**Title:**
MICROCHIPPING OF DOGS ANNEX B

**IA No:** Defra 1372

**Lead department or agency:**
Defra

**Other departments or agencies:**

# Impact Assessment (IA)

**Date:** 22/03/2012

**Stage:** Consultation

**Source of intervention:** Domestic

**Type of measure:** Secondary legislation

**Contact for enquiries:** Henry Hoppe 020 7238 5933

## Summary: Intervention and Options

**RPC Opinion:** AMBER

| Cost of Preferred (or more likely) Option | | | | |
|---|---|---|---|---|
| **Total Net Present Value** | **Business Net Present Value** | **Net cost to business per year** (EANCB on 2009 prices) | **In scope of One-In, One-Out?** | **Measure qualifies as** |
| £17m | £-2.9m | £0.3m | Yes | IN |

**What is the problem under consideration? Why is government intervention necessary?**

There is growing stakeholder concern over the impact on society of irresponsible dog owners. Irresponsible ownership creates negative externalities through an increase in the number of lost/abandoned dogs which leads to poor dog welfare, increased likelihood of dog attacks and results in an annual cost of £57.5m to Local Authorities and welfare organisations. There have been significant efforts by charities to incentivise microchipping take-up (improving traceability and more responsible ownership) however as the numbers of strays are increasing, these measures have not been wholly effective. Government intervention is now necessary to increase the numbers of microchipped dogs to benefit dog welfare and wider society.

**What are the policy objectives and the intended effects?**

The policy objective is to increase traceability of dogs through microchipping and provide a deterrant against irresponsible ownership. This is an integral part of a wider package. More lost dogs will be re-united with their owners more quickly to the benefit of owners and dogs and saving Local Authorities and charities considerable kennelling costs. It will also be easier for those responsible for tackling abuses of dog welfare to bring owners to account and to protect public safety. Traceability back to breeders will in the longer term lead to dog health improvements as poor breeding conditions and practices lead to health problems and generic/congenital problems.

**What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)**

Option 0 -Do nothing and rely on owners and/or existing campaigns by dog charities and voluntary agreements to encourage more microchipping.
Option 1 - All dogs to be microchipped and their details registered on a database on a transfer of ownership.
Option 2 - All dogs to be microchipped on transfer of ownership for 5 years from when it will be compulsory for all dogs to be microchipped (a compromise between options 1 and 3).
Option 3 - All dogs to be microchipped and registered within 12 months of legislation coming into force.
Option 4 - Require puppies only to be microchipped and registered on a database on transfer of ownership.
Option 4 is the preferred option at present as it does not impose burdens on existing dog owners or anyone selling or gifting an adult dog. It it is proposed to consult on the pros and cons of all the options to help establish the final preferred approach.

**Will the policy be reviewed?** It will/will not be reviewed. **If applicable, set review date:** 06/2016

| | | | | | |
|---|---|---|---|---|---|
| Does implementation go beyond minimum EU requirements? | | | N/A | | |
| Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base. | **Micro** Yes | **< 20** Yes | **Small** Yes | **Medium** Yes | **Large** Yes |
| What is the $CO_2$ equivalent change in greenhouse gas emissions? (Million tonnes $CO_2$ equivalent) | | | **Traded:** N/A | **Non-traded:** N/A | |

***I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.***

Signed by the responsible SELECT SIGNATORY: ..... Date: .....

# Summary: Analysis & Evidence

Policy Option 1

**Description:** Require all dogs to be microchipped on a transfer of ownership

**FULL ECONOMIC ASSESSMENT**

| Price Base Year | PV Base Year | Time Period Years | Net Benefit (Present Value (PV)) (£m) | | |
|---|---|---|---|---|---|
| | 2012 | 10 | **Low:** | **High:** | **Best Estimate:** 17 |

| COSTS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---|---|---|---|---|
| **Low** | 0.3 | 1 | 0.3 | **4** |
| **High** | 0.5 | | 1.5 | **12** |
| **Best Estimate** | 0.3 | | 0.9 | **8** |

**Description and scale of key monetised costs by 'main affected groups'**

Costs of iimplanting the microchip will fall on business and civic society organisations which totals £0.3 million per annum.
The public will also incur a microchip implantation and update cost which totals £0.6 million per annum.
There will be transition costs of £0.3m to business for microchip scanners and training. Government will incur a minor transition cost of £0.02m to publicise the policy.

**Other key non-monetised costs by 'main affected groups'**

The time taken by the public to update their details on database as required.
Any additional costs associated with enforcing the policy which will be incurred by the public sector.

| BENEFITS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---|---|---|---|---|
| **Low** | | | 0.7 | **5** |
| **High** | | | 12 | **75** |
| **Best Estimate** | | | 3.9 | **25** |

**Description and scale of key monetised benefits by 'main affected groups'**

Civic society organisations benefit from a greater traceability of dog owners which means more dogs can be reunited with their owners therefore reducing kennelling and care costs. This benefit equals £3.7m per annum. Local Authorities also benefit from more dogs being reunited with their owners and this equals £0.2m per annum.

**Other key non-monetised benefits by 'main affected groups'**

Dogs and owners re-united more quickly. The public benefits from any associated impacts arising from more responsible dog ownership such as animal welfare improvements and reduced incidences of dog attacks. Irresponsible breeding and the poor health conditions in dogs which result could fall as greater uptake of microchipping means more breeders will be traced to dogs thus increasing the risk of being caught improperly breeding.

**Key assumptions/sensitivities/risks** **Discount rate (%)** 3.5

Given the passive approach to enforcement and legislative uncertainty, there are risks concerning the likely compliance with the regulations.
Key assumptions and sensitivities relate to: the baseline growth and uptake of microchipping, the price of a microchip, updating details, scanner and training and the change in identifiable stray dogs resulting from an increase in microchipping.

**BUSINESS ASSESSMENT (Option 1)**

| Direct impact on business (Equivalent Annual) £m: | | | In scope of OIOO? | Measure qualifies as |
|---|---|---|---|---|
| **Costs:** 0.3 | **Benefits:** 0 | **Net:** 0.3 | Yes | IN |

# Summary: Analysis & Evidence

Policy Option 2

**Description:** To require all dogs to be microchipped on transfer of ownership for a period of 5 years after which it will become compulsory for all dogs to be microchipped.

**FULL ECONOMIC ASSESSMENT**

| Price Base Year | PV Base Year | Time Period Years | Net Benefit (Present Value (PV)) (£m) | | |
|---|---|---|---|---|---|
| | 2012 | 10 | **Low:** | **High:** | **Best Estimate:** 38 |

| COSTS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---|---|---|---|---|
| **Low** | 0.3 | 1 | 1.5 | **14** |
| **High** | 0.5 | | 3.4 | **29** |
| **Best Estimate** | 0.3 | | 2.5 | **22** |

**Description and scale of key monetised costs by 'main affected groups'**

Costs of implanting the microchip will fall on business and civic society organisations which totals £0.9 million per annum.
The public will also incur a microchip implantation and update cost which totals £1.6 million per annum.
There will be transition costs of £0.3m to business for microchip scanners and training. Government will incur a minor cost of £0.04m to publicise the policy.

**Other key non-monetised costs by 'main affected groups'**

The time taken by the public to update their details on database as required.
Any costs associated with enforcing the policy which will be incurred by the public sector.

| BENEFITS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---|---|---|---|---|
| **Low** | | | 2.1 | **14** |
| **High** | | | 25.6 | **160** |
| **Best Estimate** | | | 9.4 | **59** |

**Description and scale of key monetised benefits by 'main affected groups'**

Civic society organisations benefit from a greater traceability of dog owners which means more dogs can be reunited with their owners therefore reducing kennelling and care costs. This benefit equals £9.0m per annum. Local Authorities also benefit from more dogs being reunited with their owners and this equals £0.4m per annum.

**Other key non-monetised benefits by 'main affected groups'**

Dogs and owners re-united more quickly. The public benefits from any associated impacts arising from more responsible dog ownership such as animal welfare improvements and reduced incidences of dog attacks. Irresponsible breeding and the poor health conditions in dogs which result could fall as greater uptake of microchipping means more breeders will be traced to dogs thus increasing the risk of being caught improperly breeding.

**Key assumptions/sensitivities/risks** **Discount rate (%)** 3.5

Given the passive approach to enforcement and legislative uncertainty, there are risks concerning the likely compliance with the regulations.
Key assumptions and sensitivities relate to: the baseline growth and uptake of microchipping, the price of a microchip, updating details, scanner and training and the change in identifiable stray dogs resulting from an increase in microchipping.

**BUSINESS ASSESSMENT (Option 2)**

| Direct impact on business (Equivalent Annual) £m: | | | In scope of OIOO? | Measure qualifies as |
|---|---|---|---|---|
| **Costs: 0.9** | **Benefits:** 0 | **Net:** 0.9 | Yes | IN |

# Summary: Analysis & Evidence

Policy Option 3

**Description:** Require all dogs to be microchipped and registered by a set date

**FULL ECONOMIC ASSESSMENT**

| Price Base Year | PV Base Year | Time Period Years | Net Benefit (Present Value (PV)) (£m) | | |
|---|---|---|---|---|---|
| | 2012 | 10 | **Low:** | **High:** | **Best Estimate:** 83.9 |

| COSTS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---|---|---|---|---|
| **Low** | 0.4 | 1 | 1.5 | **19** |
| **High** | 0.7 | | 3.8 | **36** |
| **Best Estimate** | 0.4 | | 2.8 | **27** |

**Description and scale of key monetised costs by 'main affected groups'**

Costs of implanting the microchip will fall on business and civic society organisations which totals £1.0 million per annum. The public will also incur a micro chip implantation and update cost which totals £1.8 million per annum. There will be transition costs of £0.4m to business for microchip scanners and training and cost of databases meeting rise in demand. Government will incur a minor transition cost of £0.04m to publicise the policy.

**Other key non-monetised costs by 'main affected groups'**

The time taken by the public to update their details on database as required.
Any costs associated with enforcing the policy which will be incurred by the public sector.

| BENEFITS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---|---|---|---|---|
| **Low** | | | 3.8 | **30** |
| **High** | | | 39.7 | **284** |
| **Best Estimate** | | | 15.0 | **111** |

**Description and scale of key monetised benefits by 'main affected groups'**

Civic society organisations benefit from a greater traceability of dog owners which means more dogs can be reunited with their owners therefore reducing kennelling and care costs. This benefit equals £14.4m per annum. Local Authorities also benefit from more dogs being reunited with their owners and this equals £0.7m per annum.

**Other key non-monetised benefits by 'main affected groups'**

Dogs and owners re-united more quickly. The public benefits from any associated impacts arising from more responsible dog ownership such as animal welfare improvements and reduced incidences of dog attacks. Irresponsible breeding and the poor health conditions in dogs which result could fall as greater uptake of microchipping means more breeders will be traced to dogs thus increasing the risk of being caught improperly breeding.

**Key assumptions/sensitivities/risks** **Discount rate (%)** 3.5

Given the passive approach to enforcement and legislative uncertainty in the first 5 years, there are risks concerning the likely compliance with the regulations.
Key assumptions and sensitivities relate to: the baseline growth and uptake of microchipping, the price of a microchip, updating details, scanner and training and the change in identifiable stray dogs resulting from an increase in microchipping.

**BUSINESS ASSESSMENT (Option 3)**

| Direct impact on business (Equivalent Annual) £m: | | | In scope of OIOO? | Measure qualifies as |
|---|---|---|---|---|
| **Costs: 1.0** | **Benefits:** 0 | **Net:** 1.0 | Yes | IN |

# Summary: Analysis & Evidence

Policy Option 4

**Description:** Require all puppies to be microchipped

**FULL ECONOMIC ASSESSMENT**

| Price Base Year | PV Base Year | Time Period Years | Net Benefit (Present Value (PV)) (£m) | | |
|---|---|---|---|---|---|
| | 2012 | 10 | **Low:** | **High:** | **Best Estimate:** 17 |

| COSTS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---|---|---|---|---|
| **Low** | 0.3 | | 0.3 | **4** |
| **High** | 0.5 | 1 | 1.5 | **12** |
| **Best Estimate** | 0.3 | | 0.9 | **8** |

**Description and scale of key monetised costs by 'main affected groups'**

Costs of implanting the microchip will fall on business and civic society organisations which totals £0.3 million per annum.
The public will also incur a microchip implantation and update cost which totals £0.6 million per annum.
There will be transition costs of £0.3m to business for microchip scanners and training. Government will incur a minor transition cost of £0.02m to publicise the policy.

