the uptake and associated income it would likely derive from the proposed changes, limits to its capacity to treat additional animals over the period covered by its financial planning (2014-2019) make it unlikely that the proposals would have a substantive impact on the UK veterinary industry in the short to medium term; and

4. While the proposed changes are unlikely to have any substantive impact on the costs and administrative burdens on other bodies (including local authorities and central government), they could make a significant difference to some pet owners on low incomes.
Introduction

The PDSA is seeking to expand its charitable objects. To that end, it submitted proposals to the Charity Commission and the Office of the Scottish Charity Regulator (OSCR), the adoption of which would widen the PDSA’s remit, enabling it to engage with many more pet owners.

As they currently stand, the PDSA’s objects are to provide ‘free medical or surgical treatment to animals belonging to persons who appear to the Society [PDSA] to be unable to afford the service of a veterinary surgeon’.

The changes being proposed would expand the PDSA’s objects to allow it to provide not just free veterinary treatment to those unable to pay, but also to:

1. Provide medical or surgical treatment at reduced charges [italics added] to animals whose owners are unable to afford some or all the charges of a veterinary surgeon;
2. Provide preventative treatment (e.g. vaccinations, neutering and worm treatment), care and advice (whether free, at a reduced charge or at full charge)\(^1\);
3. Educate the public in matters concerning animal health and welfare; and
4. Carry out any other activities that advance animal welfare and are exclusively charitable.

Some stakeholders who responded to the consultation raised concerns as to the potential impact the proposed changes might have on business. Of those, the majority have had their concerns dealt with to their satisfaction. However, the Charity Commission wishes to ensure that the potential impacts of the proposed changes are explored in sufficient detail as to enable ministers to make informed responses to any objections that might be raised. To that end, we have been commissioned to conduct a review to summarise existing available evidence concerning the potential impact of the proposed changes on economic/financial issues, and on ‘public benefit’.

The Charities Act provides a legal definition of the meaning of the term ‘charity’. Part of that definition says that for an organisation to be a ‘charity’ it must have only ‘charitable purposes’. Part of the Charities Act definition of a ‘charitable purpose’ says that it must be ‘for the public benefit’.

For a purpose to be ‘for the public benefit’ it must satisfy both the ‘benefit’ and ‘public’ aspects. To meet the legal requirement with regard to the benefit aspect of public benefit, a charitable purpose must (a) be beneficial; and (b) deliver benefits that outweigh any detriment or harm that might result. Meeting the legal requirement for the ‘public aspect’ of public benefit requires a charitable purpose to (a) benefit the public in general, or a sufficient section of the public; and (b) not give rise to more than incidental personal benefit.

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\(^1\) The PDSA has been providing preventative services since 2005. At present, preventative work is already carried out on a charging basis by the PDSA’s trading subsidiary. The proposed changes would enable the PDSA to deliver these services directly, through PDSA, the charity.
Background

**PDSA pricing of preventive treatments**

The PDSA’s pricing of its preventive services is built up on a cost basis, including the cross-charge of staff time. A national pricing strategy is adopted, with annual reviews. Benchmarking is undertaken annually and seeks to ensure that fees remain in the lower quartile by using data from the Society of Practising Veterinary Surgeons (SPVS). A margin across all preventive services of around 29% is achieved, with the surplus being used by the charity as a funding stream for its free veterinary care.

Reduced rates (for preventive services) offer a discount of between 23-33% on market-comparable full-price fees. All PDSA pricing for both charitable and concessionary groups of clients are built on the basis of a concessionary (reduced) rate, with final pricing at or below lower quartile levels of the 2014 SPVS Fees Survey².

**PDSA and charges for VAT**

When the PDSA makes a taxable supply to a client, the client will pay Value Added Tax (VAT) on that service, the same as any other VAT-registered commercial veterinary practice. Consequently, there is no market-pricing advantage for PDSA arising from VAT.

The PDSA is registered for VAT. It does not charge for its charitable services, so cannot recover standard-rated VAT on its costs; this becomes a cost to the charity. In contrast, a commercial veterinary practice would normally bear no VAT as a cost. Note that some of this VAT cost is alleviated by certain purchases charities can make at zero-rate VAT.

**Special Requests**

This is a small fund set aside to help owners who are eligible for PDSA assistance but live in an area served neither by a PetAid hospital nor a PetAid practice³. Applications are submitted jointly by the pet owner and their practice. PDSA makes an award towards the unpaid bill for treatment which can be only for a sick or injured pet and not for preventive care such as worming etc.

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² [http://www.spvs.org.uk/content/fees-survey-2014](http://www.spvs.org.uk/content/fees-survey-2014)

³ In communities that are too small for a PDSA hospital, the PetAid Service is available. Under this scheme, the PDSA arrange for local private practices to provide free treatment, on its behalf, to those who qualify for PDSA help.
The UK veterinary market: potential outcome scenarios for the proposed changes to the PDSA objects.

Several issues have been raised in relation to the impact the proposed changes might have on the UK veterinary market. What follows are four hypothetical scenarios that go some way towards providing a summary of those issues.

The status quo

1. Town with two veterinary practices and one PDSA hospital;
2. The Acorns Veterinary Practice aims to serve the most prosperous section of the town and provides care packages aimed at the best possible care at fair prices;
3. The Bramble Veterinary Practice aims to serve all areas of the town and all socioeconomic groups, and provides a range of care programmes with a range of prices to try to meet all its clients’ circumstances; and
4. The PDSA clinic is placed in the poorest part of the town and aims to provide service free at point of delivery for pet owners who cannot afford veterinary treatment and using receipt of state benefits as a proxy means test. It also provides care at reduced rates to those who cannot afford full fees and who request veterinary treatments at a reduced (subsidised) rate. It also provides medicines at full fees using a subsidiary company.
Scenario 1 – Possible impacts of Revised PDSA objectives (A)

1. PDSA increases its client base with recruitment of owners without previous veterinary care for their animals.
2. PDSA mounts campaign to improve responsible pet ownership (RPO) which has no effect on RPO nor awareness of the PDSA brand.

Scenario 2 – Possible impacts of Revised PDSA objectives (B)

1. Increased PDSA client base with recruitment of owners without previous veterinary care for their animals.
2. PDSA mounts a campaign to improve RPO and promote free PDSA services which has the effect of improving RPO and promotion of the PDSA brand.
3. PDSA recruits clients of the lower socio-economic (SE) groups previously served by Acorn and Bramble private veterinary practices (PVPs).
Scenario 3 – Possible impacts of Revised PDSA objectives (C)

1. PDSA increases client base with recruitment of owners without previous veterinary care for their animals.
2. PDSA mounts a campaign to improve RPO and promote free PDSA services which has the effect of improving RPO and promoting the PDSA brand, its network of hospitals and out-of-hours cover.
3. PDSA recruits clients from lower SE groups previously served by Acorn and Bramble PVPs.
4. PDSA recruits clients from all SE groups previously served by Acorn and Bramble practices attracted by PDSA offers of a full range of treatments at lower prices than PVPs due to lower labour costs due to use of volunteer labour, and subsidy from fundraising and non-payment of VAT.
5. Reduction in client base of PVPs leading to reduction in profitability.

