SPCA

Submission

Explanatory Report: Draft Code of Welfare (Dogs) 2023

Contents

Introduction

Please note: This is a explanatory report for the draft Code of Welfare submitted to NAWAC for consideration. This document has not been issued by the Minister for Agriculture and does not replace the current Code of Welfare (Dogs) 2018 or any other related legislation.

Codes of welfare are developed by the National Animal Welfare Advisory Committee (NAWAC). Under section 70 of the Animal Welfare Act 1999 (the Act), the Minister, NAWAC, or any other person may prepare a draft code of welfare. If a specific industry or organisation believes a new code, or an updated code, is needed, they can invest their own resources to develop a draft code before sending it to NAWAC for consideration. NAWAC Guidelines for Writing a Code of Welfare can be found here.

Please note that as such, the draft code released by SPCA in its current form reflects the work of a writing group comprising seven national stakeholders* to draft an updated code of welfare for dogs, which has yet to be reviewed by NAWAC.

1. Why is a code of welfare for dogs important?

According to New Zealand's Animal Welfare Strategy, New Zealanders have strong animal welfare values. Animals play an important part in many aspects of New Zealand life, including as companions. New Zealanders believe that it matters how animals are treated (Ministry for Primary Industries, 2013).

Dogs are sentient animals that are protected under the Animal Welfare Act 1999 (the Act). The Act establishes the fundamental obligations relating to the care of animals and provides for the development and issue of codes of welfare. Codes of welfare expand on the basic obligations of the Act by setting minimum standards and recommending best practice for the care and management of animals. As described on the Ministry for Primary Industries' (MPI) website, it is important to have codes for different species because with so many species and situations, it is impractical to cover all standards in the Act itself.

Dogs are commonly found throughout New Zealand. Dogs are a popular companion animal, with over 851,000 dogs in New Zealand homes (Companion Animals New Zealand, 2020). In all instances where dogs are kept or provided care, their welfare may be compromised if their physical, health, behavioural, mental, and emotional needs are not met.

The National Animal Welfare Advisory Committee (NAWAC) considers the relevance of all codes should be reviewed after 10 years (National Animal Welfare Advisory Committee, 2016). The codes of welfare are intended to be flexible enough to be implemented, modified and improved as community expectations, good practice, scientific knowledge, and technical advances allow (Ministry for Primary Industries, 2023).

** Companion Animals New Zealand (CANZ), Companion Animal Veterinarians (NZVA-CAV), Dogs New Zealand (Dogs NZ), New Zealand Institute of Animal Management (NZIAM) New Zealand Veterinary Association (NZVA), New Zealand Veterinary Nursing Association (NZVNA), SPCA New Zealand (SPCA), and Veterinarians for Animal Welfare Aotearoa (VAWA).*

Advancements in our understanding of dogs' welfare needs have been made since the Code of Welfare for Dogs (the Code) was originally drafted in 2009 (issued in 2010) and, over the fourteen years subsequent to the first draft, more information has become available about the impacts of handling and training methods, confinement methods, breeding, and the importance of reducing stress in diverse settings such as the home, the veterinary clinic, the shelter, places where dogs housed in kennels for use in breeding, working, or used in research, testing, and teaching.

The importance of positive welfare for dogs, including the importance of play, relationships with people, and the role of enrichment in providing opportunities for dogs to experience positive emotions is also better understood. This report summarises the current evidence of what is important for dog welfare and demonstrates why we believe an updated Code is long overdue.

There are many challenges for dog welfare. The updated Code aims to set standards of care that help address problems that impact dog welfare.

The popularity of dog breeds with extremes of confirmation that negatively affect their health and welfare (such as brachycephalic (flat-faced)) dogs, has grown in recent years. Many prospective owners are not aware of the health or welfare issues that may affect these dogs. These welfare concerns are further perpetuated by the lack of regulation of dog breeding in New Zealand which can lead to indiscriminate breeding of popular breeds for maximum profit.

Most complaints (70%) Royal New Zealand Society for the Protection of Animals (SPCA) receives in relation to companion animal breeders involve dog breeding. Complaints about breeding often involve large numbers of dogs and puppies and concerns about overbreeding, undisclosed health issues, and other unethical breeding practices.

In June 2021, the animal charity, Helping Us Help animals (HUHA), hosted a survey on their social media pages, asking people where they sourced their current dog and their experience. Of the 391 survey respondents, 200 reported that their puppy had health, behavioural or a combination of health and behaviour issues. Some respondents reported their dogs needed to be euthanised due to the severity of these issues.

SPCA has met regularly with, and provided written advice to, MPI's policy team and the Associate Minister for Agriculture (Animal Welfare) to advocate for dog breeding practices and other dog welfare issues to be addressed in alignment with regulation of companion animal breeders in other jurisdictions (see for example, Department for Environment, Food & Rural Affairs, 2020c, 2020a, 2020b).

Ensuring behavioural needs are met is an important way to improve dog welfare in the home and in shelters, breeding, sport, work, and boarding kennels, and in research, testing, and teaching facilities. Ensuring a dog's behavioural needs are met can also help reduce relinquishment to shelters and rescues.

Failure to provide adequate or appropriate socialisation and training places dog welfare at risk, increases risks to the community, and increases the risk of relinquishment. Several reviews have identified the welfare risks associated with inappropriate training methods (Guilherme Fernandes et al., 2017; Makowska & Cavalli, 2023; Ziv, 2017). The availability of punitive training tools, the resurgence of outdated, discredited training philosophies, and lack of regulation of dog trainers in New Zealand present barriers to adoption of humane training approaches (RSPCA Australia, 2020; Skyner et al., 2020; Todd, 2018).

2. What will it be used for?

The purpose of the Code is to provide guidance to the owners and persons in charge of dogs about the standards they must achieve to meet their obligations under the Act. Codes of welfare also provide guidance for owners or persons in charge of an animal that act as a definitive government source of information that can be adapted and shared.

The Code is important for communicating expectations about what dogs require for good welfare. The Code indicates what owners and persons in charge of dogs must do to provide care of dogs (i.e. minimum standards). The Code also includes recommendations for best practice to encourage the adoption of the highest possible standards of day-to-day care, and handling. Advice is given to encourage the provision of care to achieve a high level of welfare for dogs. Explanatory material is provided where appropriate.

Failure to meet a minimum standard in the Code may be used as evidence to support a prosecution for an offence under the Act. A person who is charged with an offence against the Act can defend themselves by showing that they have equalled or exceeded the minimum standards in the Code.

Our (SPCA) Inspectors are requesting support in promoting more responsible dog ownership in New Zealand. Updated standards will assist our Inspectors in educating members of the public and in issuing mitigation of suffering or compliance notices. Without a more updated supporting (evidence-based) document, it can be difficult to facilitate human behaviour change on the front lines of preventing animal cruelty and advancing animal welfare.

3. Who will it apply to? What animals will it apply to?

The Code is intended for all persons responsible for the welfare of dogs, including those who keep dogs as companions (pets), dog breeders, those who sell, rescue, or rehome dogs, those who are in charge of dogs in temporary housing, use dogs for research, testing, and teaching, or use dogs for sport, as working animals, or for any other reason.

Examples of working dogs include disability-assist dogs, dogs used by government agencies (e.g. MPI dogs), and dogs used for livestock management. Examples of dogs used for sport include sled pulling dogs, racing greyhounds, show dogs, dogs used for hunting, and dogs used in agility, obedience, nose work, Rally-O, Treibball, Flyball, and other dog sports.

Under the Act the “owner” and every “person in charge” of an animal is responsible for meeting the legal obligations for the welfare of animals under their care. For dogs, the owner of the animals may place them in the care of others who become the persons in charge, but this does not derogate from their responsibility to ensure that the requirements of the Act are met. The owner and person in charge of the animals will ensure they meet minimum standards relating to the provision, design and maintenance of the facilities and equipment, allocation of operational responsibilities, and ensure the competence and supervision of employees.

This Code is intended to apply to all dogs in New Zealand regardless of their use in our society. It became apparent during pre-NAWAC targeted stakeholder consultation that dogs housed in temporary housing are believed to be exempt from this Code. There is also a wish from select stakeholders that dogs kept and used for certain types of work (e.g. farm dogs) should be exempt from this Code. Separate codes of welfare for dogs kept and used for some types of work and for breeding dogs were proposed by some stakeholders during the consultation process.

4. What would happen if you did not have the Code?

Dogs experiencing sub-optimal or poor welfare will continue to do so. The current Code is outdated and does not include enough minimum standards to meet the minimum requirements for dogs' physical, health, and behavioural needs under the Act.

Our (SPCA) Inspectorate will continue to have inadequate tools to address welfare cases related to dogs. The inability to refer to an up-to-date resource that provides information to the owners and persons in charge of this species about the standards they must achieve can result in subjective assessments being made by inspectors and veterinarians that make it difficult to achieve national consistency in enforcement. It reduces the ability to impact wider industry changes if each investigation is based on outdated benchmarks in terms of minimum standards.

Additionally, not having a more current Code of Welfare for Dogs will signal that one of our most popular companion animal species is not considered important by the government, despite New Zealanders caring deeply about their dogs. According to the latest Companion Animals New Zealand survey, 78 % of dog owners in New Zealand consider their dogs to be 'a member of the family' (Companion Animals New Zealand, 2020).

New Zealanders expect that our animal welfare system is effective for all animals, not just those that contribute to our primary industry exports. Companion animals, animals in research, animals in the wild, animals used in entertainment, and farmed animals such as fish and chickens, must receive equal and adequate consideration. New Zealanders want legislation that better protects dogs; in 2022 more than 29,000 New Zealanders signed a petition calling for action to ban life chaining of dogs, over 20,000 New Zealanders took action to send a letter to the then Associate Minister for Agriculture (Animal Welfare), Minister Whaitiri, calling for regulations to address prolonged and inappropriate tethering and containment of dogs, followed by a joint letter to the current Minister, Jo Luxton, signed by more than 15,000 people in September 2023.

Once the Code is submitted, SPCA will state that the Code has been submitted to NAWAC and MPI on its website and will consider making the draft code available for our Inspectorate and for people to view until such time as the Code is progressed. The other six organisations involved in re-drafting this Code may also choose to do this. The organisations who were involved in drafting this Code were: Companion Animals New Zealand (CANZ), Companion Animal Veterinarians (NZVA-CAV), Dogs New Zealand (Dogs NZ), New Zealand Institute of Animal Management (NZIAM), New Zealand Veterinary Association (NZVA), New Zealand Veterinary Nursing Association (NZVNA), SPCA New Zealand (SPCA), and Veterinarians for Animal Welfare Aotearoa (VAWA).

This will help ensure that people have access to up-to-date information on dog care while the Code progresses through the MPI process, which in SPCA's most recent experience with the Temporary Housing of Companion Animals and Rabbit Codes can take a long time. However, until this Code is issued by the Minister, the document will not have any legislative backing.

5. What alternatives to a code of welfare (for example, industry administered quality assurance system) did you consider and why are they not appropriate?

We did not consider alternatives to a code of welfare because the Code of Welfare for Dogs currently exists. Codes of welfare are intended to be based on current science, best practices, and available technology as a base for Minimum Standards and Recommended Best Practices. With the current code being thirteen years old, it has become an outdated source of information. New Zealanders regularly rely on veterinarians,

national organisations, charities, and local councils to provide the most up to date information and guidance about dog welfare.

Guidance is not the same thing as standards under the Act. As described on MPI's website, MPI "leads and facilitates the management of animal welfare policy and practice in New Zealand." SPCA looks forward to engaging with MPI to ensure that the enforcement of companion animal welfare in New Zealand remains robust.

Our organisation considers that a code of welfare is required to provide information to the owners and persons in charge of dogs about the standards they must achieve to meet their obligations under the Animal Welfare Act and assist our inspectorate.

Publishing an updated code of welfare for dogs will assist in addressing public concern for dogs in New Zealand.

6. Are the minimum standards in the code the minimum necessary to ensure the physical, health, and behavioural needs of the animals will be met?

Do they reflect good practice, scientific knowledge, and available technology? Please provide supporting evidence.

In the following section, we provide rationale for the minimum standards in the draft Code based on the current scientific knowledge, expert opinion, good practices, and available technology for dogs. The sections below correspond to the different sections in the draft Code where there are minimum standards.

PART 2:
Dog Ownership

2.1 Handling Dogs: Minimum Standard No. 1

Dogs and handlers benefit from gentle and respectful dog handling. The use of low stress, force and fear free handling techniques is less stressful for dogs than more forceful handling or restraint (DeTar et al., 2022; Edwards et al., 2019; McMillan & Spaulding, 2022; Riemer et al., 2021; Yin, 2009). Using handling techniques which minimise fear, anxiety, and stress is important for dogs' welfare (McMillan & Spaulding, 2022; Riemer et al., 2021).

When fear and stress are minimised, animals are calmer and more willing to interact with people, resulting in safer and more successful interactions (DeTar et al., 2022).

Dogs benefit from early socialisation and reward-based training and these approaches can be used to encourage dogs to participate voluntarily with routine handling. Cooperative care involves training an animal to not only tolerate handling and animal care procedures, but to be an active, willing participant in these experiences (Jones, 2023; Riemer et al., 2021; Sydänheimo et al., 2023). Using cooperative care techniques, dogs can be trained to participate in handling and day to day care, including training them to allow examinations, taking medications, or claw trimming and other grooming procedures (Sydänheimo et al., 2023).

Use of forceful handling and restraint can increase fear associated with handling and the risk of aggression or injury, both within that interaction and in response to future handling (Oxley et al., 2018). Resistance to handling is often the result of fear or anxiety. Improper or forceful use of restraint techniques and equipment can escalate a high stress situation, increasing the likelihood of animal or human injury (DeTar et al., 2022; Herron et al., 2009).

Where a dog must be restrained as part of a necessary handling procedure, they should be allowed to choose the position they hold their head or body, including their limbs, and be allowed to change these positions whilst being handled. This can reduce how much a dog struggles and leads to fewer indicators of fear, anxiety, and distress than more forceful restraint. Where a dog needs to be restrained in a manner where they cannot choose their position, the minimal restraint needed to allow the task to be performed safely should be used in accordance with Low Stress Handling principles (Yin, 2009).

Dogs should not be held by the scruff to hold them in a restraint, nor whilst being lifted, as this can cause fear, pain and distress, and provoke or escalate defensive dog aggression (Yin, 2009). Some restraint techniques may also exacerbate existing health conditions (e.g. respiratory problems). For example, brachycephalic (flat-faced) dogs and those with existing respiratory problems, or glaucoma and protruding eyes are particularly at risk of welfare harm such as breathlessness ("air hunger") or high intraocular (eye) pressure (Beausoleil & Mellor, 2015; Nutbrown-Hughes, 2020; Pauli et al., 2006).

Care should be taken when dogs are disturbed from resting or eating, or when interacting with resources highly valued by the dog (e.g. bed, toys) (Oxley et al., 2018). Some dogs can find common human behaviours, such as hugging, stressful and interactions should be tailored to the individual dog (Arhant et al., 2017; Kuhne et al., 2014).

Educating children from a young age to respect dogs and how to interact with them appropriately can help to keep both dogs and children safe (Chapman et al., 2000; Lakestani et al., 2014; Schalamon et al., 2006). It is important that dogs and children are actively supervised while interacting with dogs (Arhant et al., 2016; Schalamon et al., 2006).