**Other key non-monetised costs by 'main affected groups'**

The time taken by the public to update their details on database as required.
Any additional costs associated with enforcing the policy which will be incurred by the public sector.

| BENEFITS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---|---|---|---|---|
| **Low** | | | 0.7 | **5** |
| **High** | | | 12.0 | **75** |
| **Best Estimate** | | | 3.9 | **25** |

**Description and scale of key monetised benefits by 'main affected groups'**

Civic society organisations benefit from a greater traceability of dog owners which means more dogs can be reunited with their owners therefore reducing kennelling and care costs. This benefit equals £3.7m per annum. Local Authorities also benefit from more dogs being reunited with their owners and this equals £0.2m per annum.

**Other key non-monetised benefits by 'main affected groups'**

Dogs and owners re-united more quickly. The public benefits from any associated impacts arising from more responsible dog ownership such as animal welfare improvements and reduced incidences of dog attacks. Irresponsible breeding and the poor health conditions in dogs which result could fall as greater uptake of microchipping means more breeders will be traced to dogs thus increasing the risk of being caught improperly breeding.

**Key assumptions/sensitivities/risks** **Discount rate (%)** 3.5

Given the passive approach to enforcement and legislative uncertainty, there are risks concerning the likely compliance with the regulations.
Key assumptions and sensitivities relate to: the baseline growth and uptake of microchipping, the price of a microchip, updating details, scanner and training and the change in identifiable stray dogs resulting from an increase in microchipping.

**BUSINESS ASSESSMENT (Option 4)**

| Direct impact on business (Equivalent Annual) £m: | | | In scope of OIOO? | Measure qualifies as |
|---|---|---|---|---|
| **Costs: 0.3** | **Benefits:** 0 | **Net:** 0.3 | Yes | IN |

# Evidence Base (for summary sheets)

## Introduction

1. The Government is determined to promote good animal welfare and responsible pet ownership, and ensure enforcement agencies target irresponsible owners of dangerous dogs. This particular proposal is part of a package of measures proposed by the Government as a way of reducing dog attacks, making owners more responsible for their dogs as well as reducing the cost of enforcing the law on dangerous dogs. The other proposals that will impact on businesses, courts, police and others are: (i) extending the criminal offence of allowing any dog to be dangerously out of control to private property (where the dog has a right to be); and (ii) removing the requirement for the police to hold suspected prohibited type dogs while the case is being dealt with in the courts. The reference numbers of the impact assessments relating to (i) and (ii) above, are DEFRA 1412 and DEFRA 1411 respectively.
2. In addition, the Government has also agreed to make funding available for evaluating local community initiatives to foster responsible dog ownership and setting up a network to ensure sharing of best practice between police officers responsible for dangerous dog work. We are also proposing to increase the fee for placing a prohibited type dog on the Index of Exempted Dogs to reflect the increase in administrative costs, since 1997 when the fee was last increased, from £20+VAT to £77+VAT. This will reduce the costs of public money on administering the Index. The reference number for the impact assessment for this proposal is DEFRA 1255.

## Problem under consideration

3. There has been growing concern from the public and major Governmental and non-Governmental stakeholders including local authorities, police, dog charities and the public regarding the prevalence of irresponsible dog ownership. Irresponsible dog ownership encompasses factors such as: neglecting the welfare of the dog, breeding dogs for appearance and failing to consider the implications for health and inability to keep dogs under control in public places. A key factor in improving dog welfare is the ability or otherwise to trace dogs to their owners which decreases pressure on re-homing centres and assists enforcement agencies tracing irresponsible owners and breeders. Traceability allows lost dogs to be quickly re-united with their owners and avoids them having to spend unnecessary time in kennels with possible attendant welfare problems or having to be re-homed. It also allows abandoned dogs and nuisance dogs to be traced to their owners who may then be held to account. It may also lead back to irresponsible breeders or identify stolen dogs and help bring those responsible to account. The greater the traceability of dogs to owners, the more accountable owners become for the welfare and behaviour of their dogs. It therefore follows that improving traceability will lead to more responsible dog ownership and help alleviate the concerns of stakeholders and the public.

## Rationale for Intervention

4. Irresponsible dog ownership can create negative impacts on society (negative externalities) such as dog attacks, poor animal welfare and the cost to society of having to treat and care for abandoned dogs. It is therefore a case of market failure as defined in the Treasury Green Book and this policy is intended to limit its impact. Implanting a microchip in a dog increases the traceability of the dog to its owner therefore making it more likely that irresponsible owners can be found and punished. This helps ensure a greater proportion of irresponsible owners incur costs as a result of their actions, therefore also acting as a deterrent against irresponsible ownership.
5. One of the most prevalent negative externalities to society associated with dog ownership is that arising from the abandonment of dogs. Increasing the traceability of dog owners will reduce the number of dogs which cannot be reunited with their owners therefore reducing the kennelling costs of Local Authorities and welfare organisations. The current financial climate and the proliferation of Staffordshire bull terrier and Staffordshire crosses (which according to RSPCA and other animal welfare organisations are more likely to be abandoned) are contributing to the numbers of stray dogs rising. Re-homing centres are reporting that they are so full that they can no longer take in dogs from people that can no longer care for their dogs. . This will result in increased pressure on

re-homing centres and an increase in healthy dogs having to be destroyed by re-homing centres that do not have the capacity to care for the increasing numbers of abandoned dogs - with clear animal welfare implications.

6. Responsible dog ownership and its associated effects (e.g. improved welfare, less lost/abandoned dogs and appropriate dog breeding) provide an intrinsic benefit to people who care about dogs and to society in general. The owners know they can get their dogs back quickly if lost and dogs will spend less time in kennels. This has clear welfare benefits to the dogs and their owners and it will have cost savings to Local Authorities/re-homing centres looking after the dogs. Communities have less lost and abandoned dogs in the community and society would benefit from fewer dog related problems such as fouling and from fewer dog attacks requiring treatment.

7. A public consultation on the capability of current legislation to protect the public from Dangerous Dogs and encourage responsible dog ownership was conducted from 9th March 2010 to 1st June 2010. This consultation revealed strong support for microchipping with 84% (1,575 out of 1,875) of respondents replying that all dogs should be microchipped. Only 38% of respondents believed that a requirement to have all dogs microchipped will have a significant financial impact upon individual dog owners in particular there was concern expressed about the cost of updating personal details with 67% of respondents of the view that maintaining an up-to-date database would have a financial impact.

**Microchipping - Policy objective and rationale**

8. The policy objective of this and related measures is the need to improve dog health and welfare and incentivise responsible ownership. A key component of a range of measures being considered, is seeking to achieve better traceability of all dogs and their owners. There is existing legislation which encourages traceability; The Control of Dogs Order 1992 requires any dog on any highway or in a public place to wear a collar with the name and address of the owner on it, or on a plate or badge attached to the collar. However this policy has proven to have major drawbacks as collars and tags can easily be lost and need replacing or can be deliberately removed. Moreover, collars and tags are not a legal requirement in the home so if a dog escapes it will not be traceable if it was not wearing its collar. A microchip therefore provides a permanent identification that will not get lost.

9. In an independent inquiry into Dog Breeding[1], Professor Patrick Bateson (FRS, Emeritus Professor of Ethology at Cambridge University) noted that:

*'In many quarters view is strongly expressed that each dog in the United Kingdom should be microchipped, preferably by the breeder. One argument for doing so is that microchipping would greatly facilitate those whose job it is to control abuses of dog welfare by making it much easier to trace animals back to their owner and breeder. It would enable owners of errant pets to get them back more easily and also make dog owners more responsible. It would be a deterrent against dog theft and possibly lead to savings to Local Authorities by reducing kennelling costs.'*

Compulsory microchipping is supported by the Police, Veterinarians (Royal College of Veterinary Surgeons and British Veterinary Association) and welfare organisations including the RSPCA, Dogs Trust Advisory Council on the Welfare of Dogs, Blue Cross and Battersea Dogs and Cats Home. It is firmly believed this measure will have a positive impact on animal welfare and may assist in the control of dangerous and nuisance dogs. The traceability of all dogs to their owners and ultimately back to the breeders will help to encourage more responsible ownership and breeding as enforcement authorities will find it easier to take remedial action and where appropriate prosecutions.

10. Microchipping offers many potential benefits:

- Easier to return a stray dog to its owner – Some 106,000 stray dogs were picked up by Local Authorities in England in 2010 with 6,000 having to be destroyed and 52,000 being passed to welfare organisations without an owner.[2] The cost incurred by Local Authorities and welfare organisations of kennelling and euthanising stray dogs in England is significant at approximately £57.5m per annum (see paragraphs 66-67**)**. If more dogs are traceable to their

1 Independent Inquiry into Dog Breeding, Patrick Bateson, University of Cambridge, 2010

2 Dogs Trust September 2010

owners then the number of unidentified strays found will fall and so will the associated costs to Local Authorities;

- Microchips will increase traceability to owners - this acts as a deterrent to those owners likely to be irresponsible;
- Will aid in issuing control orders and in prosecutions of cruel and irresponsible owners – increasing traceability means offenders will be easier to identify;
- Will help identify bad breeders/puppy farmers – Poorly bred dogs will be traceable to their breeders through the microchip;
- May be a deterrent against dog theft – dogs become identifiable to their owners and therefore it can be determined if a dog is stolen;
- Ability for vets to contact owners for health schemes and emergency procedures; and
- Will assist control measures in case of any diseases that can be transferred to humans such as rabies.

**Microchipping – Background**

11. Microchipping is a quick and permanent way of identifying a dog, taking no more than a couple of minutes. A microchip is a passive device unless stimulated by an appropriate scanner which can receive a radio signal from the microchip indicating its 15 digit identification code. This code can then be mapped against the data recorded on the microchip database to identify the owner of the dog.

12. Microchipping must be done by a competent, trained person to ensure there is no physical distress, discomfort or resultant behavioural problems. Veterinary advice is that microchipping may safely be done at 8 weeks for all dogs provided the implanter is trained and competent and the dog is in good health. Vets and welfare organisations, dog wardens, dog training clubs, rescue centres and grooming businesses have ready trained implanters and a number of voluntary sector organisations offer training on microchipping to Local Authorities. It is therefore those breeders that themselves may wish to microchip and register their puppies that may require training. Training costs are generally between £90 and £185 depending upon supplier. Those carrying out microchipping will also need to have scanners to read the microchip details. Suitable scanners cost £80-£150 but can cost more for the most advanced models.

13. The cost of the microchips and registering dogs to installers is £4-7 per dog including the cost of the microchip, registration of the breeders' details on one of the four UK databases and maintenance of the database. Typically implanters charge £10-40 for the microchip to dog owners (a mark-up of £6-36) which includes the cost of implantation. Many re-homing charities and local authorities provide microchips free for those on income support (further thought is being given by these bodies to how they may continue to target the socially deprived and contribute to the microchipping and neutering of dogs). The large variation in price is caused by variations in the consultation price of the person implanting the microchip. In the light of the investments we anticipate breeders will undertake in equipment and training (paragraph 39 below), the increased numbers able to undertake microchipping will lead to more competition in the supply of microchipping and we assume a cost of £5.50 per microchip in the calculations below.

14. Registration may be done online (e.g. at veterinary surgeries, re-homing centres, or by breeders – a pin number needs to be issued by the database provider) or by post. To update the records stored on their database, Pet Log charge dog owners £10 for a "lifetime service" of unlimited updates; an owner may update their details however often they require for no additional cost. The other large database, Anibase charge £6 for a single update and £17 for an 8 year unlimited update service. In the calculations below, we assume a one-off up-front cost of £10 to all owners of newly microchipped animals to cover updates**.**

15. The dog population in the United Kingdom is generally accepted to be around 8 million, as estimated by the Pet Food Manufacturers Association.[3] Assuming that dog ownership is proportional to UK's population (84% of the UK population resides in England[4]) it follows that there are approximately 6.7 million dogs in England. The average lifespan of a dog is approximately 12

[3] Pet Food Manufacturers Association, Annual Report 2011

[4] Office of National Statistics 2009

years, which implies that approximately 560,000 dogs are born each year, to maintain a static dog population (see also paragraph 36).