**SOCIAL CLASS**

- Managerial & professional
- Intermediate, small employers and lower supervisory
- Routine and semi routine
- In receipt of benefits
Scenario 4 – Possible impacts of Revised PDSA objectives (D)

1. PDSA increases its client base with recruitment of owners without previous veterinary care for their animals.
2. PDSA mounts a campaign to improve responsible pet ownership (RPO) and promote free PDSA services which has the effect of improving RPO and promoting the PDSA brand, its network of hospitals and out-of-hours cover.
3. PDSA recruits clients from lower SE groups previously served by Acorn and Bramble PVPs.
4. PDSA recruits clients of all SE groups previously served by Acorn and Bramble PVPs who are attracted by PDSA’s offer of a full range of treatments at costs lower than PVPs’ due to PDSA’s subsidy from voluntary contributions, non-payment of VAT and lower labour costs due to use of volunteers.
5. PDSA campaigns on concessionary pricing and increases the number of animals in receipt of prior veterinary care from PVPs in its client base.
6. Reduction in client base of PVPs leads to reduction in profitability and consequent bankruptcy for the Bramble practice; enlarged client base but reduced profits for the Acorn practice which lowers prices to compete with PDSA.

The review will now look at the extent to which the available evidence might or might not support the probability of these scenarios, should the proposed changes to the PDSA’s objects be implemented.
Independent review of evidence concerning the impact of proposed changes to PDSA objects

Approach

The review aims to deliver a careful, objective evaluation of the extent to which existing evidence can provide satisfactory answers to two specific sets of questions:

1. Public benefit

This set of questions considers evidence concerning the likely impact of the proposed changes on:

a) Animal welfare in general;

b) The relief of poverty among pet owners;

c) The ability of pet owners to access the services they need to promote the welfare of their animals;

d) The number of pets that the PDSA will be able to support;

e) The number of pets that are registered with a vet;

f) The number of pets that develop preventable diseases;

g) The incidence of epidemics; and

h) The level of education and public awareness in relation to animal health and welfare (for example, dog behaviour, zoonotic diseases, abandoned pets and pet obesity).

2. Economic/financial

This set of questions relates to evidence concerning the likely economic or financial impact of the proposed changes:

a) Will the proposals impact the veterinary market and specifically consumers and businesses? In particular consider the impacts on small and start-up businesses (see Small Medium Business Association guidance for more details)

b) Will all veterinary businesses be affected in the same way, or will there be some that benefit, while others bear costs?

c) What are the expected impacts on the wider economy (e.g. labour market), if any?

d) What are the impacts on competition? Will the number or range of suppliers be limited? Will their ability to compete be limited or the incentive to compete rigorously be reduced?

e) Will the proposals impact on innovation?

f) What will be the impacts of the proposals in respect of demand for veterinary services?

g) What will be the impacts of the proposals in respect of a private veterinary surgeon’s “bad debt liability”?

h) What will be the impacts of the proposals on the amount of fees paid by the PDSA to private veterinary practices?

i) What will be the impacts of the proposals in relation to costs and administrative burdens on other bodies (including local authorities and central government)?

j) What are the expected financial impacts of the proposals on pet owners?
The terms of reference for the independent review specified that no new research should be carried out to gather data [paragraph 3.3], and that the reviewers should do no more than identify an impact and assess the extent of that impact. The impact assessment should not include any recommendations as to the outcome of the Commission’s decision-making or any weighing of the impact on the private veterinary sector against public benefit aspects [paragraph 3.4].

We have conducted the review in three stages.

Stage 1: Project initiation
At the project initiation meeting, we set out our proposed methodological approach with colleagues from Bates Wells Braithwaite and representatives of the PDSA who provided the team with relevant source materials they had cited in their own impact assessment.

Stage 2: Interviews
The review team were instructed to conduct interviews at their discretion. We have conducted interviews with representatives of the PDSA, the British Veterinary Association, Easipetcare Ltd, the British Small Animal Veterinary Association (BSAVA) and the Society of Practising Veterinary Surgeons (SPVS). The purpose of the interviews was to:

- Identify sources of statistical data and other evidence likely to be pertinent to the review;
- Establish the extent to which the questions identified in the invitation to tender (ITT) cover all of the salient issues;
- Whether there was any change in position given that PDSA have responded to concerns that were evidenced in the initial responses to the call for evidence; and
- Qualify with the PDSA the scope, scale and distribution of the services that it will be able to deliver as a result of the proposed changes to its objects.

Stage 3: Review of key documents
We reviewed each of the documents provided by the PDSA, and sought additional material where readily available. We recorded the extent to which the evidence we reviewed provided satisfactory answers to the two sets of questions posed. What follows is our summary assessment. Given the time constraints, we have not conducted a full systematic review of the research literature.

We have made an overall assessment of the evidence in relation to each of the questions based on a quality assessment grading system used by the National Institute for Health and Care Excellence (NICE)⁴. For each question, we have graded the strength of evidence using a code ‘++’, ‘+’ or ‘−’, based on the extent to which the potential for bias has been minimised.

Quality rating
++  The available evidence is generally robust;
+   There are some gaps in the evidence; but were more evidence available for review, conclusions would be unlikely to alter substantially;
-   The available evidence is weak.
Review of the evidence – Part (1) Public benefit

1a) What will be the impact of the proposals on animal welfare in general?

Evidence rating (++)

Summary finding: The proposed changes would have a positive impact on animal welfare.

The PDSA has argued that the proposed changes are most likely to have a positive impact on animal welfare as a consequence of it rolling out a programme of preventive work. Much of the data cited in support comes from the 2013 PDSA Animal Wellbeing (PAW) Report. The report is based on an online survey of 2,149 pet owners, 555 children and 459 vets and veterinary nurses. YouGov, who conducted the survey on behalf of the PDSA, say that the sample is representative of the UK population by pet species, owner’s gender, social class, age and geographical region.

Measured in terms of the proportion of UK households with a pet, the three most popular domestic animals are dogs, cats and rabbits. The PAW report estimates the numbers to be 7.8 million dogs, 9.5 million cats, and 1 million rabbits. These figures compare with estimates from the Pet Foods Manufacturers’ Association (PFMA) for 2014 of 9 million dogs (24% of households), 8 million cats (17% of households), and 1 million rabbits (2.4% of households). Independent academic research based on a survey of 2,980 UK households conducted in 2007 estimated the numbers of cats and dogs to be around 10.3 million and 10.5 million respectively.

The Animal Welfare Act of 2006 set out five welfare needs for pets:

- Environment – the need for a suitable environment (place to live);
- Diet – the need for a suitable diet;
- Behaviour – the need to be able to express normal behaviour;
- Companionship – the need to live with, or apart from, other animals; and
- Health – the need to be protected from pain, suffering, injury and disease.