2.2 Purchasing or Adopting a Dog or Puppy: Minimum Standard No. 2

Provision of care for a dog should fulfil the five domains of animal welfare (Mellor, 2015; Mellor et al., 2020) which link the provision of care related to nutrition, environment, health, and behavioural interaction with a dog's mental state. Prospective adopters' knowledge about the needs of a companion animal can impact their expectations and the quality of the human-animal relationship (Buckland et al., 2014). It is essential that new dog owners are provided information related to the dog's relevant medical, behavioural, and socialisation history, and recommended procedures for settling the dog into their new environment (European Platform on Animal Welfare, 2020).

Dog ownership is a commitment for a dog's lifetime, the average lifespan of a desexed companion dog is 11-12 years (Montoya et al., 2023; New Zealand Veterinary Association, 2018a; Teng et al., 2022). Finding an appropriate dog involves careful deliberation and reflection on what qualities will suit the owner's home and lifestyle (American Veterinary Medical Association, 2016). Certain dog breeds (and their crosses) may be associated with higher energy requirements, higher maintenance requirements (such as more frequent grooming), behavioural traits, or inherited health issues which impact care requirements (New Zealand Veterinary Association, 2018a).

Dog ownership also requires an investment of time and resources for food, containment, veterinary care, and provision of care when the owner is away (American Veterinary Medical Association, 2016; New Zealand

Veterinary Association, 2018a). Dog owners should be prepared to provide alternative arrangements for the dog if, for some reason, it is no longer possible for the owner or carer to look after the dog (New Zealand Veterinary Association, 2018a).

It is accepted that responsible dog ownership includes:

- Microchipping and use of a collar and tag for identification purposes (American Veterinary Medical Association, 2016; New Zealand Veterinary Association, 2018a).
- Desexing before puberty where a dog is not intended for breeding (New Zealand Veterinary Association, 2018a).
- Appropriate health care in accordance with veterinary advice and support. Dogs require both preventive and therapeutic health care (e.g. vaccinations, parasite control, and treatment and monitoring of health problems) (New Zealand Veterinary Association, 2018a).
- Adequate socialisation, training, exercise, and mental stimulation appropriate to their age, breed, and health status (American Veterinary Medical Association, 2016; New Zealand Veterinary Association, 2018a).

Adequate socialisation is important to help puppies develop into confident, well-adjusted adult dogs (APDTNZ, n.d.; AVSAB, 2008; Dietz et al., 2018; McEvoy et al., 2022; New Zealand Veterinary Association, 2018a). The goal of socialisation is for puppies to have positive experiences, not neutral or bad ones (McEvoy et al., 2022). This involves gradually introducing a puppy to experiences such as handling by people, the professional grooming environment, exposure to novel experiences, vaccinated dogs, cats and other animals, vehicles and household appliances. Sound recordings or online videos are recommended to gradually introduce puppies to loud or startling noises, such as fireworks (McEvoy et al., 2022). Puppy socialisation classes may provide puppies with opportunities to positively engage with other appropriate puppies in a controlled, supervised environment (AVSAB, 2008). Treats can be used to build positive associations, but a puppy's behaviour should be monitored to ensure they do not become overwhelmed.

Because many working dogs retire into companion homes, adequate socialisation as puppies is just as important for working dogs as for companion dogs (Branson et al., 2009). Dogs who do not receive adequate socialisation as puppies may be considered unsuitable as pets, resulting in euthanasia at point of retirement (Cobb et al., 2015).

2.3 Identification: No Minimum Standard

2.4 Relinquishing (Changing) Ownership: No Minimum Standard

PART 3:
Food and Water

3.1 Food and Feeding: Minimum Standard No. 3

Dogs need a nutritionally balanced diet, appropriate for their life stage and energy requirements, in quantities that meet their requirements for good health and welfare. Food and nutrient requirements

of dogs vary widely. Factors to be considered include the dog (i.e. their age, sex, size, state of health, growth rate, breed, level of activity and exercise, and physiological state), and the food (i.e. its nutritional composition, quality and frequency of feeding). Dog food labelled as "complete and balanced" means the product is intended to be fed as a dog's sole diet and is formulated to meet one of the dog food nutrient profiles established by the European Pet Food Industry (FEDIAF), the Association of American Feed Control Officials (AAFCO), or other internationally recognised standards or guidelines (Ministry for Primary Industries, 2018). AFFCO and FEDIAF have a nutrient profile for growing puppies and reproduction, and one for adult maintenance (Association of American Feed Control Officials., 2015). Food labelled with the AAFCO or FEDIAF label on the container can be assured to meet the nutrient profiles that dog needs. Care should be taken in feeding amounts of food that are required to maintain ideal body condition.

Home-made diets may not contain all the nutrients a dog needs (Pedrinelli et al., 2017, 2019). If they are to be fed, they need to be carefully formulated and prepared to ensure they are nutritionally balanced and reduce the risk of microbial contamination (Davies et al., 2019; Miller et al., 2010; Remillard, 2008). People considering feeding alternative diets (e.g. homemade, raw, or plant based) to their dogs should do so in consultation with their veterinarian, a board-certified veterinary nutritionist, or other suitably qualified persons. A diet of lean meat only is not balanced and is not appropriate for prolonged periods (Remillard & Crane, 2010).

Puppies will begin weaning around three to four weeks of age and can be introduced to wet puppy food around this time (Debraekeleer et al., 2010b) and should be fed small quantities at regular intervals (i.e. three to four and up to five times throughout the day) and this can be gradually reduced to twice a day until the dog reaches physical maturity. Adult dogs should be fed at least once a day (Bray et al., 2022). Owners typically feed their dogs one to two meals per day (Thatcher et al., 2010) however, the optimum frequency of feeding will vary depending on the individual and the dog's level of activity (Debraekeleer et al., 2010a; Thatcher et al., 2010).

3.2 Risky Foods and Objects: No Minimum Standard

3.3 Disease and Illness related to Diet: Minimum Standard No. 4

Feeding unbalanced or inadequate diets to dogs can cause significant health and welfare problems including abnormal growth, obesity, reproductive issues, vitamin deficiency, and poor oral health (Buckley et al., 2011; Remillard, 2008; Thatcher et al., 2010). Many nutritional deficiencies will appear more rapidly in growing dogs fed a deficient diet due to the high demand for nutrients during this period (Delaney & Fascetti, 2023; Thatcher et al., 2010). Veterinary advice and investigation are usually needed to diagnose and treat a dog that has signs of disease related to diet. If a dog is suffering from an illness or disease, special attention to the dog's diet may be required.

Obesity is common in dogs and can lead to diseases such as heart and kidney disease, diabetes, arthritis and skin conditions (German, 2006; Marchi et al., 2022).

Dogs should not be exercised soon after a large meal, or fed shortly after vigorous exercise, because this increases the risk of gastric (stomach) torsion occurring (Gibson, 2020). At risk dogs, such as larger, deep chested breeds, should be fed two small meals per day rather than a single larger meal and elevated feed bowls should be avoided (Bell, 2014; Glickman et al., 1997; Raghavan et al., 2004).

Diet also affects oral health in dogs. Dental problems may arise where soft food is the predominant diet (Buckley et al., 2011). Dogs' teeth and gums will benefit from chewing on harder food, such as raw bones that they cannot splinter, dry kibble food, and from regular cleaning. There are a range of products

available including diets and toys that are beneficial for oral health (for example, the Veterinary Oral Health Council seal indicates a product has met a pre-set standard of plaque and calculus (tartar) retardation in dogs) (Veterinary Oral Health Council, n.d.). Between veterinary visits, regular tooth brushing with brushes and toothpaste designed for dogs, can help maintain oral health (Allan et al., 2019; Claydon et al., 2023; Rooney et al., 2021).

3.4 Body Condition: Minimum Standard No. 5

Body condition scoring should be performed using both visual and hands-on assessments. Body condition of dogs cannot be accurately assessed by simple visual observation – the extent of fat deposits can only be accurately assessed by feeling the tissues over the dog's ribs, backbone, pelvis, and abdomen (WSAVA Global Nutrition Committee, 2013):

- An adult dog should be well proportioned and have an observable waist behind the ribs when viewed from above and from the side.
- Ribs should be palpable (able to be touched or felt), but with a light fat covering.
- The abdominal fat pad should be minimal; excessive abdominal fat indicates obesity, which can contribute to disease.

Generally, the amount of food offered needs to be increased if a dog is losing condition, or decreased if it is becoming overweight. Food that is formulated for weight loss can be helpful for weight loss management as it increases satiety and reduces food seeking behaviours (Flanagan et al., 2017). If weight loss/gain persists after modifying diet, veterinary advice should be sought.

A dog's nutritional requirements may differ when growing, given significant exercise or work, during pregnancy or when lactating (Thatcher et al., 2010). Depending on the number of puppies being fed, a lactating bitch may require up to three or four times the normal amount to ensure her milk supply for the rapidly growing puppies and to prevent metabolic diseases such as eclampsia (Debraekeleer et al., 2010c). Dogs and bitches may have lower energy requirements after desexing, and the amount of food provided should be modified accordingly.

Obesity is a leading health and welfare concern in dogs worldwide (British Veterinary Association et al., 2020; Buckland et al., 2014). An estimated 28 % of companion dogs in New Zealand are overweight or obese (Gates et al., 2019). Obese dogs face serious health risks and are predisposed to conditions such as diabetes and heart disease (German, 2006; Marchi et al., 2022). Excessive weight also impacts dogs' quality of life and can damage joints, reduce mobility and exacerbate arthritis (German, 2006; Marshall et al., 2009; Yam et al., 2016). The life expectancy of an obese dog is two years less than that of a normal dog (Montoya et al., 2023; Teng et al., 2022).

Weight loss can improve quality of life (German et al., 2012). Weight management is multifactorial and needs to consider the individual dog and their human caregivers (German, 2006; German et al., 2011; Linder, 2012). There are a variety of weight loss programmes available based on the dog's needs and fit with the family dynamic. Owner compliance is key to successful weight loss programmes (Porsani et al., 2020). Exercise programmes for weight loss need to be designed carefully so that the level of exercise increases gradually as the dog's fitness level increases and to take account of any co-existing conditions such as arthritis which might be exacerbated by exercise (Shamlberg, 2019). Where there is doubt about how an exercise regime can be implemented, expert advice should be sought.

Dog owners may struggle to accurately assess their dog's body condition (Forrest et al., 2022). Body condition score scales can improve accuracy of scoring but results with the 5-point scale are mixed

(Eastland-Jones et al., 2014; Liyanage et al., 2022). The 9-point scale has been updated since the Code was last drafted (which currently includes the 5-point scale) (WSAVA Global Nutrition Committee, 2013). The 9-point scale is validated and considered easy to use (German et al., 2006; Kealy et al., 2002).

3.5 Water: Minimum Standard No. 6

Clean, fresh, palatable water should always be available for all dogs. Water requirements vary between individuals and depend on workload, weather conditions (especially temperature), and requirements of lactation. As a general guide, dogs require 50-70 ml of water per kg of body weight daily for general functioning with additional requirements during hot weather or when performing high levels of work (English & Filippich, 1980).

While all dogs need daily access to water, requirements will be modified by the water content of the food provided. Dogs who eat dry food need more water than those eating canned food or pet food rolls (English & Filippich, 1980). Milk is not an appropriate source of liquid for dogs and should not be the sole source of liquid and can lead to stomach upsets and diarrhoea (Wills & Harvey, 1994).

Dehydration can become a serious problem for a dog (especially a puppy) when diarrhoea or other conditions occur that cause excessive fluid loss from the body. Equally, if an increase in thirst occurs this may indicate that kidney damage or a disease such as diabetes and veterinary attention should be sought (Brown, 2018).

PART 4:
Containment and Housing

4.1 Containment and Housing (other than for transport or under veterinary care): Minimum Standard No. 7

Dogs may be contained to a property by keeping them indoors, in a fenced area, or confined in a kennel or shaded enclosure with attached run, tether, or a running line. Appropriate containment of unsupervised dogs prevents them from roaming, injuring, or otherwise harming themselves, other animals, and people (Starinsky et al., 2017).

Dogs housed in confinement cages or kennels have negative welfare consequences mainly due to the inability to control their environments, and the lack of social contact with conspecifics and humans (Nogueira et al., 2021). Dogs should be provided with large and complex housing spaces that allows them to choose when and where they spend their time. Space should be well-designed from the dog's perspective and furnished with enrichment (DeTar et al., 2022). Dogs should be able to move freely and comfortably in their environment, without competition from other dogs (Candiani et al., 2023; European Platform on Animal Welfare, 2020).

The size of a dog's primary enclosure (the housing where the dog spends the majority of their time) is important for a dog's welfare (Barnard et al., 2016; DeTar et al., 2022). Appropriate primary enclosures provide complexity and allow choice within the environment to support positive welfare (DeTar et al., 2022).

Every dog needs enough space in their primary enclosure to walk, run, play, turn around, stand, stand erect on hind legs, wag their tail, lie down fully stretched out without touching another dog or walls (European Platform on Animal Welfare, 2020). Vertical space (e.g. height of enclosure) also impacts behaviour and should be considered (Normando et al., 2014). The physical space provided to dogs needs to be large enough to allow separation of sleeping, toileting and activity areas and to accommodate the inclusion of enrichment (DeTar et al., 2022; European Platform on Animal Welfare, 2020).

Dogs in temporary housing facilities, such as shelters, should be given the opportunity to hide within their enclosure. This is particularly important for young, small, fearful, and anxious animals (DeTar et al., 2022). Provision of hide areas can be achieved through the introduction of a covered crate within the larger enclosure or a visual barrier over part of the kennel front (DeTar et al., 2022).

A correctly fitted collar allows space between the collar and the neck so that it does not restrict breathing or chafe against the hair and skin of the dog's neck but is secure enough that the dog cannot slip their head from the collar.

The length of time that dogs are contained, and the way that it is done, can have a significant positive or negative impact on their welfare (Beerda, H Schilder, et al., 1999; Beerda, Matthijs, et al., 1999; Polgár et al., 2019; Stephen & Ledger, 2005; Titulaer et al., 2013; Wells, 2004). Prolonged containment (confinement or tethering) can have a significant negative impact on a dog's physical and mental health and their ability to satisfy their behavioural, mental, and emotional needs (Littlewood & Mellor, 2016). Where dogs are routinely contained, provisions are required to provide opportunities for physical exercise and mental stimulation, such as walks off the property and playing with humans or other appropriate dogs (Grigg et al., 2017; Hubrecht, 1993; Wells, 2004; Willen et al., 2019). Dogs are also at welfare risk if they cannot engage in behaviours that promote their physical health such as exercising and those that promote their mental health, such as exploration, digging, chewing, and having choices and control in their environment (Littlewood & Mellor, 2016).

Dog cages or crates may sometimes be used to limit a dog's movement while recovering from injury, if advised by a veterinarian, but are unacceptable for use as permanent housing (DeTar et al., 2022).

The cage or crate must be of sufficient size to allow the dog to make normal postural adjustments within, including standing and walking a couple of steps, sitting normally, laying down at full body length, and holding the tail completely erect (DeTar et al., 2022).

It is unacceptable to stack or arrange crates or cages in a manner that increases animal stress and discomfort, compromises ventilation, or allows for waste material contamination between housing units (DeTar et al., 2022).

