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Recommendations for reducing stress and behavioral problems in dogs kept within kennel environments.



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Chapter 1 Introduction

This report examines the importance of ensuring minimal amounts of stress for dogs within a kennel environment. It focuses on kennel environments used for dogs that are strays, voluntarily relinquished, seized or being held as “evidence” whilst prosecutions take place. It highlights the need to prevent behavioural problems from occurring, developing or increasing whilst a dog is in a kennel facility. An animal welfare perspective is used to help provide the best kennel environment possible. This helps to ensure the animals’ needs are met, thereby increasing their desirability and potential for rehoming.

Dogs are invaluable to humans for the contributions they make to the lives of individuals as companions and working animals. Stress should be minimised and avoided, especially as it can be detrimental to the dog’s health and well being. Therefore, their welfare, health and principles of care should not be compromised within a kennel environment (Webster, 2005).

This report considers ill health as an important factor when looking at stress and behavioural problems that can develop. If the dog is in good health, stress may be minimised, prevented or even avoided. Therefore, the prevention and containment of diseases and zoonoses in the environment in which they are kept is crucial to avoiding disease and ill health. The importance of the dog’s health and well being is discussed as an important measure in maintaining an effective and productive environment for canines.

The main reason that dogs are not rehomed successfully is because of behavioural problems; consequently habitat management is examined to reduce the stress and improve the quality of life for dogs, enabling them to demonstrate natural behaviour where possible within a caged environment. As well as being able to use their auditory and olfactory abilities as an aspect of their social enrichment. Boredom for dogs should be prevented and/or minimised. They should be able to have sufficient socialisation, particularly for puppies, to enable them to interact and receive stimuli in their external environment without fear.

Key aspects of animal welfare are also reviewed with regards to ethical viewpoints. Definitions of animal welfare are incorporated in the context of the five freedoms. The layout and design of kennels are also examined as an important aspect to ensure high standards and best practice within animal welfare. In addition, the legislation regarding the containment of canines is evaluated in terms of the implications that organisations must deal with. The Animal Welfare Act 2006, appears to encompass the five freedoms, and outlines the responsibilities of a person in charge of animals. Whilst legal prosecutions are taking place, dogs are regarded as evidence and have to be held within a kennel environment until the case concludes. This process can be lengthy and take more than two years in some

cases and these circumstances are also discussed in this report. Other relevant legislation is also outlined.

Recommendations focus on improving the quality of life for dogs that live within a kennel environment and reducing the number of dogs that are returned and brought back to organisations. Therefore, ensuring the dogs that are rehomed are not bought back due to stress and behavioural problems as well as wider difficulties. All recommendations consider the five freedoms and are based upon background information from literature and theory. The practice of three organisations who keep dogs for long periods of time is examined to evaluate how they deal with stress and behavioural problems/difficulties that occur. Particularly as kennel environments can exacerbate problematic behaviour (Tod *et al*, 2005).

Chapter 2 Animal Health and Disease

The health of a dog is important for the welfare of the animal as this has a profound impact on its stress levels and behaviour, which can affect its ability to be rehomed in the future (Tod *et al*, 2005). Stress not only affects how the dog behaves, it can also have a profound effect on the dog's health and health related diseases that are brought on by stressful conditions. Therefore, it is important to understand what factors can be detrimental and the strategies that can be implemented to avoid stress, behavioural and health problems.

2.1 Prevention

Preventing animals becoming ill is crucial in working to alleviate stress within a kennel environment. As part of preventing disease and ill health, dogs should be checked by an experienced person upon entering an organisation and should periodically be checked to make sure they remain healthy. A procedure for this should be clearly outlined in organisations' policies and procedures. Once an animal is accepted within an organisation, it should be treated for fleas and worms as general standard practice. These parasites and their effects are discussed in more detail in Section 2.6.1: General health checks. In addition, high standards of hygiene and awareness help in the prevention and spread of ill health and disease. Part of this prevention is in the use of quarantine areas.