The 2013 PAW report claims that millions of pets each year die needlessly from preventable disease. It goes on to suggest that preventive treatments such as vaccinations and neutering could significantly reduce that risk. According to the report, 16% of dogs, 25% of cats

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6 In terms of absolute numbers, fish are the most popular domestic animal in the UK (20-25 million).
7 The PFMA pet population estimates were made over two years, with total sample of 6,000 nationally representative of households in UK
and 42% of rabbits are currently not vaccinated (22% of the total population), while 27% of dogs, 7% of cats and 40% of rabbits are currently not neutered (18% of the total population).

Evidence suggests that rolling out a preventive programme could significantly increase the numbers of animals receiving vaccinations and being neutered. The PDSA trading subsidiary, PDSA PetAid Enterprises Limited, began offering preventive treatments at reduced charges in 2006. Their own figures show that since inception, they have provided more than 2.7 million preventive treatments to eligible pets. However, as the PAW report figures show, there remain significant numbers of animals who are not receiving preventive treatments. For example, 10% of dogs and 20% of cats are not receiving worming treatments.

The available evidence supports the contention that the proposed changes to the PDSA’s objects would be likely to have a positive impact on animal welfare, although the size of the potential impact is difficult to quantify.
1b) **What will be the impact of the proposal to provide treatment at a reduced rate upon the relief of poverty among pet owners?**

**Evidence rating (+++)**

**Summary finding:** The proposed changes would have a positive impact on poverty relief among pet owners.

The PDSA currently provides free veterinary services to pet owners in receipt of benefits. Eligibility is assessed on the basis of pet owners’ receipt of housing benefit and council tax reduction. The proposed changes would enable the PDSA to extend this service by providing medical or surgical treatment at reduced charges to animals whose owners live in poverty but fall outside current eligibility criteria. Reforms to the benefits system, specifically the introduction of universal credit, are being trialled by the government. The PDSA plan to make final decision on new eligibility criteria once the outcome of these trials is known and the reforms announced. Financial plans provided to the review team by the PDSA note that the application and impact any new criteria will be ‘continually assessed’.

Estimates of the lifetime costs of owning a pet provided by the PDSA put the figures at between £16,000 and £31,000 for a dog (depending on its size), £17,000 for a cat, and £9,000 for a rabbit. When asked as part of the PAW survey, pet owners consistently and significantly underestimated those costs. Most thought owning a dog would cost them no more than £5,000 over its lifetime. The estimated figures for cats and rabbits were up to £5,000 and no more than £1,000 respectively.

The case that proposed changes will relieve poverty among pet owners on low incomes rests on the assumptions that (a) significant numbers of people on low incomes own pets; and (b) those on low incomes currently seek treatment for their pets despite the costs.

Evidence published by the Joseph Rowntree Foundation (JRF) suggests that, while the number of people living in poverty has been falling since the mid-1990s, there were still 13 million people living in poverty in the UK in 2011/12. Given the way in which that figure is calculated, the JRF estimates that a further 2 million households have incomes that would have been low enough to categorise as poverty in 2007/2008. Given the way in which that figure is calculated, the JRF estimates that a further 2 million households have incomes that would have been low enough to categorise as poverty in 2007/2008.

Whilst no comparable information from the UK is available, data from the US suggests that the proportion of families that own pets is relatively consistent across income groups. Around 30% of low-income families in the US own a cat or dog, compared with 33% of middle-income families. Data from the PFMA showing consistent levels of pet ownership across regional areas.

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10 Calculated as households whose income is below 60% of the median income for all UK households.

that differ in terms of mean household incomes suggests similar consistencies are applicable to the UK\textsuperscript{12}.

A survey of 2,000 people conducted by the PFMA found that, while UK pet owners have felt the impact of the recession and reduced household expenditure in the past 12 months, they tend not to reduce expenditure on their pets\textsuperscript{13}. Only 6\% of owners have cut back on treats for their pets, 4\% on their pet’s food, and 3\% on their pet’s health and visits to the vet. Data from the 2011 Pet Plan Census, a survey of 10,697 pet owners, suggested that reducing expenditure on pet care is more prevalent in areas of the country with lower average wages: the North-East, Wales, Northern Ireland and the West Midlands\textsuperscript{14}.

The available evidence therefore suggests that the proposed changes to the PDSA’s objects would be likely to have a positive impact on the relief of poverty among pet owners.

\textsuperscript{12}http://www.pfma.org.uk/regional-pet-population-2014
\textsuperscript{13}http://www.pfma.org.uk/news/article.cfm?id=29
\textsuperscript{14}http://www.petplan.co.uk/petcensus/censusinfo.pdf
1c) What will be the impact of the proposals on the ability of pet owners to access the services they need to promote the welfare of their animals?

Evidence rating (+)

Summary finding: The impact of the proposed changes on geographical accessibility is likely to be minimal.

For most pet owners, the ability to access necessary veterinary services will be driven by two key considerations: one financial, the other geographical.

We have already reviewed evidence to suggest that the proposed changes are likely to reduce the financial constraints on accessibility experienced by those on low incomes (see 1b). To that extent, it is reasonable to assume that the proposed changes will have a positive impact on accessibility.

Geographical barriers to accessibility are likely to be more acute for those living in remote rural areas of the country\(^\text{15}\). The potential impact for those people will depend in large part on the PDSA’s plans to provide facilities in those areas.

The PDSA have provided the independent review team with information concerning the organisation’s strategic financial planning for the period 2014-2019. In terms of planned capital expenditure, the priority over the period is a programme of replacement builds. The ambition is to replace the current PDSA hospital infrastructure of 42 hospitals and 8 associated branches at a rate of one per year, based on a projected life expectancy of 50 years for each site.

The financial plan notes that, as a consequence of the overall Group position and affordability, no further investment in new locations or services is planned over the period. It is therefore reasonable to assume that the impact of the proposed changes on geographical accessibility is likely to be minimal. Where potential improvements in geographical accessibility are realised, it is likely to be through extension of the PetAid practice scheme to more private practices.

1d) **What will be the impact of the proposals on the number of pets that the PDSA will be able to support?**

**Evidence rating (+)**

**Summary finding:** Based on figures from their financial plans, the PDSA would be able to support no more than 147,000 additional animals, or fewer than an extra 1% of the UK population of cats, dogs and rabbits, over the period 2016-2019, taking their projected market share to 2.5% by 2019.

Evidence on this issue has been taken from the PDSA’s own financial planning for the period 2014-2019 [section 3.6]. The plan notes that under the proposed expanded charitable objects, it would be in a position to provide services to additional segments of the pet-owning public. Specifically, the proposed changes to the charity’s objects would enable it to provide concessionary (reduced) charged-for treatments to pets owned by people it judged to be on low incomes, whilst still providing and increasing the availability of ‘free’ veterinary services to those that are eligible for the free services.

Forecasting how the proposed changes might influence the numbers of pets the PDSA would be able to support is not straightforward. As the financial plan notes:

> ‘... having not as yet tested the uptake and associated income of services delivered to a concessionary group of clients, no financial figures have been built into the PDSA’s Financial Plan at this stage.’ [p.27]

In the short to medium term, the numbers of additional pets the PDSA would be able to support were the proposed changes to be adopted are limited by the organisation’s physical capacity.