Compatibility of dogs should be considered in housing arrangements to maximise opportunities for positive social interactions and avoid conflict (DeTar et al., 2022). When cohousing dogs, pairs are preferred to maximize safety and biosecurity, and no more than four adult dogs should be cohoused in a primary enclosure (DeTar et al., 2022; R. Hubrecht et al., 2016).

Attention needs to be paid to the design of the co-housing enclosures, the space allowance, compatibility of dogs, and biosecurity within such settings to limit the opportunity for disease to spread and reduce stress and the risk of negative interactions that could compromise welfare (Candiani et al., 2023; DeTar et al., 2022; European Platform on Animal Welfare, 2020). Dogs living in multi-dog settings will benefit from additional provisions to meet their physical, health, behavioural, mental, and emotional needs (Hubrecht, 1993).

4.2 Lying Areas and Bedding: Minimum Standard No. 8

For dogs that are kept in kennels, multi-compartment kennels are recommended as they provide a dog with more choice and control in their environment (DeTar et al., 2022). Multi-compartment kennels provide dogs separation of toileting areas from food, water, and resting areas (DeTar et al., 2022; Wagner et al., 2014). Dogs can be moved between compartments whilst cleaning, which can make cleaning easier and safer for staff, reduces stress on the dogs, and helps minimise the spread of disease (DeTar et al., 2022).

Bedding or a soft lying surface should be available to all dogs (Barnard et al., 2016; Döring et al., 2016, 2018; Rooney et al., 2009). The type of bedding required depends on factors such as the body condition of the dog, the length of their coat, their age and housing materials. While metal and concrete sleeping areas are easier to clean, these hard surfaces may be cold and can cause pressure sores and exacerbate arthritis (Polgár et al., 2019; Rooney et al., 2009). Sleeping beds raised off the ground will increase comfort where dogs live in these types of kennels. Supportive bedding is of particular benefit to older dogs, dogs with arthritis, and short-coated lean dogs which may develop calluses or sores over the elbows and hocks (Döring et al., 2018).

Addressing underlying welfare issues and providing alternative outlets for chewing can be used to mitigate bed chewing behaviours (Rooney et al., 2009). Additionally, while some dogs shred fabric bedding, ingestion is rare (Normando et al., 2014). Bedding that cannot be easily destroyed or ingested is widely available (Desforges, 2021; Overall & Dyer, 2005).

4.3 Temperature, Ventilation and Lighting: Minimum Standard No. 9

Dogs benefit from housing that allows for indoor–outdoor access (DeTar et al., 2022). It is essential that housing areas allow each animal to comfortably maintain normal body temperature. To ensure comfort for dogs kept in indoor environments, temperatures should be maintained between 18 and 26.6 degrees Celsius with humidity between 30 and 70 % (Candiani et al., 2023; DeTar et al., 2022).

Many working dogs in New Zealand are not provided with bedding, insulated kennels or coats and improving the housing for working farm dogs could have a positive effect on their health, welfare and career longevity (Isaksen et al., 2020). Kennels should be lined and floored with insulating material such as wood to reduce heat loss, and insulation should be installed under and around the kennel. This is particularly important for winter in colder parts of the country and summer in hotter parts of the country. Metal kennels or kennels with a metal roof can become extremely hot in warm weather so dogs need access to a shaded area with effective ventilation. In cold or extreme weather, dogs should be brought indoors. Where this is not possible, additional measures to keep dogs warm should be provided including providing additional bedding or a source of heating (e.g. plug in heat lamp) or a coat (DeTar et al., 2022; Rooney et al., 2009).

Dogs housed outdoors should be provided with well-ventilated, insulated housing such as a kennel with a run. Dogs need shade during warm weather and sufficient shelter, including a dry sleeping area, during cold or wet conditions. Cool water and cold tiles placed in the dog's resting area can help them to cool down when temperatures rise.

Dogs benefit from access to natural light for important behaviours such as resting and sleeping in the sunlight (Candiani et al., 2023; DeTar et al., 2022). Dogs should be exposed to a balance of light and dark conditions to maintain circadian rhythms (Candiani et al., 2023; DeTar et al., 2022).

Proper ventilation removes heat, dampness, odour, airborne microbes, and pollutant gasses such as ammonia and carbon dioxide while allowing for the introduction of fresh, oxygenated air (DeTar et al.,

2022). Care must be taken to ensure that ventilation does not compromise recommended ambient temperature. Ventilation of kennel facilities should be between 10 and 20 room air exchanges per hour with fresh air (DeTar et al., 2022).

4.4 Housing Materials and Maintenance: Minimum Standard No. 10

Kennels and runs should be constructed in materials that are robust, safe and durable, be structurally sound and kept in a safe, working condition to prevent injury or escape (Barnard et al., 2016; DeTar et al., 2022). Care should be taken to ensure there are no sharp edges, gaps, or other defects that could cause injury or trap a limb or other body part (DeTar et al., 2022).

Some building materials may be harmful or toxic to dogs and their presence in the dog's environment can pose a health risk. For example, arsenic exposure linked to building materials has been documented in a range of animals (Gress et al., 2016; Harrison & Mason, 1959; Hullinger et al., 1998; Racing Integrity Board, 2023). Toxic materials, such as lead-based paint or wood treated with arsenic, cause a risk of poisoning and should be avoided.

The floors of runs should be solid. Slatted or wire-mesh bottom enclosures are unacceptable because they can cause pain, discomfort and injury (DeTar et al., 2022). Dog-runs on the ground need to be well drained and kept clean of faeces and the area changed regularly to prevent a build-up of hookworms in the area (Candiani et al., 2023; DeTar et al., 2022).

Kennels with sides that are entirely wire or chain-link increase the risk of disease transmission, animal stress, and injury (DeTar et al., 2022). Solid barriers should be in place where animal contact can occur, particularly in temporary facilities where unfamiliar dogs are housed next to each other (DeTar et al., 2022).

PART 5:
Hygiene and Sanitation

5: Hygiene and Sanitation: Minimum Standard No. 11

Good hygiene is important in order to maintain the health and welfare of dogs and to minimise disease and distress (DeTar et al., 2022).

Dogs are highly motivated to avoid toileting in areas where they eat or sleep (Wagner et al., 2014). Primary enclosures must allow dogs to sit, sleep, and eat away from areas of their enclosures where they defecate and urinate (DeTar et al., 2022). Heavily soiled enclosures require sanitation (DeTar et al., 2022).

Tethering can cause significant stress and frustration and should be avoided during the cleaning of primary enclosures (DeTar et al., 2022). To avoid the need for tethering during cleaning, dogs can be removed from the primary enclosure for walks, playgroups or moved to securely enclosed exercise areas if housing is not multi-compartment (DeTar et al., 2022).

The environment should be well-ventilated to assist in preventing dampness and the build-up of noxious odours and to minimise the irritation of a dog's respiratory system (DeTar et al., 2022).

A dog's housing should not smell strongly of ammonia. Ammonia causes irritation to the mucosal lining of the entire airway system, from the nose to the deep lung tissue and the level of ammonia in the environment can cause or contribute to eye and respiratory problems and cause olfactory discomfort (Ledger & Mellor, 2018; Merck et al., 2013a) Humans can detect ammonia gas at levels starting at 5ppm with irritation to eyes, nose, and throat beginning at 30ppm exposure for 10 min (National Research Council, 2008). The average airborne concentration permitted over an eight-hour working day is 25ppm (Worksafe, n.d.). Ammonia levels that are detectable to a human are too high for dog housing and remedial action needs to be taken. It should be noted that exposure to ammonia over time can reduce the ability of a person to detect it (Piccardo et al., 2022).

Food and water bowls should be washed daily with hot water and soap or detergent. Food and water bowls should be disinfected weekly, or when visibly soiled, and daily for dogs in a shelter, rescue, veterinary, temporary housing, or research, testing, or teaching locations (DeTar et al., 2022).

Cleaning and sanitation methods significantly impact dog health and welfare. It is unacceptable to spray primary enclosures while dogs are inside them as splattering or soaking dogs when spraying water, cleaning, or disinfection products can cause significant distress (DeTar et al., 2022). Dogs are sensitive to many chemicals, and great care needs to be exercised in achieving disinfection without introducing toxic substances or noxious odours into the dog's environment (DeTar et al., 2022; Koret Shelter Medicine Program, 2018).

Nonporous surfaces are important in cages and kennels. Adequate drainage, including ensuring drains are kept clear from debris, will assist with keeping kennels and runs clean. Drains in dog's housing areas need to be covered and inaccessible to the dog and designed to avoid dogs' claws or paws from becoming caught. Design of drainage systems should be such that standing water and cross-contamination of waste between housing units is prevented (DeTar et al., 2022).

Kennel and run surfaces can be kept clean by removing gross organic matter (e.g. faeces, urine, uneaten food, biofilm), and other items, followed by cleaning and disinfection. Soap or detergent along with physical scrubbing is required to remove organic matter that adheres to surfaces; heavily used areas should then be disinfected. Allowing the recommended contact time for the disinfectant product and ensuring surfaces are completely dry is important for effective disinfection to ensure reduction in pathogens (DeTar et al., 2022; Koret Shelter Medicine Program, 2018).

PART 6:
Breeding

6.1 Breeding: Minimum Standard No. 12

National dog breeding organisations and local affiliated clubs exist in New Zealand. These breeding clubs and organisations in New Zealand can promote best practice, through standards and codes of ethics, that ensure the health and welfare of breeding animals and those that are bred for sale, rehoming or other transfer of ownership. Ensuring members adhere to ethical standards and meet competency requirements for providing care for dogs used for breeding is important for dog welfare (Croney, 2019).

Breeder registration is considered important for protecting the welfare of dogs involved by driving adherence with animal welfare standards and improving record keeping of inheritable welfare problems (European Platform on Animal Welfare, 2020; Fossati & Ruffo, 2021).

The scent produced by bitches during oestrus can attract dogs from far away. Facilities should be available to securely separate (including from visual, auditory and where possible olfactory cues) male dogs from bitches in oestrus, to avoid frustration (European Platform on Animal Welfare, 2020) and prevent accidental mating.

If an accidental mating has taken place, veterinarians can provide advice on managing (including terminating) an unwanted pregnancy. Depending on the breed, bitches as young as six months of age may become pregnant but this often results in negative outcomes for both dam and litter (Dejneka et al., 2020).

The availability of new homes for puppies needs to be considered before breeding occurs. Ensuring that there are homes for the puppies is part of the breeder's obligations to ensure the welfare of all puppies purposely bred (England, 2012a; European Platform on Animal Welfare, 2020).

Bitches that are overweight or obese may be predisposed to birthing difficulties (European Platform on Animal Welfare, 2020).

Some canine behaviour traits (e.g. compulsive behaviours, anxiety) appear to be heritable (Salonen et al., 2020; Tiira & Lohi, 2015). The development of behaviour traits is complex and may involve a combination of factors including genetics, epigenetic modifications due to stress during pregnancy, and early life experiences (maternal care and behaviour). The Companion Animal Veterinarians' Breeder Toolkit advises that only dogs of favourable temperament should be used for breeding (Companion Animal Veterinarians, n.d.).

Bitch and stud dog introductions must be carefully planned and closely monitored to ensure both are protected from injury or disease (England, 2012b; European Platform on Animal Welfare, 2020). Following mating both the bitch and dog should be carefully checked for signs of injury. Veterinary advice should be sought and followed if necessary (European Platform on Animal Welfare, 2020).

Responsible breeding includes considerations for the welfare of parents and offspring, avoiding unnecessary pain or suffering from inherited problems, avoiding extreme body types and impairments in organ function, reproduction, locomotion, and behaviour. Genetic disease can be painful, reduce lifespan, and require veterinary treatment (Canine and Feline Sector Group, 2020). The World Small Animal Veterinary Association (WSAVA) recommends breeders select animals that can reproduce naturally and exclude those that have anatomical characteristics which predispose them to hereditary disease, such as extreme conformations (e.g. size, skin folds, angulation and brachycephaly) (World Small Animal Veterinary Association, n.d.).

National breeding clubs and organisations operate schemes which enable early detection and identification of common inherited disorders (recommended tests from Dogs NZ include DNA sampling, cardiac and eye certification, along with orthopaedic assessments through radiographs and examinations) (Companion Animal Veterinarians, n.d.). Schemes allow breeders to screen their dogs for a range of inherited diseases, helping them to make informed and responsible breeding decisions (British Veterinary Association, n.d.). Breeders should research and test wherever possible to gain as much information as they can about both the stud dog and bitch before any mating is carried out.

Indiscriminate breeding without regard to inherited welfare problems can compromise dog welfare due to the potential for increased risk of clinical disease. Companion Animal Veterinarians Branch of the New Zealand Veterinary Association state that "in general, it is not advised to breed animals that have: genetic disorders associated with diseases with high heritability that are detrimental to the animal's health and welfare diseases with low heritability but which severely compromise an animal's health and welfare" (Companion Animal Veterinarians, n.d.).

An extensive list of welfare problems by breed can be found online at www.dogbreedhealth.com.

Increasingly available information about welfare compromise in breeds with extreme conformation has not decreased their popularity (Sandøe et al., 2017), suggesting that for some prospective owners physical appearance may be of greater importance in deciding to acquire a specific breed than evidenced welfare compromise (Packer et al., 2019).

Those interested in dog breeding should be well informed about what is involved before they start and consider how they will manage the challenges and problems that may arise (England, 2012a). The welfare of breeding dogs and their puppies depends on the care and environment provided. There should be sufficient competent adult human carers available to care for dogs and puppies (European Platform on Animal Welfare, 2020).

The level of inbreeding within dog breeds is considered extremely high comparative to other species (Bannasch et al., 2021). Close inbreeding has a negative effect on litter size and neonatal survival (Leroy et al., 2015). Bannash et al (2021) found that recent crossbreds, such as the Tamaskan Dog, Barbet and Australian Labradoodle, as well as landrace breeds (Danish-Swedish Farmdog, Mudi and Koolie) demonstrate that it is possible to have a consistent breed type without inbreeding and concluded that careful management of dog breeding populations to avoid additional loss of existing genetic diversity within breeds, (through breeder education and monitoring of inbreeding levels) is essential. Deliberate breeding of father-daughter, mother-son or brother-sister should not occur and is not supported by national breeder organisations (Dogs New Zealand, n.d.; The Kennel Club (UK), n.d.).

6.2 Desexing: No Minimum Standard

Responsible dog ownership includes desexing of dogs not registered for breeding to avoid accidental mating and reproductive health issues (American Veterinary Medical Association, 2016). The widespread recommendation for performing routine desexing is based on advocating for the welfare of the animal as well as the general canine population by reducing the incidence of certain medical problems and minimising contributions to the unwanted animal population (Houlihan, 2017). Veterinarians can advise on the best age to desex a dog (British Veterinary Association, 2019; New Zealand Veterinary Association, 2018a)

Direct medical benefits of desexing outweigh any welfare implications (BVA, 2019) and include:

- Increased lifespan (Houlihan, 2017; Urfer & Kaeberlein, 2019) – although it is worth noting that this is a common correlation rather than a direct causation; desexing may be a proxy for better care as it reduces or eliminates common life-limiting reproductive diseases thereby extending lifespan.
- No false pregnancies, which are common after each season and can result in distress to the bitch. A bitch undergoing false pregnancy may produce milk, lose her appetite and behave adversely (British Veterinary Association, 2019).
- Elimination of infections and cancers of the reproductive system including:
    - Pyometra. Undesexed bitches can develop pyometra later in life, which then requires lifesaving surgery (British Veterinary Association, 2019). The reported risk of developing pyometra ranges

from 19-55 % in bitches over 9-10 years of age (see Howe, 2015; Urfer & Kaeberlein, 2019 for reviews). Desexing a healthy bitch does not involve the same risks as desexing an older bitch with toxaemia arising from the pyometra. Therapeutic desexing for pyometra (or other reproductive cancers) carries a 10 % mortality risk comparative to a 0.009 % mortality risk for elective desexing at any age (Shoop-Worrall et al., 2022).