16. To estimate the number of dogs un-microchipped in England we contacted Petlog and Anibase the two largest microchip providers and between them they estimate that they have 3.3 million live English dogs which are microchipped on their databases. The databases estimate that they have a combined market share of 85% which in turn implies that the total number of microchipped dogs is 3.9 million, leaving 2.8 million dogs (42%) un-microchipped in England.

## Policy Options

*Option 0: Do nothing and rely solely on owners and/or voluntary options and/or existing campaigns by dog charities to encourage more microchipping*

17. Microchipping of dogs is currently mostly taken up on a purely voluntary basis (except where legally required such as racing greyhounds, dangerous dogs and for pet passports). The microchips are a cheap and easy way for dogs to be identified and re-united with their owners whether they may have been lost or stolen. Identification can have welfare benefits by reducing the amount of time dogs spend in kennels while attempts are made to re-unite them with their owners. For these reasons, microchipping is highly recommended by animal welfare organisations, veterinary surgeons and dog keeping groups. Successive governments have also added their voice to encourage owners to microchip their dogs.

18. The Kennel Club together with Dogs Trust and other welfare organisations have provided significant financial support of initiatives aiming to increase the voluntary uptake of microchipping over the years. These initiatives include funding microchips for lower income owners, regional microchip installation, and advertising campaigns. Veterinarians also encourage microchipping.

19. The Dogs Trust, in common with other re-homing/rescue centres microchip every dog that arrives at their 17 re-homing centres in the UK without a microchip. In 2010 it microchipped 10,677 dogs. All their centres offer £10 dog microchipping to any owner or free microchipping for owners on means tested benefits. The Dogs Trust have given out over 82,000 free microchips to Councils and Housing Associations across the UK since Jan 2011 to allow them to promote free microchipping in their communities.

20. The Dogs Trust teams in their campaign regions (North of England, London) hold weekly Responsible Dog Ownership events in key hotspot areas (identified in conjunction with their councils) offering Free Dog Microchipping. In London alone it has carried out over 110 events from 1 January to 31 October 2011, across 16 councils. Free microchipping is offered at each and every event. As well as free microchips, the Dogs Trust has offered all Councils and Housing Associations in the North of England and Greater London free scanners, free microchipping training for all their staff, free microchipping literature to use to promote microchipping in their community, and free support with organising microchipping events in their borough or estates. Finally, the Dogs Trust offer free legal advice through a specialist solicitor to help Councils and Housing Associations consider ways in which their tenancy agreements can be used to promote responsible dog ownership through compulsory microchipping.

21. To further encourage voluntary uptake the Government could provide funds to welfare organisations to expand their existing promotion of microchipping. It is however, questionable whether additional resources will significantly increase voluntary uptake given the strength of existing provisions provided by the Dogs Trust and others. We and the voluntary sector consider that the efforts being made by the voluntary sector have achieved significant results but fall short of securing a significant increase in the current rate of microchipping, that would reverse the trends of increasing numbers of strays reported by the voluntary sector, increase the numbers of lost dogs re-united quickly with their owners, relieve the pressure on Local Authorities and re-homing and consequential reduction in the cost of caring for and re-homing stray dogs and helping reduce dog nuisance and attacks through the increased traceability.

22. A Dogs Trust Survey carried out in 2011 showed that for the business year 2010-2011 there were approximately 105,840 stray dogs in England. This number has risen sharply since 2007-2008 when there were about 81,480 such dogs (an increase of nearly 30%) but this could be a result of past under-reporting by Local Authorities. The result was that about 6,000 healthy dogs had to be

euthanised in 2010 because homes could not be found for them. The general financial situation and pressure on re-homing centres is likely to cause this figure to increase.

23. Financial constraints are not assumed in themselves to be an impediment for owners to microchip. Installation of a microchip costs at most between £15-40 which is a small expense relative to the lifetime expense of a dog which is between £16,000 - £31,000 depending on the breed and size of the dog. Furthermore, as noted above welfare organisations provide a free microchipping service to those on income support. Welfare organisations already strongly promote microchipping and a majority of vets offer a microchipping service. Improving availability and/or information is therefore unlikely to significantly increase voluntary uptake.

24. If the status quo were to continue it would take many years, if at all, for almost full uptake of microchipping to be realised. According to best estimates from welfare organisations, 58% of all dogs are microchipped. Whilst this figure has risen from twenty years ago, it has remained rather constant over recent years. While Petlog have reported there was a 4.5% increase in animals registered in 2010 over those registered in 2009, it is likely that this growth rate will decline over time as more and more dogs become microchipped.

25. *Voluntary schemes*. One alternative to boosting voluntary uptake is to initiate a voluntary agreement with dog breeders which encourages them to microchip all dogs. The dog breeding industry is diverse and fragmented, some dogs are bred by registered breeders (breeders who breed more than 5 litters a year) while others are sold by small scale hobbyist breeders. Kennel Club Accredited Breeders are already strongly advised to microchip as part of the rules of the Accredited Breeder Scheme while other very small scale breed*ers* will be difficult to capture under the terms of a voluntary agreement.

26. It is unlikely that further resources allocated to encouraging voluntary uptake amongst owners will increase uptake sufficiently to justify Government spending. Furthermore, due to the diverse and fragmented nature of the dog breeding industry as well as strong pre-existing arrangements a voluntary agreement with dog breeders is unlikely to be a solution. Given the efforts made already to encourage owners to microchip their dogs and the limited success this has had, it is firmly believed by the voluntary sector and enforcers that the only way to achieve a significant increase in the take-up of microchipping is for government intervention through the introduction of compulsory microchipping Government bodies and welfare stakeholders are united in calling for legislation to introduce compulsory microchipping in order to capture more of the associated benefits from greater uptake. Doing nothing is not a preferred option For these reasons we have not conducted a cost benefit analysis of any policies aiming to increase voluntary uptake within this Impact Assessment

Existing Microchip databases

27. There are currently 4 databases registering microchips in England. Moving to a form of compulsory microchipping will increase demand for microchips therefore creating market opportunities for new market entrants. This increased demand may lead to further databases being established**.** It is anticipated that, to ensure minimum standards of service are met and to avoid any unscrupulous operators setting up business, all databases, existing and new, will need to meet minimum standards. Whilst databases are not currently formally approved, the risk is that without minimum standards providers may set up cut price systems that do not offer a satisfactory level of service and as a result situations needing an urgent response are not resolved. To achieve this, service and data protection standards will need to be agreed, which might include meeting standards already set out in Part 2 of The Welfare of Racing Greyhounds Regulations 2010, or else the databases should achieve compliance with ISO standards. Of the databases operating in England only Petlog is currently ISO certified, so it is likely therefore that other existing databases may incur costs associated with meeting the standards established by any Defra approval scheme if after consultation it is decided to insist on all databases being ISO compliant (also see paragraph 54 ).

28. The databases will need to contain name and contact details of breeders and owners, and registered keepers where different from owners. Some re-homing centres retain ownership of re-homed dogs so that, if lost or abandoned or the dogs are no longer wanted by their keepers, the dogs can be returned and cared for. In this circumstance the keepers name will be needed on

record as the person responsible for the care and behaviour of the dog. The term "owner" in this Impact assessment should be taken in this context.

*Option 1: Require that dogs be microchipped on transfer of ownership*

29. This option envisages that all dog traders microchip dogs before sale and register the microchip number and their details, along with those of the person to whom the dog is sold or gifted, on a database before sale or transfer of ownership. It is expected that the legal obligation to install the microchip will fall on the seller or gifter of the dog while the obligation to ensure their database details are correct will fall on the owner. Requiring the breeder or other persons transferring ownership to register the details of the new owner (rather than the new owner registering their details as at present) has the benefit of ensuring that the current owner (or keeper as appropriate) is always traceable and can be reunited with their dog or held to account as appropriate. The person transferring ownership will not wish to be held responsible if the dog subsequently causes a problem so it is in the seller's interest to record the new owner's details. This practice is already accepted in society, for example on sale of a motor car. The alternative is for the new owner to amend details to the database on acquisition of the dog. Whilst this option would remove the burden on micro-businesses as far as breeders are concerned (but not on the small number of small pet shops selling dogs) there would be no incentive on the new owner to comply with registering their details on the microchip database. They might forget or actively decide not to comply and false details of breeder or purchaser might be entered. It is therefore the case that to ensure appropriate compliance with this measure the incentive to register should fall on the seller or gifter while the obligation to ensure their database details are correct will fall on the owner.

30. This regulation will apply to newly born dogs as well as anyone selling or gifting an older dog. It would be an offence not to comply and/or to fail to keep the registered details up to date. This option does not impose a requirement and therefore a financial burden on owners of older dogs who have the freedom of choice whether or not to have their dogs microchipped if they are keeping their current dog, but anyone breeding a dog and keeping it for themselves will also need to microchip and register that dog and keep the details current too. This will avoid owners falsely claiming that they have not microchipped their dog because they have bred and kept it when they had in fact failed to microchip their dog or update their ownership records to avoid compliance with the law.

31. Over a period of time as population turnover occurs, all dogs in the population could potentially be microchipped although in the scenarios below we assume only 80% of births comply. Still, combined with further growth in the proportion of the population undertaking microchipping (as in the baseline) by year 10 under this option the proportion of dogs microchipped is nearly 83% of the population. The gradual approach will not place undue strain on microchip implanters and on the microchip database operators, helping prevent delays in processing registrations and issuing registration documents. This policy only generates a burden on people who are purchasing or selling a dog, or keeping a dog they have bred and is a small cost relative to a dog's purchase price and lifetime expenses estimated at £16,000-£31,000 depending on the breed of the dog. Those who are simply keeping existing pets that they have not bred and kept are unaffected. However it will be difficult to enforce. Enforcement officers would have no clear cut way of determining whether any specific dog should be microchipped as they could not have complete certainty of the dog's age.

*Option 2 Regulate that dogs be microchipped on transfer of ownership for 5 years at the end of which time all dogs must be microchipped.*

32. This option is similar to Option 1 in that initially all dog traders are obliged to microchip dogs before sale and then register the microchip number and their details along with those of the person to whom the dog is sold on a database before sale or transfer of ownership. However, after a 5 year period all those keeping un-microchipped dogs in their possession will also be required to have their dogs microchipped. It is again expected that the legal obligation to install the microchip will fall on the seller or donor of the dog while the obligation to ensure their database details are correct will fall on the owner. This regulation will apply for the first 5 years to newly born dogs as well as anyone selling or gifting an older dog. Those who are simply keeping their existing dog are unaffected for the first 5 years but will need to microchip their dogs before the end of the 5 year

period. After 5 years all dogs in the population would be required to be microchipped although we assume that at that point 80% of un-microchipped dogs would join those already microchipped giving an overall figure above 90% (see para 33 below) – and this proportion would be maintained subsequently. This option could put some strain on microchip implanters and on the microchip database operators – with potentially 1.6m microchips in year 5 – but this will be a more gradual process that would put less strain on the system (than making microchipping compulsory from the outset) and there will be 5 years in which to improve registration procedures including increasing on line registration to reduce processing times. This would place a burden on all existing dog owners who would be expected to microchip their dog within 5 years; to microchip long standing family pets could be seen as bureaucratic and a disproportionate response to the level of problems caused by stray dogs. Also, during the first five years (only) it will be difficult to enforce for the same reason as option 1.

*Option 3 Regulate for compulsory microchipping of all dogs from a set date together with requirements to keep records up to date and sanctions for non compliance*

33. This option envisages that all dogs in England must be microchipped by a specific date, as must all those born or imported afterwards, and the information stored on a database along with the owners' details. It would be an offence not to comply and to fail to keep the registered details up to date, although again, we assume 80% of un-microchipped dogs would join those already microchipped in the population giving an overall figure above 90% and this proportion would be maintained subsequently. This option will set a clear date for the public and for enforcers from which compliance must be achieved. This option will ensure the greatest realisation of the benefits listed above as it will lead to a higher rate of microchip uptake than the alternative options.