The PDSA models its physical capacity in terms of Total Animal (TA) numbers. TA measures the number of animals that receive either a charitable and/or preventive treatment over a specified period. It counts the number of unique animals that receive a service, rather than the number of consultations provided.

Its current hospital network of 42 hospitals and 8 branches has a maximum capacity of 454,000 TAs. (That figure is based on the assumption that each of its consulting rooms has an annual capacity of 1,900 TAs.) With a utilisation rate of 86.1%, the PDSA estimates it will provide services to 391,000 TAs in 2014. That represents around 2% of UK cats, dogs and rabbits.

Under its current objects, the PDSA’s financial plan predicts total spare capacity for the period 2016 to 2019 at 147,000 TAs, an average of 36,750 per annum. With no explicit plans to increase physical capacity over the period, it is therefore reasonable to assume that the PDSA would be able to support no more than 147,000 additional animals over the period 2016-2019, or around 0.74% of the UK population of cats, dogs and rabbits.
1e) What will be the impact of the proposals on the number of pets that are registered with a vet?

Evidence rating (+)

Summary finding: The number of pets registered with a vet would not change significantly

Figures from the 2013 PAW report, derived from a YouGov survey, suggest that currently around 14% of pets (2.5 million) are not registered with a vet, so probably not receiving regular professional support with their health and wellbeing. The report puts the figure for unregistered with a vet at 15%. That compares broadly with the figure of 13.6% cited by independent research\textsuperscript{16}.

Assuming that the PDSA was able to use all of its spare physical capacity to deliver services to an additional 147,000 animals by 2016, and that each of those animals was subsequently registered, that would decrease the proportion of pets not registered with a vet to 13%.

Less easy to estimate is the extent to which proposals to expand the PDSA’s remit to focus on education would encourage the pet-owning public to register their animals with a vet. Given that the majority (86%) are currently registered, it might be that changing the behaviour of this relatively small minority could be particularly challenging.

1f) **What will be the impact of the proposals on the number of pets that develop preventable diseases?**

**Evidence rating (+)**

**Summary finding:** A continuing rise in the number of pets receiving preventive treatment will lead to a corresponding fall in numbers of pets developing preventable diseases.

To provide an estimate of the likely impact of the proposals on the number of pets that develop preventable diseases, we are assuming that each animal in receipt of a preventive service from the PDSA will not fall victim to a preventable disease.

PDSA figures suggest that in 2014, around 56% of pets in receipt of PDSA care will receive a preventive service; that is a total of 219,000 animals. The proportion of pets receiving care that also receive preventive services has risen by an average of 2.8% per year since 2011. Assuming the same annual rate of increase, and the growth in TAs predicted by the PDSA, over the period 2016 to 2019 the proposed changes could result in a maximum of 94,000 additional animals receiving preventive treatment, and therefore at significantly reduced risk of developing a preventable disease (see Table 1 below).

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<th>Measure ('000s)</th>
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<tr>
<td></td>
<td>2016</td>
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<tr>
<td>Predicted TAs</td>
<td>408</td>
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<tr>
<td>Predicted proportion receiving preventive services¹</td>
<td>61.5%</td>
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<tr>
<td>Predicted number receiving preventive treatment under current objects</td>
<td>250</td>
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<tr>
<td>Projected spare capacity</td>
<td>46</td>
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<tr>
<td>Maximum number receiving preventive treatment if objects amended</td>
<td>279</td>
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<tr>
<td>Additional animals in receipt of preventive treatment if objects amended</td>
<td>29</td>
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¹ Predictions based on assumed 2.8% annual rate of increase
1g) What will be the impacts of the proposals on the incidence of epidemics?

Evidence rating (+)

**Summary finding:** If the PDSA delivers its proposed public education programme, we’d likely see a decrease in the probability of epidemics thanks to an increase in preventive health uptake.

The evidence given to the review team provided very little insight into this question. As a consequence, we approached the Small Animal Veterinary Surveillance Network (SAVSNET\(^{17}\)) to explore the link between an owner’s level of deprivation (as defined by their postcode Index of Multiple Deprivation, or IMD) and their uptake of preventive veterinary healthcare for their pet, especially vaccination. A full copy of the report appears at Appendix A. The review team asked SAVSNET to interrogate their database to answer three questions:

1. **Are vaccine-preventable diseases being diagnosed in the UK?**

The data show that the commonest vaccine-preventable diseases, canine parvovirus and feline calicivirus (so called “cat flu”), are present throughout most areas of the UK (see maps at Figure 1, Appendix A). It follows that unvaccinated or poorly vaccinated animals are at risk of acquiring these infections, wherever they live.

2. **Does the owners’ level of poverty (as measured by the IMD) affect their uptake of neutering, insurance and microchipping?**

Dogs and cats from postcodes with least multiple deprivations are significantly more likely to be neutered, insured and micro-chipped (see Table 1 Appendix A). While we can’t say that reduced uptake of these good pet care care practices by owners in more deprived areas is a reflection of their ability to pay, we can speculate that it might be a contributing factor.

3. **Does the owners’ IMD affect their uptake of vaccination?**

Dogs and cats from postcodes with least multiple deprivations are 1.81 and 1.93 times more likely to have been vaccinated compared to those from most deprived areas (see Table 2 Appendix A). Reduced uptake of vaccination by owners in more deprived areas might be a reflection of their ability to pay, but without good data, that remains speculation. Note that protection by vaccination for most diseases is usually more complex as a course of vaccination is often required along with regular boosters and thus requires a long term client/ veterinary practice relationship.

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\(^{17}\) SAVSNET is collaboration between University of Liverpool and the British Small Animal Veterinary Association. They have developed a network of private veterinary practitioners and commercial diagnostic labs who together contribute electronic health data on companion (cat, dog, rabbit, rodent etc) health. The database contains information on more than 200,000 animals and 400,000 consults. More information can be found at [www.savsnet.co.uk](http://www.savsnet.co.uk).
To summarise, analyses conducted by SAVSNET suggest that:

- Vaccine-preventable diseases are still regularly diagnosed nationally and so unvaccinated animals remain at risk;
- Owners of dogs and cats in the most affluent areas are significantly more likely to take advantage of a range of preventive pet healthcare including neutering, insurance and microchipping; and
- Owners of dogs and cats in the most affluent areas are significantly more likely to have their pets vaccinated at least once (although prevention requires more than one event, depending on the disease).

In 2002, the Veterinary Products Committee (VPC) established an independent Working Group on feline and canine vaccination. The Working Group concluded that vaccination plays a very valuable role in the prevention and control of the major infections in dogs and cats and, although, adverse reactions occasionally occur, the risk/benefit analysis strongly supports their continued use. In a report published in 2014, the Veterinary Medicines Directorate (VMD) concluded that they were not aware of any new developments that would affect the previous conclusions of the Working Group.

The World Small Animal Veterinary Association (WSAVA) convened a Vaccination Guidelines Group (VGG) to develop guidelines for the vaccination of dogs and cats. The first version of these guidelines was published in 2007. In revised guidelines published in 2010, the VGG strongly recommended that wherever possible all dogs and cats should be vaccinated on the grounds that not only protects the individual animal, but provides optimum ‘herd immunity’ that minimizes the likelihood of an infectious disease outbreak.