2.1.1 Quarantine

Quarantine is an important method in containing contagious diseases or infections. It is a specific area where any "high risk" dogs are kept if they are likely to cause cross infection to other dogs and/or humans (Thomas, 1995). Organisations with established policies and standards protect the animal as well as staff (Wilson and Turner, 1997). It is beneficial if it is sited away from the main kennel area, in a quiet location for unwell and post operative dogs to recover without the general noise from barking and/or aggression that may take place. In an ideal kennel environment, there would be two quarantine areas, one to separate contagious, infectious and unwell dogs and the second for all new dogs to be placed for a seven day period before being moved to the main kennel area. This would minimise the risk of infected dogs entering the main area and reduces the risk of spreading infectious diseases. However, realistically due to the immense numbers organisations often have, as well as the cost and space implications, this is not really possible for most kennels. Isolation of some infectious diseases is difficult, especially with those that have different incubation periods (Macpherson, 2001). However, other measures such as vaccinations can play an important role in reducing the spread and contraction of diseases.

2.1.2 Vaccinations

Annual vaccinations help to maintain a dog's health thus reducing stress and associated behavioural problems. Some studies show a high prevalence in the number of dogs with health problems that are recognised after they leave an

organisation and in some cases results in them being returned (Wells and Hepper, 1991).

Dogs require annual vaccinations as a method of preventing specific infections that they are prone to. The injection of the vaccine is to stimulate production of antibodies within the immune system to enable it to develop an active immunity and resistance against the disease (Boden, 2005). Vaccination decreases the chances of obtaining a potentially distressing and sometimes fatal disease. Dogs are vaccinated against canine distemper, parvovirus, hepatitis, leptospirosis and the canine parainfluenza virus (Boden, 2005). Vaccinations against distemper have been available since the 1950s and not only protect the dog from contracting these diseases it also prevents it from being a carrier and spreading them (Turner, 2004). However, a vaccine may not always be effective and this fault is unknown until the dog contracts a disease (Appel, 2007). Manufacturers employ different strains which can vary in their immunizing capacity and the duration of immunity against diseases (Carmichael, 1999).

Reducing the risks of infection from dog to dog whilst housed in a kennel environment is beneficial from an animal welfare point of view as well as reducing the stress and behavioural problems that may occur should a dog contract a disease. When a dog enters an organisation for boarding, annual vaccination certificates should be provided to ensure this has taken place due to the serious consequences diseases can have which are outlined below. Consequently, vaccinations should play an important role in helping to reduce and prevent stress and behavioural problems within a kennel environment due to ill health.

Under the Animal Welfare Act 2006, Section 9, the person responsible for an establishment may have under their “duty of care” legal responsibility to prevent dogs suffering and contracting diseases by having them vaccinated, although this has not been tested in law to date. Should it be, then vaccinating dogs may become compulsory.

2.1.3 Hygiene and Faeces disposal

To help prevent the spread of disease and zoonoses, dog faeces should be cleaned from all its accommodation on a regular basis (Landsberg *et al*, 2004). In addition, the staff member responsible for this cleaning should wash their hands immediately afterwards, especially before handling food (DEFRA, 2007, electronic document).

Good hygiene also helps in cases of coprophagia (Boden, 2005) particularly as its causes are not always known. Cleaning up faeces before this occurs can help if there is not a medical or dietary reason for it taking place (Overall, 1997). Some dogs will naturally recycle their own faeces (Turner, 2004). Dog faeces contain bacteria that if ingested can cause stomach upset; however, the main risk is *Toxocara canis* which is discussed in more detail in Section 2.3.2. The Fouling of Land Act 1996, was introduced to give local authorities the power to designate land

where it is an offence not to remove dog faeces if a dog defecates (Shaw and Sons, 2007). This helps increase good public hygiene standards and reduce the risk of faeces related diseases. Although this does not apply to organisations that have kennel facilities as they are on private land; it can serve as a good practice guide. Dog faeces should be cleared up as soon as possible and the area disinfected on a regular basis. This should be outlined within the organisation's procedures and policies guide.