34. This policy is akin to a 'big bang' in processing and registering the details of up to an estimated 2.6 million dogs and their owners together with issuing the registration certificates over a relatively short time, risking increased costs to database operators and/or system failure leading to a backlog of registrations. This might cause problems for enforcers in deciding whether an owner had failed to register their dogs because of the processing delays or because they had just not complied. A compulsory all dog system will generate a burden on all dog owners whether they be purchasing a new dog or keeping their existing dog.

*Option 4 Require all puppies to be microchipped*

35. This option would require all puppies to be microchipped but not older dogs. Breeders would therefore need to ensure that their puppies are microchipped and registered before they are sold or gifted to a new owner. Anyone breeding a dog and keeping it for themselves will also need to microchip and register that dog and keep the details current too. This is similar to Option 1 but gives the freedom of choice to owners keeping their older dogs and to those selling or gifting older dogs as to whether or not the dog should be microchipped.

36. As discussed in paragraph 29, the onus would be on the existing owner (in this case the breeder) to ensure that their puppies were microchipped with their and the breeder's details and the details of the new owners before sale/gifting. This ensures that the "up-to-date" owner is always traceable and can be re-united with their dog if it is lost or stolen. It also ensures that anyone selling or gifting a dog is not held accountable for the irresponsible actions of the new owner. It would be an offence not to comply and/or for owners to fail to keep the registered details up to date.

37. As with Option 1, the introduction of such a scheme would eventually lead to all dogs being microchipped. This is because as dogs die they will be replaced by new dogs which will need to be microchipped. However, as said above. This option does not place any burdens on existing owners of older dogs to have their dogs microchipped whether they keep their dogs or sell or gift them.

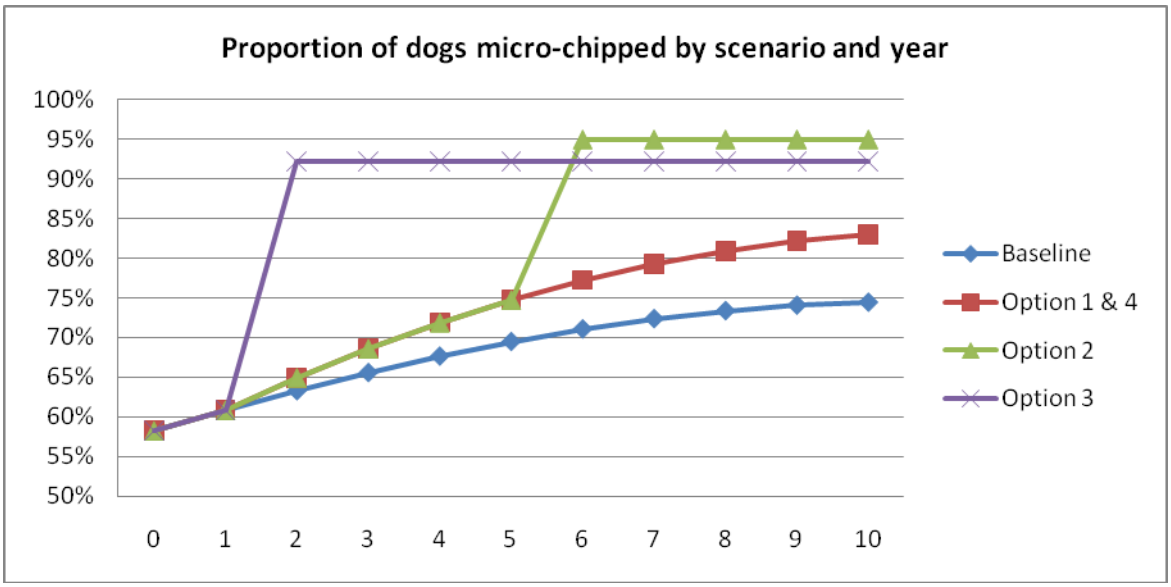
## Costs and benefits of options

### ***Overview***

38. This section estimates the cost and benefits of the options *relative to the baseline*. A key assumption is how the proportion of dogs microchipped changes relative to the baseline (from the current, but growing, level of around 58%) under the different policy options, how much achieving

these additional microchips costs, and how this affects the number of strays (at the moment, roughly a fifth of strays are microchipped). We have used a simple model of the dog population to consider this and the below chart summarises the outlook in the proportion of dogs microchipped. This section provides estimates of the potential costs and benefits of the policy and we propose to develop this model with stakeholders during the consultation. In particular we hope to obtain evidence on: the outlook for the baseline proportion of microchipping; the likely effect of the options on microchipping levels; the relationship between microchipping the population and the number of strays.

Chart: Proportion of all dogs microchipped by scenario and start of year




Note – option 2 rises to a higher figure than option 3 because, in the year microchipping becomes compulsory, we assume 80% of the remaining un-microchipped dogs are microchipped and this is combined with the existing proportion of dogs microchipped which, under option 2, has already risen due to microchipping on transfer of ownership. This assumption will be re-visited over consultation.

*Option 0 - Baseline*

39. This is the Do Nothing option and represents the baseline against which the other policy options are appraised. This option therefore has no associated costs and benefits. However, under this option, the proportion of dogs microchipped still rises, although less quickly than in the other options. See chart above and explanation in the next paragraph on the baseline growth.

*Option 1 - Costs*

40. To calculate the main cost, we need to establish the additional number of dogs that need to be microchipped under this option, and the related costs. There are estimated to be 6.7 million dogs in England and, whilst the dog population is potentially increasing at a similar rate to the English human population (approximately 0.5% per annum), we have assumed for simplicity it remains level. If the average lifespan of a dog is 12 years this implies that there are approximately 560,000 new dogs every year (around 8.5% of the dog population). Under this policy all traded dogs would need to be microchipped however, a significant proportion of these dogs would have been microchipped without this policy intervention. Using estimates from the Petlog and Anibase database, approximately 58% of dogs are currently microchipped. Petlog also estimated that the number of dogs becoming microchipped grew by 4.5% over the last year however, as uptake increases this growth rate is not expected to persist; the Dogs Trust have stated that *'there is likely to be a ceiling reached on voluntary dog microchipping well below 100%'*.[5] We have therefore assumed that the growth rate decreases linearly from 4.5% in year 1 to 0.5% by year 10. Further,

[5] Report on the Cost Impacts of Compulsory Microchipping of Dogs in England, Dogs Trust, 2011

we have assumed in all options that only 80% of un-microchipped dogs comply with the requirement.

41. As this option relates to a change of ownership, we need to establish how many dogs change owner per year. Despite numerous requests to stakeholders we have not been able to ascertain how many older dogs resident in England are traded per year (and would therefore need to be microchipped). It is however, likely that this figure is relatively small so for simplicity we have assumed that it equals zero. (It should be noted that re-homing centres automatically microchip older dogs before re-homing and any older dogs imported from outside the United Kingdom are required to be microchipped under the Pet Passports Scheme).Still, we assume that, under this option, all new dogs born will be subject to the policy, and taking into account some non-compliance, that 80% of the circa 560,000 new dogs will be microchipped. In order to consider the dogs which will be microchipped as a direct result of this policy it's necessary to subtract from this the dogs that would be microchipped in the baseline. The summary numbers and costs are presented in the table below along with the cost of microchipping these dogs assuming an average microchip purchase and registration cost of £5.50 (see paragraphs 13 and 41 for an explanation of this cost). The unit cost of updating owner details is assumed at £10 per microchip (see paragraph 14) and this is assumed to be incurred in the year of installation. Costs are evaluated for breeders and pet shops taking account of the costs of microchips, scanners and training. For the purposes of OIOO we have assumed that the costs of microchipping remain with the breeder or pet shop owner. In practice we would actually expect this cost to be passed on to purchasers of puppies. In a competitive market (comprising large numbers of breeders) we would expect the price of microchipping to purchasers of puppies to be broadly equivalent to the sum of microchip, scanner and training costs.

**Table 1: Number of additional dogs being microchipped (England dog population is an estimated 6.7 million)**

| Year | Dogs microchipped each year under option 1 ('000 dogs) | Dogs microchipped each year in baseline ('000 dogs) | New microchips above baseline ('000 dogs) | Total annual cost (£m) |
|---|---|---|---|---|
| 1 | 612 | 505 | 107 | 0.589 |
| 2 | 600 | 507 | 93 | 0.513 |
| 3 | 586 | 505 | 81 | 0.443 |
| 4 | 570 | 501 | 69 | 0.379 |
| 5 | 553 | 494 | 59 | 0.322 |
| 6 | 534 | 484 | 50 | 0.273 |
| 7 | 514 | 472 | 43 | 0.234 |
| 8 | 493 | 456 | 37 | 0.203 |
| 9 | 471 | 438 | 33 | 0.182 |
| 10 | 447 | 416 | 31 | 0.170 |

42. In addition to these variable costs, up-front costs will be incurred by those carrying out the microchipping in terms of becoming appropriately trained and equipped with a scanner to verify the microchip is working and to check its unique fifteen digit ID number for registration. Vets and welfare organisations, dog wardens, dog training clubs, rescue centres and grooming businesses have ready trained implanters and a number of voluntary sector organisations offer training on microchipping to Local Authorities. Regulating that dogs are microchipped on a transfer of ownership is likely to lead to commercial breeders wishing to microchip the dogs themselves or at the vet's during first vaccination. Registered breeders are those who breed 5 or more litters per year, given that there is very limited information on the number and size of non-registered breeders and the fact they are likely to be small scale, it has been assumed that only registered commercial breeders are interested in microchipping dogs. Unfortunately, despite consulting with industry we were unable to obtain an estimate of how many commercial breeders are already trained to

microchip dogs. We have therefore assumed that 50% of commercial breeders are trained in the baseline and as there are 4,500 registered commercial breeders there will be 2,250 commercial breeders who will require training. Training costs are generally between £90 and £185 depending upon supplier. Those carrying out microchipping will also need to have scanners to read the microchip details. Suitable scanners cost £80-£150 but can cost more for the most advanced models. Even if the margin between the retail price and cost price is only £8 then it is logical for breeders to install their own microchips after only 22 dogs which is approximately 4 dog litters. We have therefore concluded that of the 2,250 commercial breeders who are assumed to be untrained, a relatively high proportion, 70% will attend the training and purchase a scanner just prior to the legislation coming into force. Assuming commercial breeders purchase the cheapest training and scanner available to them the combined cost is £170.The total cost to current commercial breeders of the training and the scanner will be £267,750 (nos. Breeders x cost of purchasing scanner and training i.e. 2,250 x £170).

43. By incurring training costs, and those of purchasing scanners, commercial breeders will be able to keep marginal costs at the lower end of the range. The retail price of purchasing, registering and implanting a microchip is approximately £15-40 yet it only costs £4-7 to purchase and register. In our central cost calculations we have assumed that commercial breeders will make purchases of equipment outlined here which will keep the marginal cost of microchipping to £5.50 per animal.

44. The change in policy will need to be advertised widely to reduce incidences of non-compliance. It would be appropriate for Government to publish articles in appropriate publications, display posters in veterinary surgeries, provide information to all licensed breeders and publicise the changes outside of the United Kingdom. Welfare Organisations already have excellent publicity apparatuses and it would be prudent to use this established infrastructure. Developing a partnership approach with these organisations would be helpful, for example BVA and BSAVA should be able to include information in their newsletters. AHVLA could also include information in their regular newsletter to Official Veterinarians. Government could brief welfare organisations such as Battersea Dogs Home and the Dogs Trust on the changes, and link their website to the information on ours. An electronic poster would be offered to vets, police forces and local authorities and written notification would be sent to particular interest groups including Breed Associations and the Pet Care Trust.

45. A broadly similar publicity exercise was conducted for the publication in 2010 of the 3 Codes of Practice for the welfare of Dogs/Cats/Horses, Ponies, Donkeys and their Hybrids at a cost of £10,000. As this is a broader policy than the Code of Practice we expect the associated publicity cost to be higher so assumed that it is £20,000 in the implementation year of the policy

46. The table below aggregates the total cost of this policy and presents its present value. The total costs (relative to the baseline over 10 years in net present value terms), are just under £8.4m.