Taken as a whole, the evidence would suggest that should the PDSA deliver an effective public education programme of the kind they are proposing, the resulting increase in the uptake of preventive health measures among pet owners could decrease the likelihood of the incidence of epidemics, particularly local outbreaks of preventable diseases. Furthermore, the public should get a better understanding of prevention of diseases and other conditions that can affect their pets and so prevent the need for other more serious treatments.

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1h) What will be the impacts of the proposals on the level of education and public awareness in relation to animal health and welfare (for example, dog behaviour, zoonotic diseases, abandoned pets and pet obesity)?

Evidence rating (-)

Summary finding: Without details of the PDSA’s proposed public education initiatives, and evidence of their efficacy, it is impossible to generate reliable estimates of impact.

The PDSA has identified several key issues on which they intend to focus their proposed extended education programme. First, dog behaviour; figures published by the Health and Social Care Information Centre\(^20\) show that in the year to April 2012, there were around 6,450 hospital admissions for dog bites or strikes. The annual cost to the NHS has been put at £3.3 million. A recent report from the All-Party Parliamentary Group for Animal Welfare (APGAW) cited research from Reading University that put the total cost of irresponsible dog ownership at just over £80 million per year\(^21\). The PDSA is proposing to educate dog owners in how to socialise young dogs to improve their behaviour. Second, zoonotic diseases; the proposal is to educate people as to the impact of pets on human health to minimise risks of contracting diseases such as leptospirosis, a type of bacterial infection that usually causes mild flu-like symptoms, but in extreme cases can be life-threatening. Third, abandoned pets; in 2013, local authorities collected more than 126,000 stray dogs. With a statutory obligation to house strays for 7 days, the cost to local authorities has been estimated at £22 million\(^22\). Fourth, pet obesity; the 2011 PAW Report suggests 35% of dogs and 25% of cats are obese, giving obesity one of the most serious health threats to pets.

Over the period 2014-2019, the PDSA plans to extend its educational activities. Changes will include expanding its Pet Check programme\(^23\), and expanding teams of community and education veterinary nurses who will deliver collaborative initiatives on pet welfare and mount pet health campaigns to increase the uptake of preventive healthcare services.

The PDSA suggests that a national educational programme will have the effect of raising awareness of key animal welfare issues. This will increase the demand for health and welfare checks and treatment, encouraging more owners to register their pets with a vet.

The 2013 PAW Report showed that public awareness of animal welfare issues could be improved significantly. For example, only 38% of owners were familiar with the five welfare needs described in the Animal Welfare Act. In that context, effective public education initiatives have the capacity to make significant improvements on public awareness in relation


\(^{22}\) Microchipping Alliance (2011). Briefing on Compulsory Identification.

\(^{23}\) The PDSA PetCheck programme raises awareness of the most prevalent preventable conditions affecting UK dogs by providing free health checks to dogs from an experienced veterinary nurse. In addition, nurses also provide valuable advice on the care of other popular pets.
to animal health and welfare. However, without details of the approaches to public education the PDSA might take, and evidence of their efficacy, it is impossible to generate reliable estimates of impact.
Review of the evidence – Part (2) Economic/financial

2a) Will the proposals impact on the veterinary market and specifically on consumers and businesses? In particular what are the likely impacts on small and start-up businesses (see Small Medium Business Association guidance for more details)

Evidence rating (+ +)

Summary finding: The impact of the proposals on the veterinary market is likely to be limited.

The most recent analysis of the UK veterinary market was published in 2014. As part of a strategic analysis of the future of small animal veterinary practice, the business consulting team at Zoetis, a global animal health company, undertook a detailed analysis of the veterinary industry. They used an approach developed by Michael Porter at Harvard Business School called ‘the five forces model’ to look at the competitive intensity of the industry based on consideration of:

1. How attractive the industry is to new entrants (both traditional practices and corporate);
2. The current level of competitive rivalry within the industry;
3. How likely it is that veterinary services could be provided by substitute providers;
4. The amount of power customers have over the industry; and
5. The amount of influence its suppliers have.

The analysis concluded the industry to be attractive with the potential to return business success. The report was discussed by a cross-section of industry representatives including small veterinary practices, corporate providers, budget and so-called top-end services. Stakeholders broadly agreed with the market analysis, concluding that innovative, forward-thinking independent practices will flourish and compete successfully.

The positive perceptions of the Zoetis analysis are reflected in similar views expressed in the 2014 Annual Report from the Pets at Home Group Plc; it values the UK pet-care market at about £5.4 billion, describing it as large, resilient, and supported by a stable pet population.

Given the apparent healthy state of the UK veterinary market, and the fact that the PDSA has, according to its own figures, maximum capacity to treat no more than 147,000 additional animals over the period 2016-2019 (less than 1% of the UK population of cats, dogs and rabbits), it is reasonable to assume that the impact of the proposals on the veterinary market are likely to be limited.

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2b) *Will all veterinary businesses be affected in the same way, or will there be some that benefit, while others bear costs?*

**Evidence rating (+)**

**Summary finding:** Given their business planning figures, the impact is likely to be minimal, given that the number of additional animals for which the PDSA can provide services will be restricted by capacity issues.

In the UK, 75% of the veterinary market is made up of small, independent practices. The remaining 25% consists of corporate and charitable providers. Discussions reported in the *Veterinary Record* collection of papers came to the conclusion that, while the structure of the market might change over the next 10 years, experience from other countries, and similar sectors such as opticians, suggests that large corporate organisations will account for no more than 50% of the market.²⁶

A recent innovation in the UK veterinary market has been the introduction of low-cost veterinary services. Two companies typical of the sector are Easipetcare and The Vet. Both offer drop-in vaccinations as well as professional consultations and a range of surgical procedures including neutering. The claim made by these organisations is that their charges are up to 40% less than those typical of the sector. Their operations are localised so far; Easipetcare has six centres (Burton, Chatham, Coventry, Derby, Kettering and Reading), while The Vet has four (Bristol, Mitcham, Nottingham and Southampton).

Proposed changes to the PDSA objects will enable those on low wages to access medical or surgical treatment for their animals at reduced charges. Logic dictates that the changes are more likely to have an impact on businesses offering low-cost veterinary interventions. However, the size of the impact is likely to be minimal, given the capacity issues that will restrict the numbers of additional animals for which the PDSA can provide services.

In terms of the four hypothetical market scenarios described in the Background section of the report, the evidence suggests scenarios 1 and 2 are substantially more likely to reflect reality than scenarios 3 and 4.

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2c) **What are the expected impacts on the wider economy (e.g. labour market), if any?**

**Evidence rating (+)**

**Summary finding:** The impact of the proposed changes on the wider economy, including the labour market, is likely to be limited.

The impact of the proposed changes on the wider economy, including the labour market, is likely to be limited. The PDSA’s own figures suggest they would, as a maximum, treat no more than around 36,750 additional animals a year in the short to medium term. This is out of a total UK pet population of more than 18 million animals.