> Mammary neoplasia. Exposure of mammary tissues to female hormones is important for the aetiology of mammary neoplasia (Edmunds et al., 2023). Although one paper has questioned the strength of evidence supporting the association between desexing and mammary tumour risk of earlier scientific studies (Beauvais et al., 2012), the data overall is consistent with desexing at a younger age substantially reducing mammary tumour risk (Beaudu-Lange et al., 2021; Edmunds et al., 2023; Howe, 2015; Stavisky & White, 2022; Urfer & Kaeberlein, 2019; Varney et al., 2023). There is no current scientific evidence to support the view that the spaying of bitches should take place after the first season (British Veterinary Association, 2019), nor is there benefit to a bitch from having a litter of puppies before being desexed (England, 2012b).

- Testicular tumours. Reduces perianal adenoma and prostatic hyperplasia (British Veterinary Association, 2019; see Urfer & Kaeberlein, 2019 for a review).
- Oestrus prevented: Oestrus (season or "heat") occurs about every six months in entire bitches. During this time bitches must be kept away from other dogs and walked under close supervision (British Veterinary Association, 2019).
- It may limit straying, particularly in response to bitches in season, which causes nuisance and unwanted litters (British Veterinary Association, 2019; Urfer & Kaeberlein, 2019).
- It may reduce excessive and unacceptable sexual behaviour towards bitches, people and inanimate objects (Urfer & Kaeberlein, 2019).

Desexing can be safely carried out at a young age (as early as six weeks) and is typically a faster procedure with a quicker recovery time (Howe, 2015). Desexing before 3 months of age is generally performed in situations where re-homing with future population control is of the highest priority (American Veterinary Medical Assocation, n.d.; Association of Shelter Veterinarians, 2020; DeTar et al., 2022; Griffin et al., 2016).

To date the scientific literature does not support a clear and causal link between early desexing and serious health consequences. The British Veterinary Association states there is insufficient scientific data available to form a position on the early neutering of dogs and bitches (British Veterinary Association, 2019).

The controversy surrounding early age desexing is fuelled by the many areas of conflicting information within the desexing literature. Most studies investigating risk of desexing involve retrospective analysis of hospital records and often highlight correlations, yet the majority of the correlations reported are weak or biased towards specific breeds or populations of dogs (for a review see Houlihan., 2017). Even more concerning is the common misconstrued interpretation of a correlation to mean a causal relationship by those reading and interpreting the literature.

Desexing at a young age does not stunt growth but may delay the closure of growth plates if it occurs before sexual maturity. Desexing before puberty prevents circulating sex hormones which influence plate closure. Growth plates in dogs close between 8-12 months (Kilborn et al., 2002) and there is no evidence of growth plates remaining open in dogs aged 18 months.

Delaying desexing until after skeletal maturity will not prevent developmental joint disease such as hip or elbow dysplasia or cruciate ligament injuries. Cruciate ligament injuries typically develop in skeletally mature dogs and the risk of development is strongly correlated to excess bodyweight (Adams et al.,

2011). Cruciate ligament injuries are not developmental joint diseases and there is no causal link between early age desexing and cruciate injury. Hip dysplasia, elbow dysplasia, or cruciate ligament injury are not inherently life-threatening conditions (Houlihan, 2017). Comparison of outcomes for shelter dogs desexed before or after 24 weeks of age revealed no association between age at desexing and frequency of musculoskeletal problems during the four years after desexing. A few dogs developed hip dysplasia, but they did not require surgical or prolonged medical management (Howe et al., 2001). The low incidence and severity of orthopaedic problems in prepubertally desexed dogs supports the case for early-age desexing (Houlihan, 2017).

However, a recent and frequently cited, open access paper, concluded that desexing does increase the risk of joint disease (Hart et al., 2020). This research was based on retrospective analysis of specialist veterinary teaching hospital records where the number of canine patients with joint disorders, was disproportionately higher than the general dog population. The conclusions drawn in this paper therefore should not be extrapolated to the general dog population. This same study grouped developmental joint disorders with non-developmental joint disorders and drew nonsensical recommendations to delay desexing until after skeletal maturity in particular breeds. For example, the recommendation to wait until 24 months in certain breeds before desexing will not prevent hip dysplasia and elbow disease as these developmental joint disorders are trigged prior to skeletal maturity and have two well established causal factors; genetics (Bliss et al., 2002) and overfeeding (Lawler et al., 2008). When evaluating the literature, findings from retrospective studies, from small populations in teaching hospitals, or from specific dog breeds should not be extrapolated to all dogs (Association of Shelter Veterinarians, 2020).

Desexing is associated with an increased the risk of urinary incontinence in bitches but how this relates to age at desexing is still uncertain (British Veterinary Association, 2019; Howe, 2015; Pegram et al., 2019). Desexing females between four and six months of age does not appear to increase the risk for urinary incontinence, compared with the risk for those desexed after the first oestrus (de Bleser et al., 2011; Spain et al., 2004).

Desexed dogs of all ages may experience weight gain after desexing, and this can be controlled by appropriate diet and exercise (British Veterinary Association, 2019; Houlihan, 2017).

When it comes to interpreting the research that suggests there is an increased risk of cancer associated with desexing, caution should be applied as desexed dogs live longer lives and age is the greatest risk factor for cancer (Howe, 2015).

There is no clear causal link between desexing and an increase in negative behaviours. As may be expected, research shows a link between desexing and reduction of libido and sexual behaviours in male dogs (Roulaux et al., 2023; Urfer & Kaeberlein, 2019). However, the research exploring links between desexing and other behaviours is inconsistent, with often contradictory results and reliant on correlations, so results of individual studies should be interpreted with caution (D'Onise et al., 2017; McGreevy et al., 2018; Urfer & Kaeberlein, 2019). As dogs may be desexed as an attempt to remedy behavioural problems, it is possible desexed dogs showed undesirable behaviour before surgery but failed to sufficiently improve after surgery. Studies of impacts of behaviour on desexing frequently rely on surveys of convenience samples of dog owners, which may introduce selection bias as it is likely that those choosing to complete the survey may be more engaged with issues surrounding problematic behaviours generally and may also have different views about the timing of castration when compared with companion dog owners as a whole.

Although desexing is the preferable option, bitches can be prevented from coming into heat by using pharmaceutical products which may be obtained after consultation with a veterinarian (British Veterinary

Association, 2019). Similarly, there are pharmaceutical products which can be used to achieve temporary chemical castration of male dogs which may be obtained after consultation with a veterinarian (Urfer & Kaeberlein, 2019).

6.3 Bitches in Heat, Mating, and Artificial Insemination (AI): Minimum Standard No. 13

For dog breeders, expert advice should be sought and then consideration given to the frequency at which dogs are used for breeding and the age at which breeding commences and ends. Decisions to breed a bitch should include consideration of age, skeletal maturity, number of previous litters, and the delivery method of previous litters (Companion Animal Veterinarians, n.d.).

Bitches generally come into heat (oestrus) at intervals of about six to twelve months. Each heat period lasts approximately three weeks (England, 2012b). To capitalise on peak fertility and general health, bitches should begin breeding once sexually and skeletally mature and after the first oestrus (Candiani et al., 2023; Companion Animal Veterinarians, n.d.).

Bitches younger than 18 months of age should not be bred (Candiani et al., 2023; European Platform on Animal Welfare, 2020). Age of physical and sexual maturity varies with individual breed (Candiani et al., 2023). Skeletal maturity may be as early as ten months in smaller breeds while in large breeds it may not occur until 16 to 18 months. Breeders need to ensure that a dog is physically mature before they are used for breeding and should not be mated before they have reached skeletal maturity to safeguard their and their puppies' welfare (Candiani et al., 2023). Growth will be impacted in bitches breed before they reach skeletal maturity or when bred at the first oestrus due to the energetic demand of pregnancy (Candiani et al., 2023), and they are at higher risk of dystocia (Candiani et al., 2023; Dejneka et al., 2020) and neonatal mortality (Candiani et al., 2023; Tønnessen et al., 2012).

Increasing age is linked to reduced fertility, lower pregnancy rates and litter sizes (Candiani et al., 2023). Older bitches experience uterine inertia more commonly than younger bitches (Forsberg & Persson, 2007; Tønnessen et al., 2012) which requires veterinary intervention at whelping more frequently (Companion Animal Veterinarians, n.d.). The recommended age of breeding retirement is six years (Companion Animal Veterinarians, n.d.).

There is no scientific evidence to suggest a minimum period of 12 months between two whelpings. The Companion Animal Veterinarians New Zealand Breeder's toolkit recommends bitches should have three litters in a two-year period (Companion Animal Veterinarians, n.d.). Bitches that experience heat cycles without being pregnant are at increased risk of developing uterine disease. The hormonal environment created after a non-pregnant oetrus cycle predisposes the uterus to develop pyometra (Candiani et al., 2023; Companion Animal Veterinarians, n.d.). The frequency of pregnancy should still be controlled and bitch welfare considered. Physical exhaustion of the bitch is dependent on her physical state and should be checked before breeding through assessment of general health, age and body condition score (Candiani et al., 2023; Companion Animal Veterinarians, n.d.). The maximum number of litters a female dog should have, in order to maintain her own health and welfare has not been definitively determined. Companion Animal Veterinarians branch of the New Zealand Veterinary Association suggests a limit of three litters per dog (Companion Animal Veterinarians, n.d.), whilst the EU Platform on Animal Welfare states bitches must not give birth to more than four litters in her lifetime (Dogs New Zealand, n.d.; European Platform on Animal Welfare, 2020).

When the female breeding dog has had her final planned litter, it is recommended that she is desexed to avoid the risks associated with unmated cycles causing pyometra (Companion Animal Veterinarians, n.d.).

Commencing breeding after the first oetrus and limiting the number of litters to three or less before being retired will greatly increase the chances of the bitch being rehomed (Companion Animal Veterinarians, n.d.).

Puppies should be bred and reared without compromising either the parent or puppies' welfare at any stage. Where surgeries are planned as part of breeding (e.g. caesarean), there are welfare risks associated with anaesthesia and surgeries (Conze et al., 2020). NZVA Breeders' toolkit recommends that repeated caesarean sections are avoided due to these negative welfare impacts (Companion Animal Veterinarians, n.d.). Measures breeders may take (such as selecting for smaller heads and wider pelvises) that reduce the dependence on Caesarean section are encouraged.

Bitches that have had a caesarean section should not be bred from again unless a veterinarian certifies that it will not compromise the welfare of the bitch to do so (Candiani et al., 2023; European Platform on Animal Welfare, 2020). The New Zealand Veterinary Association's ethical guide to buying a puppy or dog cautions potential purchasers to avoid breeders who subject their bitches to multiple caesarean sections, recommending that the mother shouldn't have had more than two (New Zealand Veterinary Association, n.d.).

Breeding dogs should be routinely vaccinated (European Platform on Animal Welfare, 2020). Bitches and puppies should be treated for internal and external parasites at an appropriate age and interval as directed by a veterinarian. Administration advice provided by the veterinarian must be carefully adhered to as inappropriate treatment can be harmful to puppies (Canine and Feline Sector Group, 2020; England, 2012b; European Platform on Animal Welfare, 2020).

Artificial insemination (AI) is a technique used to enable dogs to become pregnant without a natural mating. Artificial insemination (AI) allows the use of semen from stud dogs worldwide, eliminating the need to transport dogs for breeding and increasing the pool of potential stud dogs. Artificial insemination (AI) also reduces some of the potential risks associated with natural mating (Quartuccio et al., 2020; The Kennel Club (UK), n.d.-a).

Use of artificial insemination (AI) should be carefully considered to avoid unintended welfare consequences. Overuse of male studs may spread unseen genetic faults throughout the breed and will have an impact on genetic diversity and inbreeding (Quartuccio et al., 2020; The Kennel Club (UK), n.d.-a). Artificial insemination should not be used as a default or to overcome problems due to the inability of the dogs to mate naturally (European Platform on Animal Welfare, 2020). Dogs who cannot be bred via natural mating due to health or conformation reasons should not be bred using artificial insemination (AI) as these genes may be passed onto their puppies, possibly affecting the health and welfare of future dogs (European Platform on Animal Welfare, 2020).

Non-surgical artificial insemination methods include transvaginal or transcervical insemination. Non-surgical artificial insemination methods do not require general anaesthesia or surgery and can be completed in a few minutes by a competent operator (Australian Veterinary Association, 2022b; Mason, 2018). Surgical artificial insemination involves general anaesthesia of the animal, removing the uterus, introduction of semen into the uterus, replacement of the uterus, and closure of the surgical site (Australian Veterinary Association, 2022b; Mason, 2018).

A recent trend for "canine fertility clinics" in the United Kingdom led the Royal College of Veterinary Surgeons to update their guidance on transvaginal insemination (RCVS Standards Committee, 2023; Scottish Government, 2023). Intravaginal insemination is now limited to veterinarians or veterinary nurses, with only veterinarians permitted to perform transcervical inseminations (surgical artificial insemination is not permitted) (RCVS Standards Committee, 2023).

Surgical artificial insemination has been banned in several countries (e.g. Sweden, Norway, Scotland, England and Wales). Ethical concerns about this practice have been raised (Arlt & Øvregaard, 2022; Australian Veterinary Association, 2022b; England & Millar, 2008; Quartuccio et al., 2020). A recent European study of 83 veterinary surgeons in 2022 found 80% working in assisted reproduction in dogs felt significant ethical conflict related to the practices some breeders requested (Arlt & Øvregaard, 2022). While most respondents (79.2 %) found it ethical to perform artificial insemination in dogs who had not reproduced naturally before, 62.7% of participants stated that surgical insemination is not ethical. The Australian Veterinary Association states that surgical insemination must not be performed in dogs due to ethical and welfare considerations and the availability of a suitable alternative, transcervical insemination (Australian Veterinary Association, 2022b). Further, this organisation recommends a phase out of use of surgical insemination by veterinarians by 1 January 2024 (Australian Veterinary Association, 2022b). Transcervical insemination has comparable (or higher) success rates with frozen semen to surgical insemination and has fewer associated welfare risks (Mason, 2018; Mason & Rous, 2014; Romagnoli & Lopate, 2014).

Transcervical insemination is possible in dog breeds of all sizes (Romagnoli & Lopate, 2014). A prospective cohort study of over 1,000 individual bitches, representing 84 different breeds, found that only seven of 1103 (<0.6 %) intrauterine inseminations were not possible via transcervical insemination (Hollinshead & Hanlon, 2017). When performed by trained operators, transcervical insemination is typically completed in a few minutes, without the risks associated with anaesthesia and surgery. While sedation may be used in some cases, this procedure is typically performed with no need for sedation.