2.2 Infectious Diseases

Infectious disease can be defined as: *"illness caused by the growth or development of another living organism, 'the infectious agent' in or on an animal"* (Turner, 2004). The effects can range from exhibiting signs of illness, discomfort and in some causes lead to the dog's death. As well as parasites, other types of living organisms cause infectious diseases such as: bacteria, viruses, fungi, rickettsia, algae, chlamydia and mycoplasma (Turner, 2004).

In some cases, diseases can be passed on to humans, discussed in more detail in Section 2.4, Zoonoses. If an animal has suffered from a major infectious disease it can become immune to it as its defence mechanisms are able to prevent a reoccurrence. However, as with kennel cough this is not always the case (Turner, 2004).

Dogs can have asymptomatic or subclinical infection where they carry a disease without showing any signs of illness. This can continue from a period of weeks to months depending on the parasite or virus (Turner, 2004). The ability to recognise the early onset of a wide variety of diseases is crucial in providing treatment and preventing spreading. This is critical as some diseases such as Parvovirus spread through direct contact but also through objects that have come into contact with the infected canine. This can cause the death of another dog within a short period of 24 hours (Turner, 2004). Any dog suspected of having contracted an infectious disease should be placed within a quarantine area immediately and closely monitored as a preventative measure. Quarantine records should be well maintained, checked daily and easily accessible to ensure all staff are aware of potential risks, particularly with zoonotic diseases.

Protective clothing, such as overalls worn only in the infected area, are beneficial in preventing further contamination by the kennel persons when contact is made with the dog and/or items within its environment. There should also be a set of procedures and policy guides should a dog be suspected of having an infectious disease.

High standards of cleaning, using strong disinfectants such as Trigene, which kill a wide range of infectious diseases, helps to prevent the spread and containment of infectious diseases. Trigene is on the approved list of disinfectants on the DERFA website and is also certified using European Norm protocols and is Environmental

Protection Act 1990 approved. It is effective for the use of bactericidal, mycobactericidal, virucidal, sporicidal and fungicidal diseases. It can also be used on a wide range of surfaces from metal, fibreglass, painted surfaces, plastics, various flooring and a wide range of fabrics (Medichem International, 2008). This is beneficial as infectious diseases can be transmitted via objects such as feeding bowls etc which can be washed within the Trigene solution and is safe to use with canines. In addition, all dog beds should be washed on a high temperature to eradicate any diseases.

Some infectious diseases such as rabies have to be legally reported if suspected to a Defra Divisional Veterinary Manager as it is listed as a notifiable disease under the Animal Health Act, 1981 (DERFA, 2008). This Act supersedes the Rabies Control Order 1974 (Shaw and Sons, 2007). If rabies is confirmed or strongly suspected, the dog will then be removed by the Chief Veterinary Inspector of the Ministry. In addition, any animal that has come into contact with the suspected infected dog may also be removed. This is a legal requirement under Animal Health Act 1981 (Shaw and Sons, 2007). This is discussed in more detail in Section 2.4.1, Rabies.

Individual infectious diseases are discussed in more detail in the following sections.

2.2.1 Canine Distemper

Canine distemper is an infectious viral disease that can be transmitted between dogs and can be fatal (Boden, 2005). With treatment, the dog can recover with no side effects, with non-life threatening side effects or with life threatening sequelae depending on the strain of the virus involved and the extent of exposure (Pinney, 2004). The virus is carried to the dog's lymph nodes after entering the bloodstream through the nose and throat. The virus then starts to grow and multiplies while battling against the immune system. If the immune system is unsuccessful the virus spreads through other parts of the dog's body (Turner, 2004) which can cause inflammation of the myelitis and encephalitis (Turner, 2004). Distemper can be transmitted in all of the dog's body excretions, although via airborne means is usual and it can also travel on air currents (Pinney, 2004). Early signs of this disease can range from mild conjunctivitis, fever and loss of appetite. As it progresses the dog can have blindness, seizures, coughing, eye and nose discharge, diarrhea, paralysis and vomiting (Pinney, 2004). The effects of distemper are distressful for the dog especially in its development; this is clearly detrimental to the dog's quality of life. In addition, treatment for distemper consists of anticonvulsants, antibiotics, and fluids as supportive care as there is no specific treatment. Success rates once the disease has progressed and the dog exhibits severe signs are low (Pinney, 2004). Therefore, preventing this disease with vaccination is crucial.