Wider economic gains could result were the PDSA’s proposed educational programme to have an impact on irresponsible pet ownership. For example, the All-Party Parliamentary Group for Animal Welfare 2014 dog strategy for England estimated that the costs of irresponsible dog ownership cost the economy up to £80.5 million each year, excluding the costs of dog welfare enforcement\(^{27}\).

With no plans to increase capital expenditure on new facilities should the proposed changes be adopted, the only likely impact on the labour market could be on the availability of veterinary staff. Market analysis from Zoetis, using figures supplied by the Royal College of Veterinary Surgeons\(^ {28}\), suggests that the veterinary industry has a current capacity for 11,733 full-time small-animal vets. This figure compares with current actual registrations for all vets of 15,043. Of course, care needs to be taken when drawing conclusions about over-capacity by comparing numbers of all vets with the demand for small-animal vets; account needs to be taken of specialization within the profession. However, the available evidence would seem to suggest that the proposed changes would not create excess demand for veterinary practitioners or by implication drive up the costs of providing veterinary care.

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2d) What are the impacts on competition? Will the number or range of suppliers be limited? Will their ability to compete be limited or the incentive to compete rigorously be reduced?

Evidence rating (+)

Summary finding: The impact on competition in the veterinary market is likely to be minimal.

Analysis conducted by Zoetis for the 20:20 Vision seminar reported in the Veterinary Record papers\(^\text{29}\) puts annual growth in the UK veterinary industry at round 3%. Characterising that as a modest rate, the report suggested that competition between suppliers to attract customers is reasonably robust. However, supplier representatives at the event generally agreed that, because the industry was robust, competition was a healthy stimulus for growth. They felt that while competitive rivalry within the industry was keen, compared with many industries, it was not a serious business threat.

Proposed changes to their charitable objects have been estimated by the PSDA to lead to only a modest increase in the volumes of animals for which they are able to provide services (less than 1% of the UK population of cats, dogs and rabbits). As a consequence, it is reasonable to assume that the impact of the proposals on competition in the veterinary market is likely to be minimal. The industry tends to view competition in the current market as a force for good. In the medium to short term, the available evidence suggests the proposed changes will not have any significant impact on the number or range of suppliers, or their ability or incentives to compete.

With reference to the scenarios described in the Background section to the review, the probabilities associated with scenarios 3 and 4 make them highly unlikely outcomes.

2e) Will the proposals impact innovation?

Evidence rating (-)

Summary finding: Innovation in the provision of low-cost veterinary services is unlikely to be affected.

Estimating the likely impact of the proposals on the industry’s capacity to innovate is not straightforward.

One of the more recent innovations in the UK veterinary industry has been the introduction of low-cost providers of preventive care and some treatments. As noted earlier, Easipetcare and The Vets are typical of new entrants into this sector of the market. Based on figures from their own business plan, the proposed changes to the PDSA objects are unlikely to have a sufficiently large impact on numbers of pets treated to lead to any substantive diminution of new innovation in the provision of low-cost veterinary services. Whilst some local effects might result, in the absence of detailed local market data, it is impossible to estimate what those effects might be.

On a positive note, the proposed changes could stimulate innovation. The Royal College of Veterinary Surgeons is developing an innovative knowledge resource for the veterinary profession built on the principles of evidence-based theory\(^{30}\). Initial discussions within the veterinary profession have indicated that there is a widespread appetite to develop the practice of evidenced-based veterinary medicine (EBVM). A key element in this development is collating data from veterinary practices. Systematised collection and analysis of electronic patient record (EPR) data from primary-care veterinary practices has been proposed as a means of generating reliable prevalence data relating to the overall dog population\(^{31}\).

Contemporaneous recording of clinical information by veterinary health professionals during episodes of care for every patient treated minimises selection and recall biases in primary-care practice EPR data. By contrast, referral caseloads may show selection bias towards more complicated disorders\(^ {32}\).

In the UK two such EPR systems have recently been developed Vet Compass based in London\(^ {33}\) and SAVSNET based in Liverpool\(^ {34}\). Such EPR databases provide a good guide to number of pets registered by vets and enable large data sets to be subjected to epidemiological analysis. It

\(^{30}\) Cockroft, Peter and Holmes, Mark (2003) **Handbook of Evidence-Based Veterinary Medicine.** Oxford: Blackwell Publishing.


appears unlikely that the PDSA’s proposals will impact on the further development of using EPR; indeed they might provide an opportunity for PDSA clinics to contribute to such surveillance and could provide useful information on the impact of their proposed changes.
2f) What will be the impacts of the proposals in respect of demand for veterinary services?

Evidence rating (+)

**Summary finding:** An effective public education programme could have a significant positive impact on the demand for veterinary services.

The proposed changes to the PDSA’s objects include extending concessionary services; issues influencing the likely consequences of that change on the demand for veterinary services have been dealt with elsewhere in this review.

The proposed changes also include expanding the PDSA’s remit to educate the public in matters concerning animal health and welfare. Plans include delivering collaborative initiatives on pet welfare, and mounting pet health campaigns to increase the uptake of preventive healthcare services.

Evidence suggests that there is a clearly identifiable need for improved public education. For example, the 2013 PAW Report suggests that only 38% of pet owners are familiar with the welfare needs of animals as set out in the Animal Welfare Act. Lack of awareness of animal welfare needs was identified by veterinary professionals as their second highest concern relating to the future of pet care and ownership. Taken in conjunction with figures suggesting that around 2.5 million pets are not currently registered with a vet, it is reasonable to assume that an effective public education programme could have a significant impact on the demand for veterinary services. Certainly, the available evidence supports the view expressed by the PDSA that a national educational programme could not only raise awareness of key animal welfare issues, but could also increase the demand for health and welfare checks and treatment, and encourage more owners to register their pets with a vet. In terms of the impact models outlined in the Background section of the review, this might result in a change to the PDSA client base as described in scenario 2.
2g) What will be the impact of the proposals in respect of a private veterinary surgeon’s “bad debt liability”?

Evidence rating (-)

Summary finding: It is not possible to draw robust conclusions about the impact of the proposed changes on a private veterinary surgeon’s bad debt liability

The proposed changes would enable the PDSA to extend their current services by providing medical or surgical treatment at reduced charges to animals whose owners are unable to afford some or all the charges of a veterinary surgeon. It is entirely possible that extending PDSA services in this way would reduce exposure of the industry to bad debt. A proportion of clients on low incomes would be taken out of the private pet-care system.

The average small-animal veterinary debt is only £60\(^{35}\), although the cost of bad debts does not just equate to lost revenue; it is also in the resources that go into pursuing payment. Bad debt is clearly an issue the industry recognises\(^{36}\). Several specialist debt recovery companies offer services to veterinary practices. However, the review has not seen any evidence on the extent of that debt, or the extent to which it is linked to low income of pet owners.

To that extent, the available evidence does not allow for any robust conclusions to be drawn concerning the impact of the proposals in respect of private veterinary surgeon’s bad debt liability.