**Table 2: Costs of Option 1 (£m)**

| Year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Microchip installations | | 0.589 | 0.513 | 0.443 | 0.379 | 0.322 | 0.273 | 0.234 | 0.203 | 0.182 | 0.170 |
| Updating records | | 1.070 | 0.933 | 0.805 | 0.689 | 0.586 | 0.498 | 0.425 | 0.369 | 0.330 | 0.310 |
| Publicity Cost | 0.020 | | | | | | | | | | |
| Scanner and Training Cost (£) | 0.267 | | | | | | | | | | |
| **Total** | **0.288** | **1.659** | **1.446** | **1.248** | **1.068** | **0.909** | **0.772** | **0.659** | **0.572** | **0.512** | **0.480** |
| | | | | | | | | | | | |
| **Present Value** | **0.288** | **1.603** | **1.350** | **1.125** | **0.931** | **0.765** | **0.628** | **0.518** | **0.434** | **0.376** | **0.340** |

*Option 2 – Costs*

47. Option 2 incurs broadly the same costs as option 1 for the first 5 years except that it necessitates all dog owners to purchase their microchip by the end of the five years. It is assumed that the microchipping of dogs already born when the legislation is imposed will be concentrated in the last year of the 5 year period as those who have not already voluntarily microchipped are assumed to be unwilling to do so unless forced by legislation. Those owners have the incentive to wait until the end of the period as a) they derive benefit from holding onto the cash and not paying for a microchip early and b) the dog may die within the 5 year period. In common with other options, it

has been assumed that 80% of un-microchipped dogs comply, both in the first 5 years with traded (i.e. new-born) dogs, and in year 5 when it becomes compulsory for all.

48. The table below measures extra microchipping as compared to the baseline above. In the first 5 years breeders dogs are being microchipped on change of ownership (mostly by breeders) but in year 5 those with existing un-microchipped dogs in the population will be getting their dogs microchipped, leading to a big jump in the numbers of dogs microchipped in year 5. After year five, microchipping levels will revert to just microchipping dogs on change of ownership. From this point, the level of microchipping activity is often lower in option 2 than in the baseline as some of those who have been forced to microchip in year 5 would have microchipped their dog at a later date anyway so the costs in these years are sometimes lower than the baseline:

**Table 3: Number of additional dogs being microchipped (England dog population is an estimated 6.7 million)**

| Year | Dogs microchipped each year under option 2 (000 dogs) | Dogs microchipped each year in baseline (000 dogs) | New microchips above baseline (000 dogs) | Total Cost (£m) |
|---|---|---|---|---|
| 0 | | | - | - |
| 1 | 612 | 505 | 107 | 0.589 |
| 2 | 600 | 507 | 93 | 0.513 |
| 3 | 586 | 505 | 81 | 0.443 |
| 4 | 570 | 501 | 69 | 0.379 |
| 5 | 1,802 | 494 | 1,308 | 7.192 |
| 6 | 447 | 484 | -38 | -0.206 |
| 7 | 447 | 472 | -25 | -0.137 |
| 8 | 447 | 456 | -10 | -0.052 |
| 9 | 447 | 438 | -8 | 0.045 |
| 10 | 447 | 416 | 31 | 0.170 |

Note: the negative number of dogs microchipped (and costs) from year 6 is relative to the baseline – ie significant numbers of dogs that would have been microchipped in year 6 onwards are brought forward to year 5.

49. The unit cost of purchasing and registering the microchip is £5.50 (paragraph 13) and updating owner details is assumed at £10 per microchip (see paragraph 14) and this is assumed to be incurred in the year of installation. The scanner, publicity and training costs are identical to those described in Option 1 however, due to the need for extra publicity in year 5 to promote full compulsory uptake a further publicity spend of £20,000 is incurred.

50. The baseline number of dogs microchipped is expected to rise over time so a large proportion of the dogs microchipped in or before year 5 (i.e. by 2017) would have been microchipped anyway over the forthcoming years (in the baseline). As such, after year 5, this option (where only a proportion of newborn dogs are microchipped after year 5) is less costly than the baseline which appears as a negative figure below. The table below presents the total cost of this policy option relative to the baseline and its present value. The total costs (relative to the baseline over 10 years in net present value terms) are just under £22m.

**Table 4: Costs of Option 2 (£m)**

| Year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Microchip installation | | 0.589 | 0.513 | 0.443 | 0.379 | 7.192 | -0.206 | -0.137 | -0.052 | 0.045 | 0.170 |
| Updating records | | 1.070 | 0.933 | 0.805 | 0.689 | 13.076 | -0.375 | -0.248 | -0.095 | 0.082 | 0.310 |
| Publicity Cost | 0.020 | | | | | 0.020 | | | | | |
| Scanner and Training Cost | 0.268 | | | | | | | | | | |
| **Total** | **0.288** | **1.659** | **1.446** | **1.248** | **1.068** | **20.288** | **-0.581** | **-0.385** | **-0.148** | **0.127** | **0.480** |
| | | | | | | | | | | | |
| **Present Value** | **0.288** | **1.603** | **1.350** | **1.125** | **0.931** | **17.082** | **-0.473** | **-0.302** | **-0.112** | **0.093** | **0.340** |

*Option 3 – Costs*

51. Option 3 incurs broadly the same costs as option 2 except that as it necessitates all dog owners to purchase their microchip within a year of legislation coming into effect, the costs are all incurred before a specific date, all dog owners will be affected at the same time and database providers incur some additional costs. Given the time it takes to consult and pass legislation as well as the necessity to publicise the policy ahead of implementation, it cannot be implemented immediately, therefore early 2013 is assumed as the date by which all dog owners must have their dog microchipped if it is to be required within 1 year of legislating (or early 2014 if two years.) As the number of dogs microchipped is expected to rise over time in the baseline a large proportion of the dogs microchipped by 2013 would have been microchipped anyway over the forthcoming years. As costs are presented relative to the baseline, this means in some years after year 1, the numbers of dogs microchipped (and costs) are therefore less than the baseline, and appear as negative.

52. Introducing this option over one or two years would create a significant burden for database operators in having to process up to 2.6 million registrations in a short period of time. In addition there is a risk that many people will leave microchipping until the last minute causing great difficulties for databases handling unprecedented volumes of microchips thus causing delays in issuing registration certificates. Petlog, the largest of the 4 databases estimate processing the extra registrations would incur approximately £70,000 in extra staff costs, over and above the typical £5.50 per-microchip costs, assuming even distribution of registration over the lead in period. Assuming that these costs are replicated in other databases the total *additional* staff costs are estimated at £140,000. This is a tentative estimate as uptake is likely to be unevenly distributed across the time period; the cost of hiring temporary staff for a short period of time plus agency fees and training could be greater than hiring extra staff for a year and new staff would have less time to get up to speed and therefore work less efficiently than staff in post over a longer period.

53. The extent of a last minute rush to meet the deadline to have all dogs microchipped and additional staff costs cannot be predicted with any certainty. The only possible indicator is in Northern Ireland. Legislation was laid this April that in effect requires all licensed dogs (125,000 in 2010) to be microchipped by April 2013. Assuming that NI has the same percentage of un-microchipped dogs as England, some 55,000 dogs would need to be microchipped. The Dogs Trust are mounting a high profile campaign with local authorities to encourage microchipping before then and have reported over 2000 dogs microchipped in June 2011. Assuming the June rate persists throughout the period until April 2013, this indicates that around 7,000 dogs or 12.7% that may have to be dealt with at the last minute representing approximately 356,000 dogs in England. However England is a much larger country and it is possible the same level of publicising and promoting microchipping may not be possible, leading to a larger last minute rush and even greater publicity effort and cost.

54. The table below presents the total cost of this policy option and its present value. The total costs (relative to the baseline over 10 years in net present value terms) are just under over £27m.

**Table 5: Costs of Option 3 (£m)**

| Year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Microchip installation | | 11.227 | -0.329 | -0.322 | -0.300 | -0.261 | -0.206 | -0.137 | -0.052 | 0.045 | 0.170 |
| Updating records | | 20.413 | -0.599 | -0.586 | -0.545 | -0.474 | -0.375 | -0.248 | -0.095 | 0.082 | 0.309 |
| Database staff costs | 0.140 | | | | | | | | | | |
| Publicity Cost | 0.020 | | | | | | | | | | |
| Scanner and Training Cost | 0.268 | | | | | | | | | | |
| **Total** | **0.428** | **31.641** | **-0.928** | **-0.909** | **-0.845** | **-0.715** | **-0.582** | **-0.385** | **-0.148** | **0.127** | **0.480** |
| | | | | | | | | | | | |
| **Present Value** | **0.288** | **30.571** | **-0.866** | **-0.820** | **-0.736** | **-0.602** | **-0.473** | **-0.303** | **-0.112** | **0.093** | **0.340** |

*Option 4 – Costs*

55. We consider that the costs for Option 4 will be the same as those for Option 1 (see paragraphs 40-46). The only difference between this option and option 1 is that owners of older dogs resident in England that wish to sell or gift their dogs will have the freedom of choice as to whether or not to chip their dogs as well as those keeping older dogs that have the same freedom of choice under option 1. As stated in paragraph 41 the cost is estimated to be very small so for simplicity we have assumed that it equals zero for the purposes of costing this option. (It should be noted that re-homing centres automatically microchip older dogs before re-homing and any older dogs imported from outside the United Kingdom are required to be microchipped under the Pet Passports Scheme).

56. The table below presents the total cost of this policy option and its present value. The total costs (relative to the baseline over 10 years in net present value terms) are just under over £27m.

**Unquantified Costs**

*Enforcement costs and benefits*

57. All the options necessitate the imposition of legislation requiring microchipping therefore there will be associated enforcement costs. It is assumed in the costings that there is no additional effort on enforcement and that enforcement relies on existing efforts to ensure responsible dog ownership. However, under option 2 and 3, the costs of enforcing other policies around responsible dog ownership could fall, and we will explore both these areas over the consultation. Option 2 and 3 would lead to more legislative certainty since, under this option, dogs found without a microchip would be in breach of the law. Options 1 and 4 will be harder to enforce as without further investigation it will be unclear whether a dog found without a microchip is legally obliged to have one or otherwise. Insofar as legislative clarity incentivises compliance, Options 1, 2 and 4 (in the first 5 years) are likely to have lower compliance rates than Option 3 and are therefore likely to have higher overall enforcement costs.

58. However, it is recognised that whilst it will be necessary to have sanctions for those failing to microchip puppies and those failing to keep their records up to date, police and Local Authority resources are stretched so it is envisaged that enforcement may well be largely passive, particularly with options 1, 2 and 4 where compliance checks are more problematic because of difficulties associated with determining the age of dogs to see if they should be microchipped. We will need to engage with the Crown Prosecution Service (CPS) on the likely effect on caseload. Overall, un-microchipped dogs are most likely to come to the attention to the authorities because of irresponsible owners or breeders, for example for unlicensed breeding, cruelty, the dog being dangerously out of control or otherwise causing a nuisance. Microchipping would likely be added to the enforcement requirements, including as part of any penalty imposed through prosecution and therefore not add any significant case loads to the CPS and Courts so owners considered less likely to comply with microchipping will be caught by other legislation. For example an owner found under the Dangerous Dogs Act to have a banned breed or to have a dog dangerously out of control will be easier to track by enforcers as a result of compulsory microchipping with owners brought to account for any attacks or nuisance, and owners of any un-microchipped dangerous dogs can be made to microchip their dogs as part of the sanctions imposed by a Court thus making

policing of dangerous dogs more effective. For cases involving solely failure to microchip, (which is a clear case of: is the dog microchipped, yes or no?) it is still considered that the impact on the courts will be minimal. We are considering that such cases be dealt with first by issuing an improvement notice (under section 10 of the Animal Welfare Act 2006) to microchip within a specified time (say 1 month) or even just a warning. With over 84% of respondents to the dangerous dogs consultation in 2010 supporting compulsory microchipping, and the availability of free microchipping from such as the Dogs Trust for those on benefits, it is not thought likely that many cases will ever end up in court. New offences will need to be introduced for not microchipping on change of ownership and not keeping registration details up to date but again enforcement is likely to come about as part of a wider enforcement action where dogs have come to the attention of the authorities through dangerous or nuisance dogs, poor breeding practices etc.. It has therefore been assumed that there are no quantifiable enforcement costs as enforcement is likely to be limited.