6.4 Pregnancy and Whelping: Minimum Standard No. 14

The length of gestation in the dog is about 62- 65 +/- 1 days (Candiani et al., 2023; England, 2012b). Prior to whelping, bitches may become restless and reclusive and seek out places that are quiet and private (England, 2012b).

Pregnant dogs should be provided access to a whelping area one to two weeks prior to whelping so they can become familiar with the area (England, 2012b). A whelping box should be provided before whelping and the bedding material should be replaced after whelping has taken place. The whelping area or box will need to have ongoing provision of comfortable fresh bedding to maintain hygiene (England, 2012b), and be in quiet and safe place away from humans or other pets (Canine and Feline Sector Group, 2020).

Bitches who are due to give birth should be supervised and checked regularly (Canine and Feline Sector Group, 2020). The bitch can exhibit a sharp drop in body temperature 12-24 hours before whelping. Monitoring the bitch's temperature during the last days of pregnancy can give an indication of when whelping may begin, however a temperature drop does not always occur and so cannot be relied upon as an indicator (England, 2012b).

Newborn puppies require frequent checks to ensure they are feeding, warm and there are no apparent health concerns (England, 2012b). People need to practice good hygiene, such as frequent hand washing, to minimise the spread of pathogens to the bitch and puppies (England, 2012b). For their safety, puppies' movements should be restricted by keeping them within a pen enclosure for the first several weeks of their life (Canine and Feline Sector Group, 2020).

Dogs should be monitored to ensure they are not having difficulty birthing (dystocia) (England, 2012b; European Platform on Animal Welfare, 2020).

Complications during whelping may sometimes occur. Monitoring of bitches is important to assist with timely detection of whelping difficulties and appropriate intervention. A veterinarian should be available on

call if needed in an emergency. Dystocia is a medical emergency and signs include prolonged contractions and straining for over an hour that does not progress, dark green discharge from the vagina, the bitch appears exhausted, restless, or has stopped trying to give birth (England, 2012a; von Heimendahl & Cariou, 2009).

6.5 Lactation and Weaning: Minimum Standard No. 15

Puppies rely on a bitch's milk to obtain all nutrients for the first few weeks of life (Debraekeleer et al., 2010b). Early milk (colostrum) provides puppies with some protection from disease and reduces mortality in puppies (Debraekeleer et al., 2010b; England, 2012b; European Platform on Animal Welfare, 2020). Puppies should be regularly monitored to ensure they are getting enough milk to steadily gain weight (European Platform on Animal Welfare, 2020). Puppies should be weighed shortly after birth (provided the bitch is content for puppies to be handled), and then daily for the first two weeks of life (Debraekeleer et al., 2010b; England, 2012b). From two weeks of age puppies should be weighed weekly (and weights recorded) until homing (European Platform on Animal Welfare, 2020). Daily weight gain should average about 5% of the puppy's current body weight during the first four weeks after parturition (Debraekeleer et al., 2010b).

From three to four weeks of age, puppies spend more time exploring their immediate environment and less time with the bitch. At this stage solid food can be introduced and the bitch may begin to seek time alone (Debraekeleer et al., 2010b; England, 2012b). Puppies can be offered a gruel (e.g. blended moist growth food with warm water) to stimulate food intake from three weeks of age. Nursing is an important stimulus for milk production and milk production will progressively decline as the puppies' intake of solid food increases (Debraekeleer et al., 2010b).

Some bitches may reject puppies, show maternal aggression (aggression towards their puppies), or otherwise require intervention. Veterinarians can provide advice in relation to large litters where puppies may need supplementary feeding from a very young age or where puppies are rejected or orphaned (Debraekeleer et al., 2010b; European Platform on Animal Welfare, 2020).

Puppies will become more active, start eating solid food, and begin the weaning process by three to four weeks of age and bitches will usually begin restricting access to themselves at four to five weeks. Weaning is usually completed by six to eight weeks (i.e. the puppy feeds entirely on solid food) (England, 2012b). Separation opportunities for the bitch should be available and increase as the puppies get older. There should be an area available for the bitch to allow her to rest and relax away from her puppies as she chooses (England, 2012b) The bitch should be offered short walks and toileting opportunities four times a day away from her puppies (Canine and Feline Sector Group, 2020).

Weaning should be gradual to reduce the stress on the puppies and the bitch (Debraekeleer et al., 2010b). Puppies should be completely weaned onto solid food by six to eight weeks of age, and for one week before they are rehomed (European Platform on Animal Welfare, 2020). As a minimum, it is recommended that puppies under eight weeks of age be fed four to five times daily (England, 2012b; European Platform on Animal Welfare, 2020).

The weaning period is very stressful for puppies due to changes in food and environment (Debraekeleer et al., 2010b). Ensuring puppies are completely weaned onto solid food before rehoming will help minimise stressors and avoid premature separation from the mother during their sensitive socialisation period (approximately 3 to 12 weeks of age).

6.6 Removal of Puppies from the Bitches and Supply of Puppies and Dogs: Minimum Standard No. 16

It is important for a puppy's welfare to remain with the bitch and litter until eight weeks of age (McMillan, 2017). This reduces the risk of development of behaviour problems (European Platform on Animal Welfare, 2020). Puppies that are weaned and removed from the bitch and their littermates too early, may experience welfare compromise and miss out on important experiences that positively shape their ability to cope with new experiences later in life and predisposes them to the development of behavioural disorders (European Platform on Animal Welfare, 2020; McMillan, 2017). Puppies should be prepared for separation from the bitch and litter mates before homing from six weeks of age, though short periods of separation. Positive interactions with people should take place during these separations and puppies should never be left on their own during these separations (European Platform on Animal Welfare, 2020).

All dogs can have health problems however some dogs are more prone to diseases that are linked to their conformation than others whether they are pedigree, non-pedigree or crossbreeds (Canine and Feline Sector Group, 2020). Dogs should be able to breathe, walk, hear and see freely without discomfort (The Kennel Club (UK), n.d.). Some exaggerated conformations can lead to health problems, such as skin infections, eye problems or breathing difficulties, pain and reduced lifespan (Canine and Feline Sector Group, 2020).

A dog's poor health can also adversely affect the human animal bond (HAB) and the dog's integration as a pet into family life. Some affected dogs may require increased levels of care. These increased health problems and care requirements will result in an increase in expense for the owner, including veterinary care costs and potentially the relinquishment or euthanasia of the dog (Canine and Feline Sector Group, 2020; Coe et al., 2014). Those supplying dogs and puppies must inform potential companion animal owners about the medical, behavioural, welfare, and financial concerns associated with ownership of any dogs or puppy predisposed to inheritable and heritable welfare problems (Canine and Feline Sector Group, 2020).

Appropriate and positive socialisation is essential to ensure puppies become well-rounded, confident and resilient adult dogs (AVSAB, 2008; Canine and Feline Sector Group, 2020). Early environment strongly influences the emotional stability of puppies (Gazzano et al., 2008). Between the ages of three to 12 weeks, puppies go through a sensitive socialisation period. As this sensitive socialisation period begins before puppies are old enough to leave their mother, breeders have a responsibility to ensure that puppies experience positive, gradual exposure to experiences (Canine and Feline Sector Group, 2020).

A positive socialisation program will help to prepare puppies for life in their new home and reduce the risk of development of future behaviour problems (AVSAB, 2008; Canine and Feline Sector Group, 2020; Eurogroup for Animals Cats and Dogs, 2022). Sufficient, but not excessive, handling of young puppies from birth will help them to socialise to people and households, is advantageous to the emotional development and welfare of the puppy and will later help them adjust to a new home (Eurogroup for Animals Cats and Dogs, 2022; Gazzano et al., 2008). By the age of three weeks, puppies should begin exposure to new items such as dog toys, surfaces, materials, and household noises. They should be encouraged to explore, investigate and manipulate their environments (AVSAB, 2008). Between three and 12 weeks of age puppies are particularly receptive to experiences that they find positive, learning to accept them as 'normal', non-threatening and rewarding. They are equally sensitive to negative experiences, learning to avoid anything they find frightening or painful (Eurogroup for Animals Cats and Dogs, 2022).

Puppies that have been appropriately socialised with people and other animals, and to the household and external environment, are more likely to develop into confident, friendly adult dogs that can cope with

future challenges (Eurogroup for Animals Cats and Dogs, 2022). Unfortunately, puppies that have been inadequately socialised to people and do not experience physically enriched early rearing environments are predisposed to develop fear or aggression related behavioural problems that negatively impacts their quality of life (Eurogroup for Animals Cats and Dogs, 2022).

PART 7:
Health

7.1 Ill Health and Injury: Minimum Standard No. 17

An annual veterinary health check is recommended for all dogs, during which the importance of dental care, proper nutrition, appropriate diagnostic testing and the control of parasites and of zoonotic diseases, and vaccination requirements can be discussed and addressed (Day et al., 2016). These visits are tailored to the life stage of the pet (for example, puppy or senior care requirements). The environment in which a dog resides can profoundly affect its health status and should be assessed during annual health care visits in order to define risk factors and develop appropriate preventive health measures (Day et al., 2016).

- Owners or persons in charge of dogs have obligations under the Act for ensuring the dog's health is protected including:
- Ensuring they are meeting the physical, health, and behavioural needs of their animals (Part 1, section 10).

Ensuring an animal that is ill or injured receives treatment that alleviates any unreasonable or unnecessary pain or distress being suffered by the animal (Part 1, section 11).

Pain, physical or mental distress, and deteriorating health are recognised as a serious welfare harm to animals and must be treated as needed (Gruen et al., 2022; Monteiro et al., 2023).

Dogs that are experiencing acute or chronic pain show a range of behaviour changes. There are several tools available for the assessment of acute and chronic pain including physical examination, clinical observation, measurement of physiological variables, wound palpation, observations of photos or videos, and activity monitoring, in addition to metrology instruments such as pain scales (Gruen et al., 2022; Monteiro et al., 2023).

Validated tools to assess acute and chronic include:

- Glasgow Short Form (acute)
- Canine Brief Pain Inventory (CBPI) (chronic)
- Helsinki Chronic Pain index (chronic)
- Health related quality of life (HRQoL) (chronic)
- Canine osteoarthritis staging tool (COAST)

Veterinary philosophy of managing pain has shifted towards proactive pain management (Gruen et al., 2022; Monteiro et al., 2022). This indicates the need for progressive standards that are explicit in conveying expectations of owners and persons in charge of dogs the requirement to address pain sooner rather than later. Owner recognition of pain in dogs can be difficult due to a need to shift in owner perception to appreciate

the potential for chronic pain to develop even at a young age (Gruen et al., 2022), therefore, minimum standards specifying signs of pain that require veterinary attention are needed. Signs of pain in dogs include (Matthews et al., 2014):

- Change in posture or body position
- Change in demeanour (e.g. lethargic, depressed, anxious, distressed, dull, sad)
- Vocalisation
- Altered reaction to touch
- Altered interaction with people (e.g. reduced interaction, aggression)
- Altered mobility (e.g. lameness, reluctance to move)
- Reduction in appetite
- Comfort levels (e.g. stiffness, lameness)

Some emergencies that require immediate veterinary care include: severe pain, severe uncontrolled bleeding, difficulty breathing, heat stroke, rapid, significant and unexplained weight loss (Linklater, 2021).

Uncontrolled, profuse bleeding can be a result of serious injury or disease and requires immediate veterinary care to prevent further deterioration of health and death (Linklater, 2021; Linklater & Hanson, 2020).

Difficulty breathing can be a result of several conditions and is considered a serious welfare harm (Beausoleil & Mellor, 2015; Linklater, 2021)

Dogs that have rapidly lost weight must receive veterinary care as this can be a sign of underlying health problems (Brooks et al., 2014). Dogs showing signs of heat stress should have access to water and be placed in a cool, shaded area. Heat stroke may occur when the ambient temperature overcomes the dog's ability to dissipate heat. Heat stroke is a medical emergency and requires veterinary care. Signs of heat stroke include appearance of confusion; uncoordinated/wobbly on their feet; bright red tongue or dark gums; difficulty breathing; tremors, seizures; and diarrhoea/vomiting (Johnson et al., 2006). A retrospective study of heatstroke in dogs in the UK showed that animals over 12 years of age, especially those belonging to brachycephalic breeds, are at greater risk of heat-related diseases and heatstroke and have a reduced capacity to dissipate heat (Hall et al., 2020).

When in pain or distressed, and whether familiar or not, an injured dog may bite during attempts to assist them. An appropriate muzzle that allows the dog to open their mouth for normal breathing, panting, drinking, and vomiting, should be considered to prevent biting. If an injured dog is unable to walk and needs to be moved, a blanket or similar can be used as a stretcher to minimise movement of the body and reduce the risk of exacerbating serious injuries (Linklater, 2021). If the owner cannot be found within a short period of time, the injured dog should be presented to a veterinarian.

7.2 Prevention and Management of Infectious Diseases: Minimum Standard No. 18

Vaccination plays an important preventative role in controlling infectious diseases such as parvovirus, distemper, hepatitis, leptospirosis and canine infectious respiratory disease complex (canine cough).

The risks of not vaccinating can be significant to the individual animals and to the larger population (Day et al., 2016). Vaccination of a large percentage of the population against specific canine diseases breaks or slows the chain of transmission of a disease (herd immunity). When herd immunity is high the

risk of infection decreases for all dogs, even those that are not vaccinated such as very young, pregnant, or immunocompromised animals or animals that had a previous adverse reaction to the same vaccine (American Veterinary Medical Association et al., n.d.).

Core vaccinations are those the World Small Animal Veterinary Association (WSAVA) considers all dogs throughout the world must receive, at the recommended intervals, to provide life-long protection against infectious diseases of global significance (Day et al., 2016). The core vaccines for the dog are those that confer protection against infection by canine distemper virus (CDV), canine adenovirus (CAV; types 1 and 2) and canine parvovirus type 2 (CPV-2) and its variants (Day et al., 2016).

Most puppies receive passive maternally-derived antibody (MDA) protection in the first weeks of life, but this wanes by 8-12 weeks of age (Day et al., 2016). The WSAVA Vaccination Guidelines Group recommends puppies receive an initial core vaccination at 6–8 weeks of age, then again every 2–4 weeks until 16 weeks of age older, with a booster vaccination at 6 months of age, and 3-yearly there after (Day et al., 2016).

Dogs that have responded to vaccination with modified live core vaccines maintain a solid immunity for many years in the absence of any repeat vaccination (Day et al., 2016). The WSAVA Vaccination Guidelines Group recommends that, following the 26-week or 52-week puppy booster vaccination, subsequent revaccination should be given at intervals of 3 years or longer. This does not apply to killed core vaccine or non-core vaccinations which require a shorter interval between boosters (Day et al., 2016). Veterinary advice needs to be sought regarding the most appropriate vaccination programme, as requirements vary depending on the disease, the age of the dog and the environment (Day et al., 2016). Titre testing for adult dogs may be used to assess their current level of protection against infectious disease and the need for booster vaccination (Day et al., 2016).

Dogs showing signs of an infectious disease must receive veterinary care for evaluation and treatment to reduce the risk of deteriorating health, spread to other animals, and minimise zoonotic disease transmission (Stull et al., 2018). Dogs with a suspected infectious disease must be isolated until diagnosis by a veterinarian or treatment determines them to be a low risk to the general population (DeTar et al., 2022).