\(^{35}\) http://www.pjcds.co.uk/veterinary-debt-collection/

2h) What will be the impacts of the proposals on the amount of fees paid by PDSA to private veterinary practices?

Evidence rating (+)

Summary finding: The proposals are likely to increase the sums paid by the PDSA to private veterinary practices.

PDSA hospitals provide services in 46 towns and cities in the UK. Treatment are provided free of charge to those who cannot afford private veterinary fees and who are in receipt of Housing Benefit or Council Tax Benefit. In communities that are too small for a PDSA hospital, the PetAid Service is available. Under this scheme, the PDSA arrange for local private practices to provide free treatment, on its behalf, to those who qualify for PDSA help. The PDSA pay the private practices a monthly fee for provision of this service. According to the PDSA’s own figures, somewhere in the region of one-third of veterinary practices operate this scheme. In 2013, the PDSA paid £5.6 million to private veterinary practices for treatments carried out.

The proposed changes to PDSA objects will clearly expand the numbers of pet owners eligible for concessionary (reduced) charged-for treatments to pets. Where those people live in the catchment area of a PDSA hospital, and the PDSA hospital has the capacity to provide treatment, the impact on private veterinary practices will be negligible. However, where treatment in a PDSA hospital is not available, the PDSA will in all likelihood look to private veterinary practices to provide treatment through the PetAid service, although the PDSA do not currently plan for PetAid practices to deliver anything other than a free service to PDSA eligible clients.

The review team has not seen any evidence as to the likely numbers of additional treatments the PDSA might seek to arrange through private practice. However, it is clear that those numbers are likely to increase on the figures provided for 2013 should the proposed changes to the PDSA’s objects be approved. The conclusion is therefore that the proposals are likely to increase the amount paid by the PDSA to private veterinary practices, but by an undeterminable figure.
2i) **What will be the impacts of the proposals in relation to costs and administrative burdens on other bodies (including local authorities and central government)?**

**Evidence rating (+)**

**Summary finding:** The proposals might reduce local authorities’ burden of care for stray and abandoned dogs, but are unlikely to involve any additional burden on the benefits system.

The proposals will clearly require the PDSA to develop means by which to establish the extent of pet owners’ capacity to pay the costs of their pets’ care. Data from local PDSA hospitals suggests that the average rate of free service uptake is in the region of 11% of total households. This figure varies considerably between areas, ranging from 5% to 23%.

The burden of establishing eligibility falls to the PDSA. Current practice involves establishing whether pet owners are in receipt of certain means tested benefits. In light of planned government changes to the UK benefits system, the PDSA is considering how they will use entitlement to the new Universal Credit to establish eligibility for free or concessionary rates for medical, surgical and preventive treatments.

The PDSA has experience of applying eligibility criteria; their trading subsidiary has been offering a full range of affordable preventive services since 2006. There is currently no evidence to suggest that establishing the capacity of pet owners’ ability to pay for services will involve any additional burden on the benefits system.

Evidence does suggest that the proposals might reduce the administrative burden that currently falls to local authorities with regard to care for stray and abandoned dogs. The 1990 Environmental Protection Act requires local authorities to kennel stray dogs for up to seven days. The numbers of strays has been growing over recent years, reaching 126,693 in 2013. According to figures from the Microchipping Alliance, around 6% (7,571) of these animals were destroyed, an increase of 18% on the previous year. The annual cost to local authorities of kenneling and euthanising stray dogs has been put at £22 million. Micro-chipping of dogs will be a legal requirement from 2016, but will require support from the veterinary profession, non-governmental organisations, and local authorities to gain high levels of compliance. The campaign of public education as planned by the PDSA under the proposed changes could, if successful, increase the numbers of dogs micro-chipped from the current upper estimate of 70%. International evidence suggests that this could have a significant impact on the proportion of stray dogs returned to their owners. For example, in Sweden, where dog registration is a legal requirement, more than 90% of stray dogs are returned to their owners within 24 hours of being collected by the authorities.

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37 Microchipping Alliance Briefing: Compulsory Identification. [http://www.bva.co.uk/uploadedFiles/Content/News_,_campaigns_and_policies/Policies/Companion_animals/compulsory_microchipping_briefing.pdf](http://www.bva.co.uk/uploadedFiles/Content/News_,_campaigns_and_policies/Policies/Companion_animals/compulsory_microchipping_briefing.pdf)
2) What are the expected financial impacts of the proposals on pet owners?

Evidence rating (++)

Summary finding: The proposed changes would likely have a positive financial impact on low-income pet owners.

Much of the relevant evidence with regard to the question of likely financial impact on pet owners has been reviewed under question 1(b).

To summarise, because of cross subsidy from those provisions being supplied at above cost, the proposed changes would enable the PDSA to extend their provision of free services by providing medical or surgical treatment at reduced charges to animals whose owners live in poverty but fall outside current eligibility criteria.

Financial impact on low-income pet owners will depend on whether (a) significant numbers of people on low incomes own pets; and (b) those on low incomes currently seek treatment for their pets despite the costs.

The proportion of families that own pets appears to be relatively consistent across income groups. Data from US surveys suggest around 30% of low-income families own a cat or dog, compared with 33% of middle-income families. US findings are consistent with UK data showing the distribution of pet ownership across regions to be broadly similar despite regional variations in average incomes. Other UK data published by the PFMA further suggests that households faced with reducing their expenditure tend not to reduce expenditure on their pets. Only 6% of owners have cut back on treats for their pets, 4% on their pet’s food, and 3% on their pet’s health and visits to the vet.

The available evidence therefore suggests that the proposed changes to the PDSA’s objects would be likely to have a positive financial impact on pet owners on low incomes.

Appendix A – report from SAVSNET

Impact of postcode deprivation on owner uptake of preventive healthcare.

Contributors - Alan Radford *, PJ-Noble, Fernando Sánchez-Vizcaíno, David Singleton, Andrew Ash and Phil Jones.

A report by SAVSNET – the Small Animal Veterinary Surveillance Network.

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SAVSNET is collaboration between University of Liverpool and the British Small Animal Veterinary Association. We have developed a network of private veterinary practitioners and commercial diagnostic labs who together contribute electronic health data on companion (cat, dog, rabbit, rodent etc) health. We now have data on over 200,000 animals and 400,000 consults. More information on the data we collect and how we use it can be found at www.savsnet.co.uk. The project is ethically overseen by the University of Liverpool, and its aims are supported by the Royal College of Veterinary Surgeons.

These volumes of data allow us to explore the burden of disease seen in practice, to describe how animals are treated, and increasingly whether these treatments are successful. Data from veterinary practitioners can be linked through the owners’ postcodes to other public databases such as Census data (including, for example, Indices of Multiple Deprivation (IMDs)) and meteorological data (including temperature, rainfall, etc.). The IMDS data are published by government. In England, the calculation of IMD is based on seven distinct “domains” namely Income, Employment, Health, Education and Training, Barriers to Housing, Environment and Crime. Similar scores are produced for Wales and Scotland but the exact mechanisms used to calculate the scores are slightly different.