2.2.2 Parvovirus

Parvovirus appeared in 1978 as a small DNA virus which is immensely resistant to a large amount of disinfectants and environmental conditions which is why it has

caused thousands of dogs to die (Turner, 2004). As this virus can be transmitted by objects that have come into contact with the infected dog such as brushes or feeding bowls as well as direct contact and the contaminated environment that the dog has lived in for long periods of time, therefore, it is very difficult to contain and dogs can die within a twenty-four hour period (Turner, 2004). Young dogs can die within a few minutes after playing or seeming ok as the virus can attack the heart muscle. The early outbreaks of this virus caused sudden death within a forty-eight hour period for an immense number of dogs. Large numbers of adult dogs now have a degree of immunity against this virus and young dogs still seem to be more at risk (Boden, 2005). The disease can be fatal as it affects the dog's heart, immune system and the intestines which is the most common form: the intestines can actually be shed in the dog's faeces in some cases. Supportive care can be successful if this disease is diagnosed early enough (Pinney, 2004). This virus is very difficult to remove and control within a kennel environment and therefore vaccination is a crucial tool in its prevention.

2.2.3 Canine viral hepatitis

Canine viral hepatitis is also known as Rubarth's disease which can be fatal and can develop over a very short period of time. If a dog does recover from this disease it can be left with a clouding of the cornea which is often called "blue eye" (Turner, 2004). It affects the liver causing hepatitis or severe inflammation as well as affecting other organs such as the kidneys and eyes (Pinney, 2004). Those that recover from this disease may act as carriers and spread it to other dogs through their urine. This disease can also occur simultaneously with distemper and occurs more frequently in the young from 3-9 months old and elderly dogs. Canine viral hepatitis is so sudden that the dog may seem fine at night and be found dead in the morning (Boden, 2005). The main way this is transmitted from dog to dog is through the dog's urine (Turner, 2004). If this disease is contracted within a kennel environment disinfectant will usually eradicate it (Turner, 2004) which highlights the need for vaccination and good kennel hygiene as preventive measures. As dogs can often carry the disease if they recover as a preventative measure euthanasia should take place from the start of the contraction.

2.2.4 Leptospirosis

This disease is also known as Weil's disease and can be contracted when dogs sniff where a rat has been and by swimming or drinking from an infected water source. This disease can cause serious illness in human beings and be fatal to dogs (Turner, 2004). Leptospirosis in canines has been known since 1899 (Bolin, 1996) and its epidemiology has been modified due to changes in factors such as human behaviour, climate change and animal husbandry (Lovett, 2001). In severe cases, death can occur within a few hours and in cases where dogs survive, they can become a source of infection by carrying the bacteria within their urine and on material that has had infected urine on it. This disease is easily eradicated by most

disinfectants and sunlight which makes it less likely to spread and is not contracted easily (Turner, 2004).

Dogs that recover from Leptospirosis can carry it in their urine from 4-18 months afterwards (Boden, 2005) thereby posing a threat to other dogs. Antibiotics can successfully treat Leptospirosis in its early stage however, in severe cases the animal may die (Boden, 2005). This disease is one of the most emerging infectious diseases and is a worldwide zoonotic infection occurring more frequently in tropical regions (Lovett, 2001). From an animal welfare point of view, as this disease can cause fatalities, one needs to examine the number of dogs that could be infected by a recovered animal that is carrying the disease within its urine. Therefore, during this period of time the dog should not be walked in a public place where it is likely to spread the disease or it should be euthanised.