Where dogs are kept in high-risk situations such as high stress environments, housed where there are dogs of unknown vaccination status, or housed with large numbers or dynamic populations of dog, a means of isolating contagious animals must be available (Stull et al., 2018). Allowing animals with severe infectious disease to remain in the general population is unacceptable. Isolation can be onsite or through placement in an appropriate facility, such as a veterinary clinic or foster home (DeTar et al., 2022). Where disease is present, cleaning and disinfection protocols for housing, bedding, and equipment that has been exposed to infected dogs must be followed to reduce pathogens (DeTar et al., 2022).

Other high-risk situations include, dog shows, dog parks, and neighbourhoods with low community vaccination rates (American Veterinary Medical Association, n.d.-a, n.d.-b).

Animal shelters and pounds are considered a high-risk environment due to being a high stress environment and housing a dynamic population of animals of unknown vaccination status and an earlier, more frequent, and longer course of vaccination is recommend (Day et al., 2016).

7.3 Prevention and Management of Parasitic Diseases: Minimum Standard No. 19

Prevention and treatment are important means of preventing discomfort and serious disease from external

and internal parasites in dogs (Companion Animal Parasite Council, 2022b; New Zealand Veterinary Association, 2018a).

External parasites that live on the skin of dogs include fleas, mites and lice. Their presence may be indicated by excessive grooming, scratching, pruritus, rubbing, fur loss, scabs, or scale (Companion Animal Parasite Council, 2017, 2019a, 2019b, 2023). Fleas or flea dirt (black coils that turn red when moistened with water) may also be seen in the coat (Companion Animal Parasite Council, 2017).

Ticks are prevalent in some parts of the country.

Long-haired dogs may have more difficulty with external parasites if their fur becomes matted through lack of grooming. Dogs can develop hypersensitivity to parasites and show extreme skin irritation, even with very low parasite numbers (Saunders, 2011).

Most of a flea's life cycle is spent, not on the dog, but in its environment, therefore carpets and bedding should be cleaned and/or treated (Carlotti & Jacobs, 2000; Companion Animal Parasite Council, 2017). Routine cleaning such as vacuuming kills fleas, their eggs, or larvae, (Carlotti & Jacobs, 2000). Effective treatment of fleas requires that all animals in the household are treated at the same time (Carlotti & Jacobs, 2000; Saunders, 2011).

The signs of mange, which is caused by mites, include hair loss, flaky skin, redness, sores and sometimes itchy skin (Saunders, 2011).

The ears of dogs, especially young dogs, should be checked regularly. An ear mite infestation may cause hair loss, flaky skin, redness, scratching of the ears, and a dark-brown discharge inside the ears (Saunders, 2011).

Internal parasites, such as intestinal worms, are a common disease problem and public health risk. Regular monitoring and worming prevents infestation. Internal parasites are particularly prevalent in young dogs or puppies (England, 2012b). Loss of body weight plus a tendency to a prominent belly, dry coat and regular licking at the anus are signs that may indicate the presence of roundworms (Overgaauw & Nederland, 1997). Since bitches can transmit roundworms via their milk, all puppies should be regularly wormed with an effective roundworm treatment (Companion Animal Parasite Council, 2022a; England, 2012b). If there are indications that a dog is infested with internal parasites, this can be confirmed by faecal examination and then treated with an anthelmintic authorised by a veterinarian (Companion Animal Parasite Council, 2022a).

Crowded and unsanitary living conditions assist the spread of many parasites (Raza et al., 2018). Advice on the appropriate treatment of the environment and animals should be sought early from a veterinarian where there is an infestation of any parasite as treatment can be difficult in advanced cases.

Fly strike (Myiasis) is an infestation of living animals with fly larvae. Fly strike occurs when flies lay their eggs on moist skin or in wounds and these eggs hatch into maggots which secrete enzymes that breakdown the protein in skin and digest it (Saunders, 2011). Fly strike is more common where conditions are unsanitary, dogs are subjected to prolonged tethering or confinement, or dogs are unhealthy (e.g. with urine scald or matted coats that contain faeces) (Merck et al., 2013a).

Fly bite dermatitis is observed as erosions or ulcers at or near the ear tips or most dorsal area of the ear. These lesions can be intensely pruritic and result from biting flies. Fly bite dermatitis is common in dogs housed outdoors (Saunders, 2011).

7.4 Diseases of the Skin: Minimum Standard No. 20

The most common causes of skin allergies in dogs are atopic dermatitis (caused by hypersensitivity to environmental or dietary allergens) and flea allergy dermatitis (caused by hypersensitivity to fleas) (Saunders, 2011).

Atopic dermatitis (AD) is a common chronic relapsing pruritic (excessively itchy) skin disease that negatively impacts a dog's quality of life. It affects 10-15 % of dogs and requires veterinary treatment (Collins, n.d.; Olivry et al., 2010).

Flea-allergy dermatitis is a serious concern for animal health and welfare (British Veterinary Association et al., 2021). Dogs with flea-allergy dermatitis present with pruritic (excessively itchy), raised skin bumps and secondary symptoms including flaking skin, hair loss, lesions resulting from scratching, infection and inflammation of the skin, darker coloured or thickened areas of skin (Saunders, 2011).

Squamous cell carcinomas are the most frequently diagnosed carcinomas of the skin in dogs, with some caused by prolonged sun exposure (Villalobos, 2018). They usually develop on lower abdomen or near the pubic area in white-skinned, short-haired breeds. These areas are commonly affected by sun damage because the poorly haired skin offers minimal shielding from the sun, and many dogs enjoy sunning themselves lying on their backs (Villalobos, 2018). Preventive measures include keeping dogs out of sunlight at the height of the day, using sunblock if allowed outdoors, keeping the dog indoors during hours of peak sunlight, or using ultraviolet films on windows (Villalobos, 2018).

7.5 Diseases Transmissible to Humans (Zoonoses) - No Minimum Standard

Dogs transmit several viral and bacterial diseases as well as parasites to humans. Zoonotic diseases can be transmitted to humans by infected saliva, aerosols, contaminated urine or faeces and direct contact with the dog. Some parasites can pose a potential threat to human health particularly for very young, elderly, and immunosuppressed individuals. Zoonotic risks are increased by the fact that owners are often in very close contact with companion animals and share the same living areas (British Veterinary Association et al., 2021).

Salmonella and campylobacter are bacteria that live in the gastrointestinal tract of many animals including dogs. Salmonella is transmitted via faecal-oral route, whilst campylobacter is transmitted by direct contact with the dog or puppy, or with their urine or faeces (Ghasemzadeh & Namazi, 2015).

Common parasites that are transmissible between dogs and other species (including humans) include, ringworm, round worm, hook worm, and disease from mites and fleas (British Veterinary Association et al., 2021). These parasites have a varying degree of impact on humans from mild discomfort (flea bites), extremely uncomfortable itchiness (scabies mites), diarrhoea, vomiting, weight loss, through to rare cases of breathing difficulties, abdominal pain, blurred vision and seizures (roundworm) (British Veterinary Association et al., 2021). Preventive health treatments are readily used to prevent and treat common parasites such as fleas, ticks and worms, and prevent associated zoonotic transfer.

Concerns about the possible environmental impacts of small animal parasiticide products have been raised, with discussion highlighting the challenge of balancing environmental impact with therapeutic and prophylactic treatment that improves companion animal welfare and protects public health (British Veterinary Association et al., 2021). The British Veterinary Association (BVA), British Small Animal Veterinary Association (BSAVA) and British Veterinary Zoological Society (BVZS) encourage the veterinary profession and animal owners to take the concern regarding the environmental impacts seriously and responsibly use parasiticides (British Veterinary Association et al., 2021).

7.6 Care of Claws and Coat: Minimum Standard No. 21

All dogs benefit from regular grooming. Inadequate grooming can lead to pain and discomfort for the animal and other threats to animal health and wellbeing (McDonald et al., 2022). Long haired dogs may require regular clipping, or their hair tied back to ensure they can move freely and see where they are going, some dogs such as small, long-haired breeds and crosses are particularly vulnerable to matting (McDonald et al., 2022; Watson & Niestat, 2021). Chronically matted hair can contribute to and cause medical conditions such as skin irritation and infection, recurrent or chronic ear and ocular infections and disease, anal soiling and obstruction, faecal constipation and impaction, urine scalding, parasitic infestations and considerable distress (McDonald et al., 2022; Merck et al., 2013a; Watson & Niestat, 2021).

Grass seeds can penetrate the skin, ears, and between the toes of dogs (Hicks et al., 2016). Owners should regularly check dogs for grass seeds during the late summer period (Hicks et al., 2016).

Bathing dogs is generally not necessary if the dog is kept in a clean environment, but it can reduce odours that are unpleasant to humans.

Overgrown claws can alter the normal anatomic position and function of the feet and make walking uncomfortable or challenging (McDonald et al., 2022; Merck et al., 2013a). Overgrown claws may penetrate the paw pads on the underside of the feet, causing painful wounds (McDonald et al., 2022; Merck et al., 2013a).

Claw trimming can be a stressful experience for some dogs, negatively impacting their welfare (Edwards et al., 2022). Claws need careful trimming with sharp clippers or a dremel (nail grinder) taking care not to damage the quick of the nail (the nail bed) which will be painful and result in bleeding and possibly infection (Edwards et al., 2022).

Multiple barriers to maintaining coat and claw health have been identified (McDonald et al., 2022). Owners are typically less confident in trimming their dogs' claws in comparison to other aspects of grooming (McDonald et al., 2022). To reduce stress on the dog and owner, scratch pads or scratch boards (a board with sandpaper that the dog is trained to scratch) can be used to maintain claw length (Riemer et al., 2021).

Cooperative care techniques use reward-based training methods to encourage dogs to voluntarily participate in grooming (Jones, 2018; Riemer et al., 2021). Veterinarians, allied veterinary professionals, professional dog groomers, dog trainers, and breeders can provide assistance and advice on grooming and trimming claws.

7.7 Exercise: Minimum Standard No. 22

Daily exercise for dogs is important for both physical and mental health and is a basic care requirement (DeTar et al., 2022). Insufficient exercise can contribute to the development of behaviour problems and health issues such as obesity (Degeling et al., 2012; German et al., 2017; Menor-Campos et al., 2011; Protopopova et al., 2018; Wensley et al., 2021). Time out of the primary enclosure is one of the most effective means of reducing stress and frustration in kennelled dogs and reduces incidence of aggression and measures of stress (Arena et al., 2019; DeTar et al., 2022; Menor-Campos et al., 2011).

Exercise requirements vary between dogs. Over-exercising of growing dogs, especially those of larger breeds, may result in muscle or joint problems (Cavanaugh & Mills, n.d.).

Older dogs require relatively less exercise, but physical activity remains important for both health, mobility maintenance and mental stimulation (American Veterinary Medical Association, n.d.).

Regular exercise is important for dogs used for work, sport or hunting to maintain their fitness, especially during periods of little or no work.

Lactating bitches do not usually require regular exercise while their puppies are very young, although she should be taken out regularly to urinate and defecate and gentle exercise will encourage reduction of uterus and pushing out of uterine fluid (England, 2012b).

Exercise is usually a matter of walking and running on or off a leash, but dogs are also exercised in other ways, e.g. by swimming or using exercise equipment such as treadmills. Swimming may be of particular benefit to dogs with osteoarthritis or to support dogs' body weight as part of physiotherapy exercises but water temperature should be considered, particularly for smaller dogs, with 33°C being ideal (Nganvongpanit, Boonchai, et al., 2014; Nganvongpanit, Tanvisut, et al., 2014).

When exercising dogs beside a vehicle or push bike, care needs to be taken for the dog's fitness and safety. If using exercise equipment, such as treadmills, dogs should be gradually introduced to using the equipment using reward-based training methods (Stigall et al., 2022). Treadmills designed for use by humans are generally not suitable for use with dogs (Cornell University College of Veterinary Medicine, n.d.). Dogs should not be tethered to exercise equipment and need to be actively supervised at all times while using this equipment.

Exercise on hard surfaces such as tarmac and long working hours can lead to worn footpads, especially where dogs are unaccustomed to this (Rooney et al., 2009). Extremely hot surfaces, such as sandy beaches and hot asphalt in summer, will burn footpads.

7.8 Toxic and Harmful Substances: Minimum Standard No. 23

As natural scavengers, dogs are susceptible to accidental poisoning by many substances e.g. vertebrate pest baits, poisonous plants, recreational drugs, household cleaners, antifreeze, contents of rubbish bins and contaminated water (Cortinovis & Caloni, 2016; Fitzgerald et al., 2006; Lizarraga & Parton, 2021; Meenken & Booth, 1997). Dogs can also be poisoned by eating carcasses of poisoned animals (Meenken & Booth, 1997).

Care should be taken to prevent exposure to poisonous plants (indoor and outdoor), household and garden chemicals such as insecticides or fungicides, lead paints or objects, and timbers treated with arsenic.

Dogs are commonly poisoned by baits containing anti-coagulant poisons that prevent blood clotting that are laid to control rats, rabbits and possums, and by the carcasses of the poisoned animals. Slug bait poisoning is also common. It is important to know if pest control measures are being used in a dog's vicinity. Care should be taken to prevent access to slow moving water or water polluted with toxins such as sheep dip, horticultural sprays, antifreeze, algal blooms, etc.

Confirmed or suspected poisoning in dogs requires immediate veterinary care. Dogs should not be made to vomit, unless under veterinary advice, as this may cause further harm (Ensley, 2020). Clinical signs of poisoning may appear immediately or several days after ingestion.

Some poisons, such as 1080 and brodifacoum, can remain active for many months in the carcasses of poisoned rabbits, possums and other species (Meenken & Booth, 1997). Signs of 1080 poisoning include frenzied behaviour, fear and panic, howling, cowering which may rapidly progress to fits and death (Department of Conservation, n.d.). Signs of anti-coagulant poisoning may include bruising of the skin, bleeding from the gums, blue, black or red stools, blood in the urine, lethargy, weakness, coughing, laboured breathing, lameness, seizures and sudden death (Waddell et al., 2013). Dogs are particularly susceptible

to 1080 poison and, while the outcome is usually fatal, there may be a chance of survival if veterinary treatment is sought immediately (i.e. within 30 minutes of ingestion) (Goh et al., 2005; Meenken & Booth, 1997).

7.9 Care of Older Dogs: Minimum Standard No. 24

Dogs are generally considered senior when they are in the last 25 % of the expected lifespan for that breed (Creevy et al., 2019). As dogs age, their needs often change and some adjustments to their care may be required. Some diseases of senior dogs may be interpreted by the owner as part of the natural ageing process but in many cases the difficulties of advancing age and associated pain can be managed by treatment and nutrition to support quality of life (Baldwin et al., 2010; Dhaliwal et al., 2023).

During senior life stage, loss of lean body mass and overall weight loss can occur (Cline et al., 2021).

As dogs age, their need for warm, soft and adequately supportive bedding increases (Dhaliwal et al., 2023). Senior dogs may benefit from additional bedding or dog coats for warmth.

Mobility declines in senior dogs (Creevy et al., 2019) and they generally require less exercise and are less tolerant of high workloads than younger dogs, but this will vary with factors such as breed type and health. Nevertheless, physical activity remains an important contributing factor for good physical and mental health, joint health and mobility, enrichment and improved quality of life (People's Dispensary for Sick Animals, n.d.).