SAVSNET was asked by David Pritchard (Veterinary Consultancy Services Limited) to explore the link between an owner’s level of deprivation (as defined by their postcode IMD) and their uptake of preventive veterinary healthcare for their pet, especially vaccination.

Executive summary

Vaccine preventable diseases are still regularly diagnosed nationally and so unvaccinated animals remain at considerable risk.

Owners of dogs and cats in the most affluent areas are significantly more likely to take advantage of a range of preventative health care including neutering, insurance and microchipping.

Owners of dogs and cats in the most affluent areas are significantly more likely to have their pets vaccinated at least once.

We explored the link between preventive healthcare and IMDS through three related datasets.
1 – Are vaccine preventable diseases being diagnosed in the UK?

Methods

Diagnostic results were collected from a major UK lab for two major vaccine preventable pathogens namely canine parvovirus (CPV - fatal haemorrhagic diarrhoea), and feline calicivirus (FCV - so called “cat ‘flu”). Data was analysed for the period January 2012 – May 2014. As well as the test result, we also obtained the first two characters of the submitting vet’s postcode, and used this as a surrogate of approximately where the owner / animal lives.

Results and discussion

The data presented in figure 1 confirm that both CPV and FCV are frequently detected when samples are submitted for testing. The average percentage of samples testing positive across the UK was 19% for CPV and 28% for FCV (data not presented).

These maps confirm that vaccine preventable diseases are present throughout most areas of Great Britain. It follows that unvaccinated or poorly vaccinated animals are at risk of acquiring these infections, wherever they live.

Limitations

The commercial sensitivity of these data mean we are not yet in a position to report the precise numbers of samples testing positive in each region. SAVSNET will be able to do this when more data becomes available.

The postcode information obtained with each sample submitted to a laboratory is limited to the first two characters of the submitting veterinary surgeon’s postcode. This means we cannot yet meaningfully link these maps to IMDs.
2 – Does an owner’s IMD affect their uptake of neutering, insurance and microchipping?

Methods

Electronic health records were collected from 20 veterinary practices that used PremVet software (VetSolutions): 25,347 dogs and 10,718 cats.

The owner’s postcode from each consultation was linked to the IMD score for England and Wales (based on the 2001 UK census data). Deprivation scores were categorised into quintiles with category 1 being least deprived. Mixed effects, logistic regression models including practice ID as a random effect, were developed for dependent variables and used to calculate odds ratios.

Results / discussion.

Cats and dogs associated with the most affluent quintiles were more likely to be neutered, insured or microchipped (see Table 1). For neutering this effect was apparent for both male and females.

Whilst these results do not directly address vaccine preventable disease, they do speak about other indices that also have a preventive / welfare impact. Neutering is recommended in non-breeding animals to reduce cancer, prostatic disease, pyometra and unwanted pregnancy. Insurance makes it easier for animals to receive sometimes costly veterinary care. Microchipping helps return lost animals and is becoming recognised as an important part of responsible pet ownership.

Whilst we cannot say that reduced uptake of these “health care” practices by owners in more deprived areas is a reflection of their ability to pay, we can speculate that it would be a contributing factor.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender and species</th>
<th>IMD</th>
<th>Odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutering</td>
<td>Male dogs</td>
<td>5 (most)</td>
<td>1.00 - 1.59 (1.39, 1.79)**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (least)</td>
<td>1.00 - 1.74 (1.51, 1.98)**</td>
</tr>
<tr>
<td></td>
<td>Female dogs</td>
<td>5 (most)</td>
<td>1.00 - 2.81 (2.07, 3.56) **</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (least)</td>
<td>1.00 - 2.13 (1.63, 2.63) **</td>
</tr>
<tr>
<td></td>
<td>Male cats</td>
<td>5 (most)</td>
<td>1.00 - 1.80 (1.47, 2.13) **</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (least)</td>
<td>1.00 - 1.57 (1.42, 1.72) **</td>
</tr>
<tr>
<td></td>
<td>Female cats</td>
<td>5 (most)</td>
<td>1.00 - 1.67 (1.43, 1.92) **</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (least)</td>
<td>1.00 - 1.57 (1.42, 1.72) **</td>
</tr>
<tr>
<td>Insurance</td>
<td>Dogs</td>
<td>5 (most)</td>
<td>1.00 - 1.54 (1.37, 1.71) **</td>
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<td></td>
<td></td>
<td>1 (least)</td>
<td>1.00 - 1.80 (1.47, 2.13) **</td>
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<tr>
<td></td>
<td>Cats</td>
<td>5 (most)</td>
<td>1.00 - 1.57 (1.42, 1.72) **</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (least)</td>
<td>1.00 - 1.67 (1.43, 1.92) **</td>
</tr>
</tbody>
</table>

Table 1: Effect of IMD on neutering, insurance, microchipping in dogs and cats (**p<0.001).

Limitations

Those animals identified here as not neutered, insured or microchipped may include some animals that are, but where the veterinary surgeon has not included this in the animal’s electronic health record.
3 – Does an owners IMD affect their uptake of vaccination?

Methods

This study was similar to that above with the following differences.

IMD scores were used only for England and were based on the 2007 census data.

Data were collected between January 2014 and September 2014 from 57 practices using the RoboVet software (VetSolutions) and included 16,630 dogs, and 7,727 cats. A vaccinated animal was defined as an animal that had ever had a vaccine regardless of the antigen.

Results and Discussion

Both cats and dogs associated with the most affluent quintiles were more likely to ever have been vaccinated (see Table 2). Dogs from the most affluent quintile were 1.81 times more likely to ever have been vaccinated. For cats the figure was 1.93.

Whilst we can’t say that reduced uptake of vaccination by owners in more deprived areas is a reflection of their ability to pay, we can speculate that it would be a contributing factor.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Species</th>
<th>IMD</th>
<th>Odds ratio (95% CI)</th>
</tr>
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<tbody>
<tr>
<td>Vaccination</td>
<td>Dogs</td>
<td>5 (most)</td>
<td>1.00 –</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (least)</td>
<td>1.81 (1.46 - 2.26) **</td>
</tr>
<tr>
<td></td>
<td>Cats</td>
<td>5 (most)</td>
<td>1.00 –</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (least)</td>
<td>1.93 (1.51 - 2.46) **</td>
</tr>
</tbody>
</table>

Table 2: Effect of IMD on vaccination in dogs and cats (**p<0.001).

Limitations.

Here a vaccinated animal means an animal that has ever had a vaccine regardless of the antigen. This category will include animals that are “fully” vaccinated according to established guidelines, and also those that have been vaccinated but are now out of date (for example a 10 year old dog only vaccinated as a puppy). Those animals without a vaccine history will clearly include those animals that are not vaccinated, but also those where the veterinary surgeon has not input a vaccination into the animal’s electronic health record.

NOTE
These data were generated by SAVSNET. They are to the best of our intentions correct and accurate at the time of publication. They were produced to a very short deadline. There is clearly further work that could be done on impacts of deprivation on pet health care. We welcome further discussions about how our data could be used. The information contained in this report is only to be used to support discussions relating to the VCS Impact Assessment for legislation for PDSA.

For more information on SAVSNET please see www.savsnet.co.uk