2.2.5 Canine Parainfluenza

Canine parainfluenza can cause kennel cough as it is transmitted by airborne droplets or direct contact with an infected dog. Treatment can take 2-3 weeks to be effective; if untreated, secondary infections can lead to pneumonia (Turner, 2004). This is discussed in more detail below.

2.2.6 Kennel Cough

Kennel cough can be problematic within a kennel environment; it is a general umbrella term used for outbreaks of respiratory disease in dogs. Other terms used to describe kennel cough are bordetellosis and tracheobronchitis (Boden, 2005). Kennel cough is contagious and can be transmitted by indirect contact or direct contact (Turner, 2004). It can also be transmitted by wind and air currents which have been contaminated by the canine from sneeze and cough droplets. As well as being spread by aerosol transmission it can also be spread by direct contact between canines (Turner, 2004). Where the condition is not treated early enough this can cause permanent damage to the animal's airways (Pinney, 2004). Kennel cough is immensely contagious and is aggravated by excitement and/or exercise (Boden, 2005). As long as the dog does not have secondary infections it may just have a dry hacking. However, secondary conditions may develop into pneumonia which means the dog usually develops a fever, loses its appetite and may start having a greenish nasal and eye discharge (Pinney, 2004).

There are vaccines that can be given to dogs although they are not always affective. If a dog receives a vaccination against kennel cough this should be completed two weeks before the dog goes into the kennel environment (Boden, 2005). With dogs that are rehomed, abandoned, stray or legally seized this is not realistic. Regardless as to whether a dog is vaccinated or not each additional day spent within a kennel environment increases the prognostic factor for a dog acquiring kennel cough (Edinboro, *et al*, 2004). A dog can build a natural immunity once it has suffered from a major infectious disease however, this is not the case with kennel cough and dogs

will usually develop it again (Turner, 2004). Treatment ranges from cough suppressants and antibiotics in the early stages, to preventing dehydration as well as vaporizers to liquefy secretions in the dogs' airways in more severe cases. Ideally, dogs that demonstrate signs of kennel cough should be placed within isolation to prevent the spread of the disease.

2.3 Parasites

Arthropods, protozoa and helminths are known as parasites and are all types of organisms that can all give rise to infections (Turner, 2004). The nature of parasitic diseases are organisms that either live internally or on the surface of an animal. Endoparasites are organisms that live within animals such as flukes and worms. Ectoparasites live on the surface of an animal such as fleas, ticks and mites. Diseases caused by parasites can usually be caused by mass infestations and as a general rule they do not spend all their life on their host. In fact a certain amount of their life cycle is spent elsewhere in the environment (Boden, 2005).

2.3.1 Fleas

Fleas degenerate "*forms of two winged insects*" and are also members of the order Siphonaptera (Boden, 2005). The dog flea is the *Ctenocephalides* and the human flea is *Pulex irritans* although they can both be found on alternate hosts and can cause severe irritation; in severe cases these fleas can also cause anaemia (Boden, 2005). Fleas can feed on humans as well as dogs and are probably the most common cause of skin disease in dogs caused by saliva injected into the dog when the flea feeds. This leads to the dog chewing and scratching as a reaction to the itching sensation (Turner, 2004).

The most common ectoparasite of the dog is the cat flea, *Ctenocephalides felis felis*, which transmits tape worm and the flea bite allergy, dermatitis (Dryden, 1997). Even though the immature stages of the cat flea are susceptible to humidity and temperature there has been a general increase in the last ten years of insecticide resistance (Dryden, 1997).