Senior dogs also undergo vision, hearing and health condition declines that may require modifications to the home environment. Floor coverings, better traction including on stairs, and soft bedding will improve the comfort of an older dog (Creevy et al., 2019). Clutter should also be minimised for cognitively impaired dogs who may aimlessly bump into objects and furniture (Creevy et al., 2019). Senior dogs may not hear approaching vehicles well, which increases injury risk (Creevy et al., 2019).

Approximately 14-23 % of senior dogs experience age-related cognitive impairment (Coupland & Reynolds, 2018; Salvin et al., 2010). Signs include forgetting house training, confusion or disorientation, changes in sleep patterns, getting stuck in corners, pacing, and anxiety (Dhaliwal et al., 2023). Enrichment may assist in slowing the progression of cognitive dysfunction (Coupland & Reynolds, 2018; Salvin et al., 2010). A management plan can be developed to improve quality of life in consultation with a veterinarian.

Some veterinary clinics may provide a senior care kit which can help owners support their senior dogs and improve quality of life (Dhaliwal et al., 2023). Wearable technology for pets is readily expanding and may allow real-time monitoring of the senior dog in the near future, including monitoring health and activity (Dhaliwal et al., 2023).

7.10 Significant Surgical Procedures

7.10.1 Debarking: Minimum Standard No. 25

Debarking is a surgical procedure that involves removing laryngeal tissue from a dog. The purpose of debarking is to reduce the volume of the sound made when a dog barks. While debarking reduces the noise associated with the barking, it does not address the cause of the behaviour and restricts their ability to express normal behaviours.

Excessive barking is commonly associated with an underlying welfare issue (American Animal Hospital Association, 2021; American Veterinary Medical Association, 2023; Stephen & Ledger, 2005). There are many options for addressing excessive barking, with debarking assessed as the most harmful for the dog (Protopopova et al., 2016; Righetti, 2005).

Debarking is considered a convenience surgery that carries risks associated with general anaesthesia and the procedure (Candiani et al., 2023). Potential complications include bleeding, acute airway swelling, infection, coughing, gagging, aspiration pneumonia (American Veterinary Medical Association, 2023). In addition, this procedure is associated with development of scar tissue and glottis stenosis (narrowing of the throat) (Candiani et al., 2023). This scar tissue can lead to a number of clinical signs including exercise intolerance, dyspnea (respiratory distress), stridor (noisy breathing), collapse and heat intolerance, requiring further surgical intervention (American Veterinary Medical Association, 2023). One study found 24% of dogs required subsequent surgery to address these issues (Bahr et al., 2014). In some cases, bark volume may return to previous levels within months.

Debarking is banned in many countries due to ethical and welfare concerns, including the United Kingdom, all 26 countries who have ratified the European Convention for the Protection of Pet Animals (most recently the Netherlands in 2023), and several states in the United States (Candiani et al., 2023; European Convention for the Protection of Pet Animals (ETS No. 125), 1992). This procedure is opposed by many veterinary associations (American Animal Hospital Association, 2021; American Veterinary Medical Association, 2023; Australian Veterinary Association, 2018; Canadian Veterinary Medical Association, 2022; Ryan et al., 2019).

7.10.2 Removal of the Dew Claw: Minimum Standard No. 26

Dew claws are vestigial digits found on the inside of the lower limbs of a dog. Because there is no wear of the associated nail, regular trimming is required to reduce the chances of the nail being caught.

While the forelimb dewclaws are typically attached by bone, the hind limb dewclaws are often attached only by skin (Turner, 2023). The removal of articulated dew claws often requires cutting through bone. This can result in complications including pain, infection, and scarring if not performed correctly (Turner, 2023).

It has been suggested that dew claw removal is beneficial to the dog as it prevents future potential injuries (Mills et al., 2016). However, articulated dew claws may function to prevent foot injury by providing support when running and to keep objects steady while a dog is chewing them. Studies which have looked at presence or absence of dew claws as a risk factor for injury in agility dogs have found the removal of the dew claw was associated with an increased risk of injury or had no effect (Blake et al., 2023; Evanow et al., 2021; Sellon et al., 2018; Sundby et al., 2022).

7.10.3 Tail Docking: Minimum Standard No. 27

Tail docking is the shortening of a dog's tail for cosmetic reasons, either surgically or using bands to cut off blood supply. Routine tail docking (or 'banding') is prohibited under Animal Care and Welfare Regulation 51. The shortening of tails for therapeutic reasons is referred to as amputation, rather than docking (see for example, American Veterinary Medical Association, n.d.). Care needs to be taken to ensure that damage to the tail is minimised and that any injury or damage is treated appropriately.

PART 8:

Behaviour, Enrichment, and Training

8.1 Behaviour: Minimum Standard No. 28

Dogs are often required to suppress normal behaviours to meet human expectations (Greenebaum, 2010; Marshall-Pescini et al., 2011). Dogs may experience welfare compromise when placed in situations where they lack the skills needed to cope or due to inappropriate attempts to manage their behaviour, such as use of physical punishment. Where possible, dogs should be given opportunities for choice and control in a manner which does not compromise safety (Duranton & Horowitz, 2019).

Normal dog behaviours such as barking, destructive behaviour, jumping up and pulling on the leash can be seen as problematic or unwanted. Behavioural problems can be due to a dog feeling fearful or experiencing anxiety (Bennett & Rohlf, 2007; Makowska & Cavalli, 2023). Changes in behaviour may also have a medical basis (e.g. pain), be age-related, or result from inappropriate handling, changes to the dog's home environment or use of punishment (Denenberg, 2018; Makowska & Cavalli, 2023).

Many animal welfare, veterinary and behaviour organisations globally support reward-based training methods and oppose use of positive punishment (American Veterinary Society of Animal Behaviour, 2008, 2021; APDTNZ, 2022; Australian Veterinary Association, 2022c; British Columbia SPCA, 2016; British Small Animal Veterinary Association, 2016; Hammerle et al., 2015; New Zealand Veterinary Association, 2018a; Pet Professional Guild Australia, n.d.; RSPCA Australia, 2020).

Reliance on outdated, incorrect or aversive methods of training or equipment during training places the welfare of dogs at risk. Use of physical punishment may cause pain, fear, anxiety, and stress, with both short- and long-term welfare impacts (Beerda et al., 1997; Casey et al., 2021; De Castro et al., 2020; Makowska & Cavalli, 2023; Schalke et al., 2007). In addition, use of physical punishment does not address, and may escalate, underlying issues or may cause the dog to associate the aversive event with something other than what is intended (e.g. with the owner, thus affecting the dog-owner relationship), and is a risk factor for behaviour problems, including aggression (Arhant et al., 2010; Blackwell et al., 2008; Haverbeke et al., 2008; Hiby et al., 2004).

Despite many studies recommending the use of reward-based training methods for dogs, many owners and handlers still use physical punishments as part of training and in response to undesirable behaviour (Todd, 2018).

In New Zealand, dog training is a largely unregulated field (Skyner et al., 2020). The methods dog training professionals use vary substantially and have the potential to cause welfare harm where outdated, incorrect or aversive methods of training or equipment are used.

Where problem behaviours or behavioural problems occur, a reputable dog trainer, dog behaviour consultant, or a veterinarian with behavioural expertise may be able to suggest procedures for modifying these behaviours (Makowska & Cavalli, 2023; Skyner et al., 2020). The earlier that behavioural problems are addressed, the greater the chance of treating them. Sometimes, medication may be used to improve welfare and as part of a behavioural modification plan (Hammerle et al., 2015; Karagiannis et al., 2015; Monteny & Moons, 2020).

Being sociable animals, dogs require social connection as well as exercise on a regular basis (Candiani et al., 2023; Takáčová et al., 2021). Dogs need opportunities to express appropriate, normal behaviours (Candiani et al., 2023; Duranton & Horowitz, 2019). Dogs provided with enough space, enrichment, appropriate training and handling, and a suitable companion do not usually exhibit behavioural problems (Candiani et al., 2023).

Dogs will have individual differences in how social they are with other dogs. Some dogs prefer other dogs as companions, whereas others prefer not to interact with other dogs (Candiani et al., 2023; Ottenheimer Carrier et al., 2013).

8.2 Enrichment: Minimum Standard No. 29

Enrichment is the provision of objects or activities that give opportunities for animals to express behaviours, actively engage with their environment, and socialise (Špinka & Wemelsfelder, 2011), which allow animals to engage in experiences that they may find rewarding (Mellor, 2017).

Provision of enrichment is important for all dogs (Candiani et al., 2023; Coupland & Reynolds, 2018; Desforges, 2021; Döring et al., 2016; Garvey et al., 2016.; Rooney et al., 2009; Wells, 2004). Dogs commonly experience extended periods of isolation and may have few opportunities to exercise agency (choice) (Rehn & Keeling, 2011). Dog welfare is most at risk in barren environments (Burn, 2017; Candiani et al., 2023; Littlewood & Mellor, 2016). Chronic inescapable boredom due to inappropriate living conditions or a lack of suitable companionship can be extremely aversive for dogs and can contribute to unwanted behaviours such as aggression, excessive barking, or destructive behaviours (Arena et al., 2019).

Enrichments fall into five categories; social (e.g. social play with humans or other dogs), physical (e.g. toys, paddling pool), nutritional (e.g. food puzzles or scatter feeding), sensory (e.g. opportunities to explore new smells on a walk), and occupational (e.g. training, agility) (Bloomsmith et al., 1991). Providing dogs with enrichment promotes normal development, provides opportunities for positive mental experiences and agency (choice), and reduces stress and the risk of developing abnormal or unwanted behaviours (Desforges, 2021; Duranton & Horowitz, 2019).

Dogs vary in what they find enriching; for example, dogs have social preferences and socialising with other dogs may be enriching for one dog but a significant source of stress for another dog (Ottenheimer Carrier et al., 2013).

In some cases, dogs may need to be restricted to an area, for example for human safety or to promote recovery from injury (e.g. impounded dogs classified as “dangerous” or dogs restricted to crate rest following surgery) (Littlewood & Mellor, 2016). In these situations, enrichment needs to be adapted to meet these restrictions. For example, scatter feeding for “dangerous” dogs housed in council pounds without compromising human safety.

8.3 Training Dogs: Minimum Standard No. 30

Dogs should be taught the skills they will need to live with humans, such as being left alone temporarily, impulse control, recall, and loose leash walking. Reward-based training methods foster the human animal bond (Makowska & Cavalli, 2023). Rewards may include food, petting, play, environmental rewards, and praise, based on an individual dog’s preferences and motivation, with food typically the most preferred reward (Feuerbacher et al., 2023; Lazaro et al., 2023).

Insufficient or inappropriate training may cause dogs to develop problem behaviours (Makowska & Cavalli, 2023). Physical punishment is ineffective for training dogs with serious behavioural problems, such as

aggression (Williams & Blackwell, 2019; Ziv, 2017). While use of physical punishment can be effective at temporarily suppressing behaviours, it does not address the underlying cause of the behaviour and may contribute to escalation of the behaviour or development of additional behavioural issues (Makowska & Cavalli, 2023).

"Pack theory" (also known as "dominance theory") is a punitive approach to training based on the idea of a person or owner using dominance to become the 'alpha' of the 'pack'. This theory has been thoroughly debunked (American Veterinary Society of Animal Behaviour, 2008; APDTNZ, 2022; Bradshaw et al., 2009; van Kerkhove, 2004). Use of punitive techniques, which rely on intimidation or physical punishment to achieve compliance compromise welfare and can increase the risk of problem behaviours.

8.4 Muzzles and Training Aids: Minimum Standard No. 31

Tools may be used to help manage behaviours or to address behaviours in combination with training (Todd, 2018).

Tools such as crates or baby gates can be used to limit access to areas. A crate suitable for the size of the dog can be useful to help with toilet training and helping a dog to feel secure in a new environment, however dogs need to be trained to tolerate being confined in a crate (The Humane Society of the United States, n.d.). Dogs who cannot be reliably controlled off leash during exercise or training can be kept on a leash or long line (Department of Conservation, n.d.).

Muzzles are used to help manage behaviour including to prevent a dog biting or scavenging, safeguard wildlife or other animals, protect dogs from poison baits, or as requirements for use of public transport (Arhant et al., 2021). They are also a legal requirement in respect of certain classifications of dog under the Dog Control Act 1996.

Muzzles need to be correctly fitted and introduced to dogs to mitigate potential stress and discomfort. Owner education may be required to ensure an appropriate, correctly fitted muzzle is used and introduced correctly to ensure a positive association and avoid stress and discomfort (Arhant et al., 2021). Anti-barking muzzles are not appropriate and should not be used (Cronin et al., 2003).

Aversive training devices, such as choke chains, prong or pinch collars, electronic collars (remote transmission, bark-activated, and boundary control devices), can have a significant, negative long-term impact on the welfare and behaviour of a dog. The overriding consensus from the scientific community and animal welfare and veterinary organisations globally is that reward-based training is as effective as use of electric shock collars and other aversive stimuli collars, prong and pinch collars, and choke chains. Aversive training devices are associated with welfare harms, increased risk of aggression and other behaviour problems and erosion of the human animal bond (Makowska & Cavalli, 2023; Ziv, 2017).

Choke chains can be harmful as the pressure applied to the neck of dogs has the potential to restrict breathing or cause injury (Gardner et al., 1975; Grohmann et al., 2013; Kazemi et al., 2012). Owners who use choke and prong collars report lower satisfaction levels with their dog's lead-walking behaviour in comparison to owners who did not use those collars (Townsend et al.,2022), but it may be that less satisfied owners may be more inclined to use them. While there is limited research on the welfare outcomes of lead pulling on a choke chain, studies examining the risks of pulling on a flat collar suggest a smaller contact area, such as a chain or metal prongs, is likely to concentrate pressure and force, increasing the risk of nerve and skin damage (Carter et al., 2020).

Use of choke chains is opposed by many animal welfare, veterinary and dog training organisations (American Veterinary Society of Animal Behaviour, 2021; British Columbia SPCA, 2016; British Veterinary

Association & British Small Animal Veterinary Association, n.d.; Canadian Association of Professional Dog Trainers, 2022; Pet Professional Guild Australia, n.d.) and is banned in some jurisdictions (Makowska & Cavalli, 2023; Ville de Montreal City Council, 2021).

These use of shock collars is illegal in 10 European countries and several states in Canada, United States of America and Australia (Makowska & Cavalli, 2023; RSPCA Australia, 2022). England recently announced a ban on the use of shock collars which is due to come into force in February 2024, a move supported by welfare organisations and the UK Kennel Club but opposed by lobbyists (Rachman, 2023; Rankin, 2023). In 2018, the Scottish Government published guidance advising that the use of aversive training devices, including electric collars, may constitute an offence of causing unnecessary suffering under the Animal Health and Welfare (Scotland) Act 2006 (Scottish Government, 2018). Unfortunately, evidence suggests that this guidance has not been effective in stopping the use of these devices across the nation and recently a cross party group of 42 Ministers of Parliament in Scotland have renewed calls for a ban (Meighan, 2023).