*Defra Approved/ISO compliant databases*

59. Until we establish from consultation whether to introduce Defra approved database standards or insist on databases being ISO accredited it is impossible to monetise the costs incurred in this area (see paragraph 27).

*Time cost associated with updating details*

60. For dog owners who need to update their database entry, for example as a result of moving house, there will be a small time cost incurred. It is difficult to quantify this cost as there is no evidence on the number of average updates recorded during the lifetime of a dog.

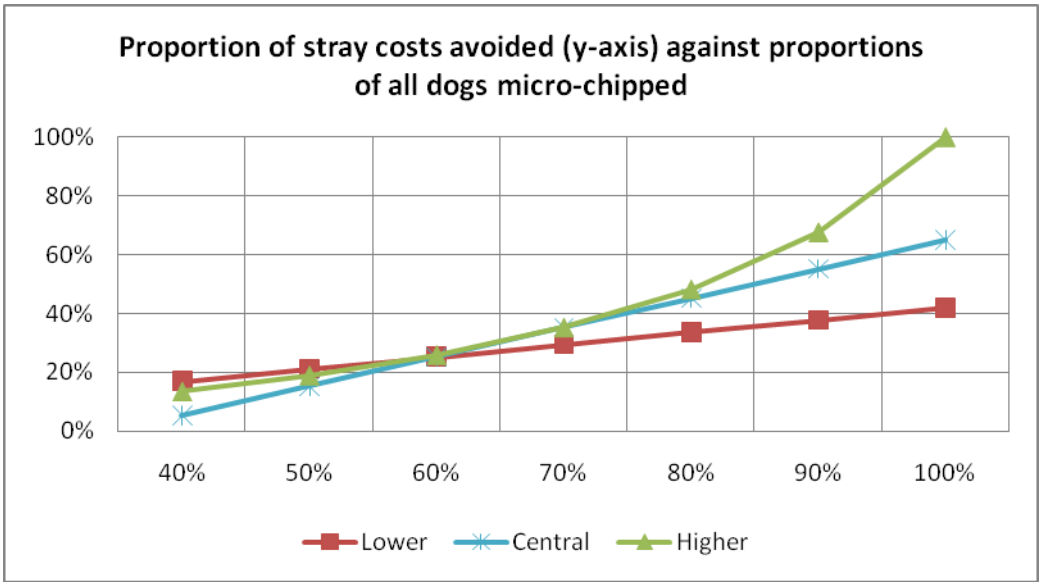
*Dog imports*

61. While a Defra approval scheme/ISO accreditation would confirm the standard of databases operating in England there remains an issue as to whether to require dogs registered on databases outside England that do not meet the same standards to be re-registered on approved databases in England, should their owner/keeper become permanently settled here. There are over 40,000 dogs a year imported from the Republic of Ireland alone. At present there is no requirement for dogs travelling from the Republic of Ireland to the United Kingdom to be microchipped. There is no information on the numbers of dogs that are microchipped in Ireland so it is not possible to assess any likely cost to business in the United Kingdom arising from having to microchip dogs before sale or taking ownership. However the United Kingdom will be harmonising its domestic rules on the movement of pets between EU member states and third countries with EU legislation (requiring all dogs travelling between member states to be microchipped) in January 2012 - which will be before any changes to microchipping can be introduced here -. Those rules help manage the risk of diseases transmissible to humans such as rabies. Any requirement to introduce compulsory microchipping here would not impact on people travelling with dogs from Ireland because there will already be a requirement for such dogs to be microchipped for disease purposes. There would therefore be no costs of microchipping accruing to industry here but owners would have to update their records on the appropriate microchipping database or re-register on a UK database. This cost to the public is already covered in the costs of updating records

*Benefits*

62. Local Authorities and welfare organisations incur significant costs caring for and re-homing stray and unwanted dogs. If a greater proportion of dogs were microchipped and the records stored on the microchip were updated as appropriate dog owners could be more easily identified and the re-homing and kennelling costs will fall. The costs and number of strays avoided are key to the overall benefits of each option. The chart at paragraph 38 shows how the proportion of dogs microchipped might relate to the proportion of (re-homed) stray dogs, and the associated costs, that could be avoided. All options pass through the current level of 58% of dogs microchipped, and microchips leading to the return of 25% of costly (ie otherwise re-homed) strays.

**Chart – Proportion of stray dog expense avoided (y-axis) against proportion of all dogs microchipped**




63. The central assumption used is that the proportion of re-homed strays avoided increases linearly with the proportion of all dogs microchipped but that there is always a fixed difference between the two rates. That is, at the current population level of 58% of dogs microchipped, 24% of (otherwise re-homed) strays are identified – and this 34 percentage point difference is maintained so that, at 90% of the dog population microchipped, 56% of strays are identified.

64. The higher and lower assumptions are explained here but only considered in the below section on sensitivity analysis. The higher assumption is calculated on the basis that, currently, of the 2.6 million dogs microchipped, 52,000 need to be re-homed and incur costs, a proportion of just under 1.9%. The higher assumption assumes that that proportion remains constant as the number of dogs not microchipped falls which reduces the costs of strays. The lower assumption is that the proportion of (re-homed) strays avoided only rises at the same *rate* as the overall level. So, in the lower assumption, a 90% dog population is around a third higher than currently, and so the strays microchipped would also rise by a third, from 24% to around 38%.

65. There is evidence from abroad which suggests that countries with compulsory/increased microchipping have higher levels of owner identification of strays. In Sweden where microchipping is compulsory, over 90% of stray dogs are reunited with their owners within 24 hours of being collected by the authorities.[6] Furthermore, a US research study by Lord et al (2009) found that dogs with microchips were likely to be relocated with their owners, they concluded that 'the high rate for return of microchipped dogs supported microchipping as a valuable permanent pet identification modality'.[7]

[6] Tasker L (2008), Stray Animal Control Practices (Europe), WSPA/RSPCA International

[7] Lord L K, Ingwersen W, Gray J L, Wintz D J, (2009), Characterization of animals with microchips entering animal shelters, J Am Vet Med Assoc, July 2009, 235(2), pp. 160-167

66. Last year it is estimated there were a total of around 106,000 strays in England found by/handed in to Local Authorities. Approximately 48,000 were reunited with their owner which may occur through identification from the collar, owner enquiries and in some cases – around 35% of those returned, 16,800, were identified from the microchip. The cost of caring for these reunited dogs is claimed back by the Local Authority from the owner of the dog. Of the remaining 58,000 dogs, 6,000 are put to sleep at a cost of approximately £45 each and 52,000 dogs are housed temporarily for up to 7 days before being passed to welfare organisations to care for and re-home.[8,9] The Dogs Trust estimate that total cost to local authorities of both putting dogs to sleep and temporarily housing them is £2.5 million per annum. On top of the 52,000 dogs passed to re-homing centres by local authorities there are further dogs handed in directly to welfare organisations such as the Battersea Dogs Home – however, we have assumed that the number of these dogs would not be affected by microchipping as they rarely stray.

67. The average time taken before a dog can be re-homed is 48 days[10] with an average cost of £22 per day[11] and costing over £1000 per dog. So based on a total number of dogs requiring re-homing of 52,000 the total cost per year of caring for these dogs by welfare organisations equals approximately £55 million. When added to the £2.5 million cost of Local Authorities kennelling and euthanizing dogs that cannot be traced to owners, this generates a total cost to Local Authorities and welfare organisations of £57.5 million per annum. Microchips meant that some 16,800 dogs avoided being re-homed and represented around a quarter of all dogs that would have been re-homed (ie without microchips, the total re-homed would have been 52,000 plus 16,800 = 68,800) according to figures from the Dogs Trust. In each option, we therefore consider how this proportion might alter and what effect this might have on the number of strays and their costs to Local Authorities and Welfare Organisations. To calculate the costs avoided by Local Authorities and Welfare Organisations we calculate, based on the costs of re-homing plus Local Authority costs each un-returned stray costs £1100.

68. There is evidence that the number of stray dogs is rising. A Dogs Trust Survey carried out in 2011 showed that for the business year 2010-2011 there was approximately 106,000 stray dogs in England which appears to have risen sharply since 2007-2008 when there were about 81,480 such dogs reported (an increase of nearly 30%) but this could be a result of past under-reporting by Local Authorities. There is the potential for the number to rise, especially if the weakness in the economy persists which would lead to greater costs to re-homing centres and more healthy dogs destroyed because re-homing centres cannot cope with the increased numbers. Given the uncertainties over the levels of reporting over the last few years, and the assumption of a level dog population, it is assumed for the purposes of assessing costs and benefits that that the number of stray dogs are constant.

69. In addition to the financial costs of avoided strays, there is also the potential for a reduction in the approximately 6,000 healthy dogs that have to be euthanised because homes cannot be found for them. Reducing the numbers of lost dogs that cannot be re-united with their owners through the traceability offered by microchipping will leave more space and time for re-homing centres to keep and re-home those dogs that are currently being destroyed and could therefore help prevent the numbers of dogs being destroyed from rising and save the lives of many of the dogs currently being destroyed (see paragraph 66).

*Option 1 – Benefits*

70. This policy option would lead to a larger uptake of microchipping relative to the baseline which will in turn lead to more dogs having identifiable owners. It is estimated by the Dogs Trust that in 2010 of all the strays handed to Local Authorities 17.8% were returned through microchipping.[12] Under this option one would not only expect the number of dogs microchipped to increase but also given the regulatory obligation to update your details the number of dogs identifiable from their microchip should also rise.

[8] Dogs Trust, September 2010

[9] Report on the Cost Impacts of Compulsory Microchipping of Dogs in England, Dogs Trust, 2011

[10] RSPCA (2009), Five Years of Measuring Animal Welfare in the UK 2005-2009

[11] Report on the Cost Impacts of Compulsory Microchipping of Dogs in England, Dogs Trust, 2011

[12] Report on the Cost Impacts of Compulsory Microchipping of Dogs in England, Dogs Trust, 2011

71. The table below summarises the proportion of strays which are microchipped. The central assumption (see sensitivity below) is that the proportion of strays which are microchipped remains around 35 percentage points below that in the overall population (ie at 90% in the population, 55% of otherwise un-homed strays would be microchipped). The assumption is also made that the proportion of stray dogs identifiable by other means e.g. owner reclaim or collar as well as the number of stray dogs found remain constant at 2010 levels.

**Table 6: Benefit from additional stray dogs being returned to owner – Option 1**

| Year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| % strays microchipped: baseline | 24% | 27% | 30% | 32% | 34% | 36% | 37% | 39% | 40% | 40% | 41% |
| % strays microchipped*: option 1 | 24% | 27% | 31% | 35% | 38% | 41% | 43% | 45% | 47% | 48% | 49% |
| | | | | | | | | | | | |
| Costs of strays saved through microchips (£m) | 18.5 | 20.5 | 23.6 | 26.4 | 28.9 | 31.1 | 33.0 | 34.5 | 35.8 | 36.7 | 37.4 |
| Costs Saved vs.Baseline (£m) | - | - | 1.2 | 2.3 | 3.2 | 4.0 | 4.6 | 5.2 | 5.7 | 6.1 | 6.5 |

Note – * refers to proportion of dogs avoiding re-homing and related costs due to microchips

*Option 2 – Benefits*

72. The benefits for this option are similar to options 1 and 4until microchipping becomes compulsory in year 5, after which the costs for Local authority centres and re-homing centres fall significantly. A clear enforcement point is therefore reached. Those dogs in the baseline that would be voluntarily microchipped after year 5, we now assume are now microchipped in year 5. This means that the benefits (and costs) of these microchips are brought forward and, relative to the baseline, the benefits (and costs) after year 5 are actually lower than the baseline (ie negative).

73. The table below summarises the calculations undertaken to generate the rise in identifiable stray dogs. It assumes that the proportion of strays which are microchipped and identifiable rises in the same proportion as the increase in microchipping as a result of the policy over the five year period. The assumption is also made that the numbers of stray dogs identifiable by other means e.g. owner reclaim or collar as well as the number of stray dogs found remain constant at 2010 levels.

**Table 7: Benefit from additional stray dogs being returned to owner – Option 2**

| Year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| % strays microchipped: baseline | 24% | 27% | 30% | 32% | 34% | 36% | 37% | 39% | 40% | 40% | 41% |
| % strays microchipped*: option 2 | 24% | 27% | 31% | 35% | 38% | 41% | 61% | 61% | 61% | 61% | 61% |
| | | | | | | | | | | | |
| Costs of strays saved through microchips (£m) | 18.5 | 20.5 | 23.6 | 26.4 | 28.9 | 31.1 | 46.5 | 46.5 | 46.5 | 46.5 | 46.5 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Costs Saved vs.Baseline (£m) | - | - | 1.2 | 2.3 | 3.2 | 4.0 | 18.1 | 17.1 | 16.4 | 15.8 | 15.6 |

Note – * refers to proportion of dogs avoiding re-homing and related costs due to microchips

*Option 3 – Benefits*

74. With immediate compulsory microchipping of all dogs we assume that 80% of those dogs not currently microchipped would comply with the requirement and the same proportion of those born in future years would comply. A greater number of dogs will be microchipped sooner than otherwise would have been and associated benefits of the policy will therefore be greater than in Options 1 and 4. [In option 3 we need to take account of the dogs which would have been microchipped in future years in the baseline so the benefit falls over time]. The table below presents the benefits for Option 3.

**Table 8: Benefit from additional stray dogs being returned to owner – Option 3**

| Year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| % strays microchipped: baseline | 24% | 27% | 30% | 32% | 34% | 36% | 37% | 39% | 40% | 40% | 41% |
| % strays microchipped*: option 3 | 24% | 27% | 58% | 58% | 58% | 58% | 58% | 58% | 58% | 58% | 58% |
| | | | | | | | | | | | |
| Costs of strays saved through microchips (£m) | 18.5 | 20.5 | 44.3 | 44.3 | 44.3 | 44.3 | 44.3 | 44.3 | 44.3 | 44.3 | 44.3 |
| Costs Saved vs.Baseline (£m) | - | - | 21.9 | 20.2 | 18.6 | 17.2 | 16.0 | 15.0 | 14.3 | 13.7 | 13.5 |

Note – * refers to proportion of dogs avoiding re-homing and related costs due to microchips

*Option 4 - Benefits*

75. The benefits of Option 4 will be the same as Option 1. However, existing owners of older dogs will not need to get them microchipped if sold or gifted and will therefore not incur additional costs as a result of the option.

**Unquantified Benefits**

*Wider social benefits*

76. Responsible ownership and its associated effects provide an intrinsic benefit to those in society who care about dogs. If dog care improves then these people will benefit and they would be willing to pay a monetary amount to increase responsible ownership insofar as it leads to an improvement in dog welfare and benefit wider society. Increasing uptake of microchipping would improve general dog welfare by helping reduce strays, limit improper breeding (and so improving the welfare of the general dog population over time) and may help reduce the numbers of dog attacks over time. Different sections of society would be willing to pay an amount to induce these changes therefore they should be considered as a further additional benefit above the direct benefits resulting from reduced kennelling costs, health care costs etc. Without conducting an expensive and complex contingent valuation study to elicit society's willingness to pay to improve animal welfare it would be very difficult to robustly estimate the likely scale of these benefits. Still, we will investigate whether similar studies can provide suitable evidence during consultation.

*Breeding*

77. It is believed that many dogs, particularly puppies, become ill as a result of irresponsible and indiscriminate breeding. It is understood from evidence presented by the Blue Cross that puppies are often off loaded onto owners (either sold or given away) with health concerns including worms, fleas, malnutrition and various serious diseases and dogs may be poorly socialised by breeders or not inoculated. All this causes considerable treatment and other costs for charities and owners and some dogs may need to be put down. Treatment, including medication and consulting costs can be very expensive, for example each case of the Parvo disease is estimated to cost over £300 per day. Poor breeding practices may also lead to genetic defects being perpetuated or appearing which may need considerable treatment and be very expensive. Despite some initiatives in place to monitor poor practices, such as the Kennel Club's Assured Breeder's Scheme and the BVA canine health schemes, further work needs to be done.

78. Introducing compulsory microchipping for dogs and including the breeder in any regime would not solve all the health problems that may result from bad breeding, but the extra traceability would probably act as a disincentive to the casual or indiscriminate breeder who does not bother to take the necessary care to ensure that both the bitch and pups are healthy and well socialized. Local Authorities enforce the Breeding and Sales of Dogs Act and licence commercial breeders. So where illnesses are tracked back to breeders raising litters in poor environments, then immediate action can be taken. As a result, insofar as the numbers of poorly bred dogs fall there will be a gradual reduction in the numbers of unhealthy dogs in the general population which may save welfare charities and owners costs. Over the long term traceability could also be a benefit to breeders in that as poor breeders are identified and dealt with, the good breeders may attract more business.

79. It is very difficult to prove a specific problem is down to poor breeding and therefore impossible to estimate what the likely size of this benefit will be. Further improvements in dog health will stem from the work being carried out by the Advisory Council on the Welfare Issues of Dog Breeding which is working with Defra Ministers and officials to develop a scheme to raise breeding standards. Traceability will help whatever form the recommendations may take (i.e. legislation or codes of practice). Their work is of national interest since the public interest generated by the exposé of breeding standards that has led to the BBC no longer televising the Cruft's Dog Show.

80. The greater uptake of microchipping there is, the easier prevention of improper breeding will become, therefore Option 3 is likely to have the greatest impact on reducing irresponsible and indiscriminate breeding in the shorter term.

*Reducing Dog attacks*

81. A major consequence of the recent increase in irresponsible ownership is an increase in the number of dog attacks. The Metropolitan Police report that the number of dangerous dogs they have processed through the courts has risen from 35 in 2002/03 to 719 in 2008/09. Hospital Episode Statistics show that the number of hospital admissions as a direct result of dog [attacks-check] has increased from 2,915 in 1997-98 to 6,118 in 2010-11.[13]

82. The economic costs resulting from dog attacks mainly consist of: treatment costs incurred by the health service, lost productivity from those who spend periods out of work as a result of dog attacks, the human costs of attacks including grief and pain as well as the costs of prosecuting those who breach the Dangerous Dogs Act. Rough estimates of the aggregate annual cost of dog attacks total as much as £90m.

83. Insofar as any compulsory microchipping increases responsible ownership it follows that there could be a consequential reduction in the number of dog attacks. There is however, no robust evidence which suggests how large any reduction in dog attacks would arise from implementing compulsory microchipping so the potential benefit is not quantified here. Nevertheless the potential impact could be large, assuming only a 1% fall in dog attacks could lead to £0.9m in benefits per annum.

**Enforcement**

84. Options 2 and 3 require all dogs to be microchipped by a certain date whereas Options 1 and 4 entail a gradual progressive approach towards full uptake. While it does lead to a greater burden placed on dog owners, the 'big bang' approach proposed in Option 2 and 3 has some benefits aside from the greater number of stray dogs returned to owners. An approach which encompasses all dogs from a certain date is much easier to enforce as there is clarity regarding whether a dog should be chipped or not. This is not the case under Options 1 and 4. Here it would be difficult to ascertain whether the owner is required to have the dog chipped. This is because it is difficult to tell the age of a dog and so for enforcers to prove that it was of an age that it should have been microchipped. As a result, unscrupulous owners could avoid the legal requirement to microchip their dogs by claiming that their dogs were born before the requirement to microchip on change of ownership came into effect. This would add to the number of dogs legitimately un-chipped in the general dog population. Therefore not only does Option 3 lead to higher benefits from greater uptake it also is able to capture these benefits as enforcement is easier which in turn gives owners a greater incentive to comply with the legislation thus motivating more responsible ownership. Once the 5 year lead in period is over, Option 2 will generate a similar level of benefits to Option 3. The table below outlines the difference between Options 1 3 and 4:

**Table 9: Comparison of benefits across the various options**

| **Options 1 and 4 – Microchipping on change of ownership** | **Option 3 – Compulsory microchipping of all dogs** |
|---|---|
| Greater traceability of stray dogs | Greater traceability of stray dogs |
| Increase in accountability of irresponsible owners | Increase in accountability of irresponsible owners |
| Improves chance of prosecuting irresponsible and indiscriminate breeders | Improves chance of prosecuting irresponsible and indiscriminate breeders |
| | Legislative certainty – dogs without a microchip are in breach of the law |
| | Irresponsible owners without a microchip can be |

[13] http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=1131

| | |
|---|---|
| | charged |
| | Easier for police to enforce as less uncertainty about whether a dog should be microchipped |

**Stakeholder interaction**

85. The Defra consultation on dangerous dogs in 2010 did not seek opinion on the method of introducing compulsory microchipping though key stakeholders have been extensively consulted since. Most such as the Police, RSPCA, Blue Cross, Dogs Trust and Kennel Club expressed a wish for compulsory microchipping of all dogs by a set date (i.e. option 3). The British Veterinary Association accepts a fully phased approach as an acceptable compromise and the Advisory Council for the Welfare of Breeding Dogs support a fully phased approach. Battersea Cats and Dogs Home initially wanted compulsory microchipping of all dogs by a set date, but have recently advocated a more phased approach and would support option 2 (phased approach for 5 years after which all dogs must be microchipped).

86. The Dogs Trust has made an offer to meet the cost of all microchips if compulsory microchipping is introduced within a year of legislation. This does not include the registration or implantation costs. If option 3 were to be adopted and this offer taken up the costs to dog owners would be reduced although it is unknown by how much as uptake of the offer will be dependent on the publicity carried out by the Dogs Trust.

**Sensitivity Testing**

87. Given the uncertainty of the data and assumptions used, especially those concerning the number of microchipped dogs and the cost of microchips we have undertaken some sensitivity analysis. For many of our assumptions we have considered upper and lower estimates and we present the results here. Scenarios have been calculated which reflect these ranges both for the benefits and the costs. The tables below outline the assumptions used in the sensitivity testing and the results when compared with the central estimates described above for all of the options considered.

88. The scenario's selected are based on using 'best' and 'worst' case assumptions. The high NPV scenario uses the assumptions which collectively generate the highest NPV whereas the low NPV scenario uses assumptions which generate the lowest NPV possible when grouped together. Under these assumptions, each of these scenarios delivers a positive or zero net benefit.

**Table 10: Assumptions for sensitivity testing**

| Assumption | Central NPV | High NPV | Low NPV |
|---|---|---|---|
| Proportion of dogs currently microchipped | 58% | 52% | 64% |
| Microchip cost price (£ each) | 5.50 | 4.00 | 7.00 |
| Microchipping Training (£ per person) | 90 | 90 | 185 |
| Scanner Cost (£ each) | 80 | 80 | 150 |
| Cost of microchip update (£) | 10 | 6 | 17 |
| Baseline microchipping growth rate in Year 10 | 0.5% | -0.5% | 1.5% |
| Proportion change in identifiable stray dogs (see para 57-58) | Strays microchipped is a fixed proportion below population | Fixed proportion of un-microchipped dogs | Strays microchipped growth reflects microchipped population growth |

**Table 11: Results of sensitivity testing (£m NPV terms)**

| **Option 1** | Central | High | Low |
|---|---|---|---|
| Costs | 8 | 12 | 4 |
| Benefits | 25 | 75 | 5 |
| Net | 17 | 62 | 1 |
| **Option 2** | | | |
| Costs | 22 | 29 | 14 |
| Benefits | 59 | 160 | 14 |
| Net | 38 | 132 | 0 |
| **Option 3** | | | |
| Costs | 27 | 36 | 19 |
| Benefits | 111 | 284 | 30 |
| Net | 84 | 249 | 11 |
| **Option 4** (as Option 1) | | | |
| Costs | 8 | 12 | 4 |
| Benefits | 25 | 75 | 5 |
| Net | 17 | 62 | 1 |

89. Intuitively, this is driven by the costs of microchipping and the costs avoided from un-homed strays. Even in the low NPV scenario, the cost is a one-off figure of under £30 per dog, and the costs of an un-homed stray which are roughly £1000 per year in each scenario. So, taking a ten year period, every hundred microchipped dogs must avoid 3 or more (un-homed) strays for the lowest NPV to break even. Looking at it another way, in steady state there are roughly 500,000 dogs born per year. Microchipping all of these (if possible) would cost up to £15m (i.e. even ignoring any baseline microchipping). However, un-homed strays cost £60m per year – so even if the costs of those strays were reduced by a third, the policy is still worthwhile.