Many organisations globally oppose the use of electric shock collars (American Veterinary Society of Animal Behaviour, 2021; Association of Professional Dog Trainers New Zealand, 2020; Australian Veterinary Association, 2022c; British Columbia SPCA, 2016; British Small Animal Veterinary Association, 2016; British Veterinary Association & British Small Animal Veterinary Association, n.d.; New Zealand Veterinary Association, 2018b; RSPCA Australia, 2022; The Kennel Club (UK), n.d.).

The welfare impacts of shock collars are well studied (see Lysons & Coulson, 2015; Makowska & Cavalli, 2023 for reviews). Dogs trained using shock collars show stress behaviours in response to the shock, including yelping and vocalisations, stress-related behaviours (e.g. yawning, panting, low body posture) and higher cortisol in comparison to those trained with reward-based methods (Makowska & Cavalli, 2023).

Most studies investigating welfare impacts of shock collars are conducted in controlled settings in accordance with the best practices set out by shock collar manufacturers and may not be representative of welfare impacts outside of these conditions. While electric collar manufacturers typically provide instructions on use, owners typically do not read the manufacturers' instructions prior to use and advice on correct usage is not consistently followed which may aggravate welfare harms associated with these devices (Lysons & Coulson, 2015; Makowska & Cavalli, 2023; Masson et al., 2018).

There is evidence that use of shock collars may help to suppress predatory behaviour in dogs (Christiansen et al., 2001a, 2001b). Use of shock collars to improve a dog's recall or to discourage chasing of livestock, other animals or people are common justifications for use of shock collars (Lysons & Coulson, 2015). This has particular relevance in New Zealand, where use of shock collars is part of Government programmes to reduce dog predation on kiwi (Department of Conservation, n.d.). New Zealand studies exploring the efficacy of kiwi aversion training found that the majority of dogs avoided the kiwi training stimuli (Dale et al., 2013, 2017). However, these studies relied on prey substitutes and dogs were kept on long lines or under voice control of the handler. To date, ecological translation of this training stimuli has not been investigated and it remains unclear if this training is generalised to avoidance of live kiwi that dogs may encounter while out of sight of handlers. Owners of dogs who have undergone this training get a kiwi aversion training permit which permits them to hunt or walk on Department of Conservation land and some private forestry blocks known to be inhabited by kiwi. Thus, there is a risk that this training may put the welfare of dogs and kiwi at risk. NZVA recommends kiwi aversion training schemes consider moving to higher welfare positive reinforcement methods for training dogs (New Zealand Veterinary Association, 2018b).

From a welfare standpoint, efficacy is not the sole consideration when evaluating training methods but warrants some consideration. The efficacy of shock collars used by trainers nominated by e-collar manufacturers (ECMA) has been compared with reward-based training. It was found that reward-based training was more effective at improving recall during the training sessions with fewer training commands required, fewer errors during training and a shorter latency to respond to recall signals and sit commands (China et al., 2020). Owners report lower satisfaction rates with shock collar training than reward-based methods for addressing recall or predatory behaviour (Arnott et al., 2014; Blackwell et al., 2012; Cooper et al., 2014).

Where an owner or person in charge of a dog is at all uncertain how the dog will respond to other dogs, livestock or wildlife, the dog should be restrained in a manner that keeps all animals safe. Management of dogs has been identified as key to prevent predatory behaviour since training alone may not resolve the issue (McLennan, 2023). A recent report commissioned by the Welsh Government proposed behavioural science-based interventions to reduce the number of dog related incidents that occur in the vicinity of livestock (DJS Research, 2023).

A survey of Australian working dog owners, which included farm dogs, hunting dogs and dogs used by Government departments, found that use of 'correction' and electric shock collars is most common among handlers who do not have any formal education in dog training (Branson et al., 2009). Training with shock collars was associated with below average success rates in stock herding dogs (Arnott et al., 2014). While this does not necessarily reflect a causal link between use of shock collars and failure of training, the results do suggest that shock collars are not an effective solution to poor training.

PART 9:
Transportation

9 Transportation: Minimum Standard No. 32

The Act requires that every person in charge of a vehicle must ensure that any animal carried in a vehicle is secured and their welfare attended to while being transported in or on a vehicle.

To ensure the safety of both the dog and the occupants of the vehicle, dogs should be secured while being transported in a vehicle (Center for Pet Safety, n.d.; Swallow et al., 2005). When carried in or on a vehicle, dogs should be protected from extreme temperatures, excessive noise, and in a manner to ensure adequate ventilation.

Dogs should be safely and appropriately secured while being transported in a vehicle to reduce the risk of accident due to distracting the driver, and the risk of the dog becoming a projectile in the event of an accident (Coleman, 2018). Dogs should not be transported in the front of the vehicle, unless in the passenger foot well, as they can be killed or injured by deploying air bags.

Where a crate or harness is used to retrain a dog they should not be secured with a seat belt unless they have been safety crash tested as they will not protect the dog; a crate is more secure on the floor behind one of the front seats (American Veterinary Medical Association, n.d.-b; Center for Pet Safety, n.d.; Zeleny & Grusova, 2015).

Transport crates or kennels should be constructed from fibreglass, metal, rigid plastic, weld metal mesh (although the weld metal mesh should not be at the bottom of the container to protect the dogs' feet), solid wood, or plywood (International Air Transport Association, 2023; Swallow et al., 2005). Evidence-based crash testing for kennels, crates and safety harnesses used for motor vehicle travel is recommended by the AVMA (American Veterinary Medical Association, n.d.-b).

Crates and containers need to be well-ventilated (American Veterinary Medical Association, n.d.-b; Tateo et al., 2022).

Dogs can be seriously injured or escape if allowed to travel with their heads completely out of the window of a moving vehicle (Coleman, 2018).

Dogs being transported over long distances, either by road or by air, have additional requirements such as provision of water (International Air Transport Association, 2023). Where dogs or puppies are to be transported over long distance, veterinarians and animal transport agents can provide useful advice. For air travel, including export, the International Air Transport Association (www.iata.org) provides guidelines, which all domestic carriers follow. Many airlines will not transport brachycephalic dogs due to their increased risk respiratory difficulties and death during transport (American Veterinary Medical Association, n.d.-a; Mosley, n.d.).

Sedation of dogs for transportation is not generally recommended as it can negatively impact cardiovascular and respiratory function, affect dogs' balance and does not reduce the anxiety of animals (Australian Veterinary Association, 2022a). Anti-nausea or anti-anxiety medication may be prescribed by a veterinarian for dogs who experience motion sickness or anxiety related to transport (American Veterinary Medical Association, n.d.-c; Australian Veterinary Association, 2022a).

Thermal stress is a year-round risk factor for dogs left in vehicles (Carter et al., 2020; Hall & Carter, 2016). The temperature in a closed vehicle in full sun can reach over 50 degrees Celsius in less than fifteen minutes (King et al., 1981; McLaren et al., 2005; Roberts & Roberts, 1976). This will cause an enclosed dog's temperature to rise rapidly, followed by extreme distress and rapid death. Temperatures will rise to dangerous levels even on overcast days and cracking open the windows does not slow the rate of temperature increase (King et al., 1981; McLaren et al., 2005; Roberts & Roberts, 1976).

PART 10:
Humane Killing*

10 Humane Killing: Minimum Standard No. 33

Decisions to end an animal's life may be difficult and emotive. There are tools available to assess quality of life which may facilitate decision making (American Animal Hospital Association & International Association for Animal Hospice and Palliative Care, 2016). In addition, veterinarians and allied veterinary professionals can provide advice and support.

It is an offence under Section 12(c) of the Act to kill an animal in such a manner that they suffer unreasonable or unnecessary pain or distress. A humane killing requires brain activity to cease as rapidly and painlessly

**Please note: Section titles are set by NAWAC. SPCA prefers the term 'End of Life'.*

as possible, with death ensuing as soon as possible (as defined in other codes of welfare). Euthanasia is the induction of a painless and rapid death where this is for the benefit of the animal (e.g. to mitigate suffering). The preferred method of euthanasia for dogs is by a veterinarian using an intravenous injection of a drug registered for this purpose, in accordance with the American Veterinary Medical Association Guidelines for Euthanasia (American Veterinary Medical Association, 2020).

The Act provides for the euthanasia of a severely injured or sick dog by a veterinarian where in their opinion, the animal should be killed because reasonable treatment will not be sufficient to make the animal respond, and the animal will suffer unreasonable or unnecessary pain or distress if it continues to live (Animal Welfare Act, 1999). A veterinarian may euthanise a dog without the permission of the owner, where the owner cannot be found within a reasonable time or where the owner does not agree to the euthanasia but does not obtain a secondary opinion from a veterinarian within a reasonable time. A warranted inspector or auxiliary officer under the Act (e.g. an SPCA inspector or auxiliary officer) may also perform this task; or provide authority to a veterinarian to destroy an animal. However, it is preferable that euthanasia be performed by a veterinarian if immediately available (Animal Welfare Act, 1999).

It is an offence to kill a dog of any age by drowning. Drowning is not a humane death (American Veterinary Medical Association, 2020; Beausoleil & Mellor, 2015). Drowning causes a series of physiological and chemical responses in the body resulting in fast and lasting decrease of oxygen in the blood, ingestion of liquid in the airways, acidosis, and high levels of carbon dioxide in the blood; all these symptoms an animal experiences while conscious (Beausoleil & Mellor, 2015; McEwen & Gerdin, 2016; Merck & Miller, 2013). Drowning leads to severe 'air hunger', which is considered the most unpleasant affective state associated with breathlessness (Beausoleil & Mellor, 2015).

Killing a dog using carbon monoxide is only considered acceptable for euthanasia with the conditions that require personnel are trained on the hazards of its use, proper equipment that is of high quality construction, in a controlled environment that is monitored for hazards, is compliant with local laws, and the carbon monoxide is a purified form free from contaminants or adulterants (American Veterinary Medical Association, 2020). Using car exhaust as a source of carbon monoxide to kill a dog is not humane due to the prolonged period to death, and signs of agitation prior to loss of consciousness (American Veterinary Medical Association, 2020).

It is an offence to kill a dog of any age by hanging or strangulation. In dogs the vertebral arteries supply the majority of the cerebral circulation due to less developed internal carotids. Death due to hanging may be slower than in humans due to these anatomic differences, depending on the location and amount of compression of the ligature. Strangled dogs will experience breathlessness and may also suffer pain and distress caused by other injuries and pathologies that occur during the process of strangulation (Merck & Miller, 2013).

Blunt force trauma is not an appropriate method for killing of dogs (American Veterinary Medical Association, 2020). Trauma to the cranium can damage tissues and cause traumatic brain injuries (Merck et al., 2013b).

The Dog Control Act allows for the seizure or destruction of dogs attacking any stock, poultry, domestic animal, or protected wildlife. If it is not possible to seize the dog, they may be shot. A humane shooting should result in the shortest period between when the animal is shot and when they experience irreversible loss of consciousness followed by death (Aebischer et al., 2014; Stokke et al., 2018). Best practices to ensure a humane shooting include (Aebischer et al., 2014):

- shooters are competent and can clearly identify the animal before taking a shot.

- the correct firearm, ammunition, range, and shot placement is used.
- a wounded animal is promptly killed.

Dogs who are difficult to handle may need to be sedated first. Some methods of humane killing require a secondary method (e.g. captive bolt followed by pithing) to ensure death. Where dogs are humanely killed or euthanased it is important to confirm death using a combination of criteria (e.g. lack of pulse, breathing, corneal reflex, and response to firm toe pinch, inability to hear respiratory sounds and heartbeat using a stethoscope, greying of mucous membranes, and rigor mortis). None of these signs alone, except rigor mortis, confirms death.

PART 11:
Contingency Planning

11 Contingency Planning: Minimum Standard No. 34

Contingency plans for emergencies such as natural events (e.g. earthquakes, floods, fires, storms, snow or drought, biosecurity events and infrastructure failures) need to be in place to ensure the welfare of animals (Glassey, 2022). Dogs should be included as part of readiness plans.

Civil Defence and Emergency Management (CDEM) encourage all owners and persons in charge of a dog should develop their own plan to care for emergencies (Ministry of Civil Defence and Emergency Management, 2015). Planning for emergencies can protect both animal and human welfare. The willingness of people to evacuate in emergencies is heavily impacted by their ability to evacuate their companion animals (Glassey, 2022). Preparing for emergencies can protect animal welfare by avoiding problems to begin with and help minimise welfare such as thirst, hunger, disease, and exposure to hazards such as extreme weather (Glassey, 2022). It is well recognised by international and national groups that emergency planning and assembling an animal specific evacuation kit for dogs is part of responsible dog ownership (American Veterinary Medical Association, 2016; New Zealand Veterinary Association, 2018a). Access to crates is imperative to facilitating improved response in emergencies (Glassey, 2022).

PART 12:
Welfare Assurance System

12 Welfare Assurance: No Minimum Standard

7. How will the code change existing arrangements for the management of the species or activity in question?

The updated Code of Welfare for Dogs will improve the existing arrangements for dogs so that their physical, health, behavioural, mental, and emotional needs are better met to help ensure good welfare.

8. What impacts will the code have on those people affected by it (for example, benefits, compliance costs, risks)?

Which sector/groups of people will be impacted the most, and how?

The updated Code of Welfare for Dogs will have the biggest impact on dog owners, breeders, trainers and users of working dogs.

There are more Minimum Standards in this draft Code that will require more responsible behaviour from those who are acquiring a dog, those who are breeding and supplying them, and those who are training them.

We want to point NAWAC to the responses from diverse stakeholders related to minimum standards. In many instances, there is support for breeder regulation, enrichment and additional health and care provisions for dogs. For other standards, such as those related to handling, housing, breeding practices there is concern expressed. There was a mixture of strong support and strong opposition for specific surgical procedures and reward-based training techniques and restriction place on punitive training devices.

We think the broad support for many of the minimum standards signals New Zealanders want to progress these issues to advance dog welfare and reduce the negative impacts of irresponsible breeding of dogs and unethical breeding practices (e.g. 'puppy farming').

9. Who have you consulted? What feedback did you receive?

This draft Code of Welfare was updated by a writing group comprising seven national animal welfare stakeholders with a specific expertise in dogs: Companion Animals New Zealand (CANZ), Companion Animal Veterinarians (NZVA-CAV), Dogs New Zealand (Dogs NZ), New Zealand Institute of Animal Management (NZIAM) New Zealand Veterinary Association (NZVA), New Zealand Veterinary Nursing Association (NZVNA), SPCA New Zealand (SPCA), and Veterinarians for Animal Welfare Aotearoa (VAWA).

The draft Code was sent out to over 400 organisations and individuals representing people likely to be impacted by the Code. We consulted a range of stakeholders representing: veterinarians, rescue organisations, breeders and breed clubs, dog behaviour experts, dog trainers, dog groomers, the legal profession, the pet industry, those with an interest in protecting biodiversity, local government, those who use working dogs for farming, racing, defence, and conservation work, and as disability assist dogs, and those who use dogs in research, testing or teaching.

All feedback received through targeted consultation was provided to NAWAC verbatim.

10. Were any significant issues raised about your draft code? How were these issues addressed and if they did not alter your draft code, why not?

The Act does not define 'significant issues'. We have taken the view that significant issues are either where there are large numbers of submissions which are contrary to a Minimum Standard in the Code, or where a submission puts forward a justification based on scientific evidence or good practice for a different or alternative Minimum Standard.

All feedback received through targeted consultation was reviewed and responded to. The draft code submitted to NAWAC was revised accordingly.

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