90. There are three key areas to focus on further evidencing during consultation. First, we need to confirm the likely costs of microchipping. Second, a key assumption remains the relationship between microchips in the dog population, the contribution of the policy options to this, and the proportion of un-homed strays that are avoided and we propose to examine the experience in other countries to look at this. Third, we propose to explore the relationship between enforcement effort and compliance. Indeed, we recognise the need to build varying estimates of compliance into the above sensitivity analysis.

**Proportionality**

91. The major costs and benefits of this policy, namely the cost of implanting and updating the microchips and the resulting benefits of reducing the kennelling costs of stray dogs have been monetised. As noted above a range of other associated impacts have not been quantified. This consultation will aim to provide information to help quantify some of the unquantified impacts identified in this impact assessment such as enforcement cost and cost of upgrading databases to comply with specific standards. As for others benefits such as those arising from reducing dog attacks and improving breeding standards the information required for robust quantification is unavailable and will be prohibitively costly to obtain. Nevertheless, we would hope that the consultation exercise would reveal sufficient evidence to help estimate the likely willingness to pay of the public to pay for these benefits. Given the data constraints in this field and the relative magnitude of the various impacts we believe that this represents a proportionate approach to the quantification of the impacts of this policy measure.

**One In One Out and Moratorium on Micro Business Regulation**

92. The measures outlined in this IA will derive from domestic regulation and are therefore in scope of OIOO. For all three options the introduction of new Regulation imposes costs on businesses. The businesses affected which include dog breeders and small pet shops are typically micro businesses (less than 10 FTE). For the purposes of OIOO we have assumed that the costs of microchipping remain with the breeder or pet shop owner but in practice we would actually expect this cost to be passed on to purchasers of puppies. However in all options the costs to business are less than the savings to civil society organisations (animal welfare charities) which arise from being able to return dogs to their owners more quickly. The OIOO guidance is unclear on how to classify and treat these benefits as in some respects they may be thought of as indirect. We have therefore not offset the business costs by these civil society benefits and have classified this IA as an IN at this stage. We will clarify these points before the final IA is drafted. Defra will be seeking a waiver to the moratorium on micro-business regulation in order to take this policy forward and implement the preferred option determined following completion of consultation.

**Risks and assumptions**

93. There is unlikely to be significant pro-active enforcement of the policy, particularly with options 1, 2 and 4 therefore there are concerns that uptake may not be comprehensive. The difficulties with enforcing Options 1, 2 and 4 may reduce incentives for owners to comply with the legislation; uptake in this scenario may be lower than in Option 3. The policy aims to reduce instances of irresponsible ownership; those irresponsible owners are less likely to comply with the microchipping legislation but are likely to come to attention under different legislation such as the Dangerous Dogs Act or Animal Welfare Act and microchipping may be enforced through that legislation. There is a risk that the full potential benefits outlined here may not materialise if uptake amongst those targeted by the policy is lower than we assume. But that risk will be offset at least in part by irresponsible owners coming to light through breaching other regulations, such as the Dangerous Dogs Act, breeding regulations etc for which the requirement to microchip can be imposed as part of the sanctions under those rules.

94. Concerns regarding uptake are partially mitigated by evidence from other countries. Compulsory microchipping schemes have been implemented worldwide in countries including: France, Denmark, Spain, Portugal and Japan. In European countries with compulsory microchipping legislation there are high levels of compliance with 80% to 90% of dogs estimated to be microchipped.[14] With the exception of dogs in inner city areas it is therefore expected that compliance with this regulation is likely to be high.

95. Dogs from Overseas and third countries are referred to in paragraph 56. Within the United Kingdom, dogs in Northern Ireland should all be microchipped by April 2013 but there is currently no requirement for dogs in Scotland and Wales to be microchipped. Wales are re-consulting over plans to introduce changes to their Breeding Dogs legislation requiring breeders to microchip all puppies before sale but there are no plans to microchip in Scotland. Any dogs not already microchipped and registered and entering England to live permanently will need to be microchipped and registered if not already, or, if microchipped, to amend their records on the database. There is no information on how many dogs might be affected like this but it is thought likely to be a very low number and therefore only a small additional cost to the public.

96. It is estimated that there are currently 3.9 million dogs with microchips and microchip databases are used to dealing with a significant level of demand particularly around Christmas time. Nevertheless Options 2 and 3 which specify a particular date for compulsory microchipping, are likely to cause greater demand (concentrated in one specific period) than microchipping companies are used to handling. This may lead to long delays in processing and registering the details of an estimated two million dogs and their owners together with delays in issuing registration certificates. This is discussed at paragraph 49. The risk of delays would be lessened if Options 1 OR 4 is

[14] European Pet Network/The Kennel Club estimates

chosen rather than Options 2 or 3 as demand for microchipping under Options 1 or 4 are likely to be phased over a longer period.

97. It has been assumed in the baseline that the growth rate in microchips declines linearly to 0.5% over the 10 year period. While growth rates have been consistently rising over the last few years, it is not expected that this trend will persist as there is a natural limit to voluntary microchipping. A 10 year appraisal period has been selected as given the growth in voluntary microchipping after 10 years a significant proportion of the dogs will have been microchipped anyway regardless of whether compulsory microchipping is introduced. The other assumptions used in the analysis are highlighted in the text above.

## Administrative burden and policy savings calculations

## Wider impacts

***Justice System***

98. As explained in paragraph 58, new sanctions will need to be created to make it unlawful to fail to have a dog microchipped prior to transfer of ownership and to fail to record the details on an approved database. It will also need to be unlawful not to update records held on a database when recorded details change (e.g. address and telephone number). Any sanctions to be imposed, particularly under Options 1, 2 or 4 would likely not to be stand-alone but as part of a wider enforcement action e.g. for cruelty, allowing a dog to be dangerously out of control etc. As such the requirement to microchip may be enforced alongside or through separate dangerous dogs or anti-social behaviour legislation so there should be no significant extra burden on the justice system. How these breaches of the law are to be handled is under consideration. One possibility is that in the first instance breaches might be dealt with by way of Notices requiring the breach to be corrected within a set period (e.g. 30 days) after which non-compliance will be dealt with by other sanctions. Discussions are awaited with *MoJ and CPS*.

***Health and Well-Being***

99. Microchipping, which encourages responsible dog ownership through greater traceability to dog owners, is likely to lead to a fall in the number of dog attacks. Dog attacks incur significant costs for the NHS, Hospital Episode Statistics show that dog attacks cost the NHS approximately £3.3 million per annum. In addition there are 225,000 attendances at A&E or NHS drop-in centres for dog bites, the cost of which are not kept centrally and are therefore unknown. To the extent that greater uptake of microchipping reduces dog attacks this cost could be reduced. The direct impact a greater uptake of microchipping may have on dog attacks is unknown and therefore cannot be quantified.

***Small firms impact test***

100. Despite a paucity of evidence on the nature of the industry one can safely assume that it is unlikely any commercial breeder or dog trader employs more than 10 full-time employees (FTE). Breeding dogs is not labour intensive work and the market is not concentrated enough for there to be businesses operating with more than 10 FTE's. The business costs outlined above of £0.6 million for the preferred option are therefore likely to fall entirely on micro-businesses.

101. Those dog breeders/traders not already microchipping their dogs may need to be trained to implant microchips and those breeders and pet shops selling puppies will need a scanner to read microchips. Whilst there is an initial outlay, it is relatively small at approximately £170-325 and therefore is likely to be passed on to the customer. The microchips will cost dog breeders/traders between £4-£7 to install, which is a small amount relative to the retail price of a puppy and the lifetime cost of its care. Taking this into account it is likely that breeders will be able to pass the cost of the microchip onto the customer and this is unlikely to result in lower sales. The costs being passed on to owners effectively means that the burden will not be on micro-businesses but on the owners to whom microchipping is providing the benefit of having their dogs returned if lost.

102. The legislation will apply uniformly across industry including micro-businesses (which includes all dog breeders and a small number of pet shops) and a microchip is a very minor cost relative to the cost of purchasing and breeding a dog.

***Competition assessment***

103. This policy is not expected to have any substantial impact on competition within the microchipping industry. Provided their products meet specified standards the policy does not discriminate between microchip providers. The policy also does not discriminate between microchip installers provided they have undertaken the required training and meet the required standards. Dog owners/breeders requiring microchipping can still use existing microchip installers whether they be vets, dog breeders or welfare organisations. Nevertheless, as recognised above it is possible that there will be the incentive for more people to enter the microchipping market so existing providers may face increased competition. This impact is likely to be matched by increased demand for microchips and microchipping services.

104. Unfortunately we do not have sufficient evidence to evaluate these potential impacts as despite engaging with numerous stakeholders there is not enough information about the current state of the microchipping industry to judge what the impact of the different policy proposals could be.

**Summary (including non quantified costs and benefits)**

105. Options 1 and 4 propose to introduce compulsory microchipping gradually, only on change of ownership/for puppies only. This policy will help build the numbers of microchipped dogs in the general population without placing any burden on owners of currently un-microchipped dogs who are free to keep their dogs un-microchipped unless they sell or transfer ownership of their dogs which makes this the preferred option despite taking the longest to realise full benefits to society. This legislation will create a steady, manageable workload for the microchip database operators. However it will be difficult to enforce. This policy has the lowest net present value of £3.3m.

106. Option 2 proposes gradual microchipping over 5 years by the end of which all un-microchipped dogs still in the population will require microchipping. This option does not place any burden for up to 5 years on owners of currently un-microchipped dogs who are free to keep their dogs un-microchipped unless they sell or transfer ownership of their dogs within the first five years. After the 5 year period it will provide legislative certainty that all dogs require a microchip thus helping to lock in the benefits of microchipping listed here. However, the set-date approach to microchipping is likely to prove a burden to some dog owners, particularly to owners of older dogs that are unlikely to stray. It will also be difficult to enforce for the first 5 years and will require greater publicity with a risk of “information fatigue” of dog owners. In terms of net present value this option falls between options I and 2 at £5.9m.

107. While Option 3 provides greater savings it will create a greater burden on existing dog owners who will be forced to microchip their dog within a short period of time. An immediate compulsory scheme would provide legislative certainty for owners and enforcers but may place pressure on microchip databases that will need to process a huge number of applications over a very short time period. This may in turn lead to long delays in database issuing registration documents for the estimated 2.9 million dogs currently without microchips. Such delays may lead owners to postpone microchipping and registration and subsequently forget about it or not bother at all. This option has easily the highest net present value at £24.5m.

108. All options have non quantified costs associated with them. Enforcement of failure to microchip could add costs to CPS and Courts but those most likely to default are likely to be made compliant under other legislation (e.g. Dangerous Dogs Act). Responsible owners which are likely to obey any notice served upon them should not add any significant case loads to the CPS and Courts. There may also be costs associated with databases need to comply with approved standards but this cannot be established until after consultation. There will also be costs to the public in updating their contact details on the microchip databases but there is no evidence of the number of average updates in a dog’s lifetime so this cannot be quantified.

109. All options have unquantified benefits. These are likely to accrue more quickly with option 3 over option 2 and then options 1 and 4. There will a reduced incidence of welfare problems caused by

kennelling untraceable dogs and an increase in dog health and savings to owners through a gradual reduction in illnesses and defects caused by poor breeding conditions and practices because problems are more traceable back to breeders who can then be brought to account. Increasing traceability leading to more healthy dogs and a decrease in the pressures on charitable veterinary organisations like the PDSA and the Blue Cross. In addition a reduction in the time that re-homing centres have to look after lost dogs (because of greater traceability) will lead to a decrease in the overall numbers and a reduction in the need to destroy more difficult to re-home dogs (see paragraph 66). That traceability will also encourage more responsible ownership that in turn should lead to reduced numbers of dog attacks and savings to the NHS in treating those attacks together with savings from a reduction in lost days of work. There is also likely to be a reduction in dog nuisance to the benefit of society.

110. It is proposed to consult on the pros and cons of the options to help establish the preferred approach.