Effective treatment for fleas can be applied via either oral or topical applications with insecticide applications consisting of selamectin, fipronil, lufenuron and imidacloprid (Rust, 2005). These treatments have reduced dermatitis caused by an allergic flea reaction and the need to treat the environment (Rust, 2005). However, in a kennel environment flea infestations may quickly reoccur due to the high numbers of animals that are usually coming in and out of the premises. This means that treatments are an on-going process to ensure successful disinfestation. This is important as dogs may experience anything from a mild to a severe discomfort as well as a possible allergic reaction depending on the level of infestation, thus leading to an increase in its stress levels.

When treating animals for flea infestations, it is important to ensure that all of the bedding and sleeping area is treated in addition to the animal to prevent further spread and cross infection. The life cycle of the flea needs to be considered as fleas' eggs are usually laid either on their host where they fall off, on the animals' bedding or on the floor. They can live in the environment in a cocoon for up to a year only emerging when conditions such as temperature are desirable (Boden, 2005). Climate conditions can determine how long the flea lives which is from as little as three weeks to as long as two years. They also live up to 90% of their time off their host only jumping on them to obtain blood, human or animal (Turner, 2004). An on-going study with regards to the detectable levels of flea infestations in different seasons observed fleas in both cats and dogs. This study demonstrated that there were no clear differences in the seasons (Beck, *et al* 2006). Although this may be due to environmental changes that humans have within their housing systems with regards to central heating (Turner, 2004). Especially, as fleas are present throughout the year and not just in the warm weather (Rinadi, *et al*, 2007).

2.3.2 Roundworms

Toxocara canis is a common round worm found in dogs mainly through the contamination of the environment (Paul and Virbac Nederland, 1997). Through the presence of eggs in the dog's faeces and can remain in the environment for years; they are also known as "spool worms or ascarids that inhabit the dog's small intestine (Pinney, 2004). In humans, the *Toxocara* worm can cause "*visceral larva migrans*" (Bachli *et al*, 2004). Large numbers of animals are born with roundworm (Pinney, 2004) as the infection can be transmitted through the mother's milk as well as pre-birth by the larva crossing the mother's placenta. The puppy can then produce as many as 15, 000 per gram of faeces from around two months of age, The eggs can also survive for considerable periods of time within soil (Boden, 2005) which can contaminate children, particularly in play areas causing blindness, tumours in various organs and even resemble symptoms as displayed in epilepsy or asthma (Boden, 2004). If left untreated in dogs, roundworm can cause gastroenteritis, malnutrition and can even cause rupture of the intestine in severe cases (Pinney, 2004). Prevention involves the bitch being treated with Febendazole as this prohibits the larva being passed into her milk. Puppies can be treated from two weeks old to prevent any eggs being passed within their faeces. Adult dogs should also be wormed regularly every few months to prevent roundworm (Boden, 2005).

2.3.3 Hookworm

Necator americanus and *Ancylostoma duodenale* are the major species of hookworm that affect humans and are parasites of the intestines. Hookworm is spread from the parasite being in the soil which has infected larva. (Loukas *et al*, 2005). Infestation can also occur through penetration of the skin (Boden, 2005). Humans are usually infected in areas where their skin is bare such as the soles of

the feet as this is more likely to come in to contact with contaminated soil (Marx, 1991). Hookworms actually have teeth, used to attach itself to the wall of its host's intestine where they then suck blood from the vessels within the wall (Pinney, 2004). Hookworm can lead to anemia as well as blood loss. It also causes diarrhoea and pedal dermatitis in the feet (Turner, 2004). If it goes untreated it can cause death (Pinney, 2004). There are some vaccines available for dogs although they are usually for a stage of development within the hookworm's life cycle (Loukas *et al* ,2005). In addition, using a "suitable anthelmintic" and concrete instead of grass in kennels can help prevent infections (Turner, 2004). Hookworm is more prominent in developing countries.

2.3.4 Tape worm

Adult tape worms can cause a blockage to the dog's intestines, anaemia and indigestion as well as no symptoms at all. The most common genus in dogs is *Taenia* which can be treated by anthelmintics such as dichlorophen or praziquantel based (Boden, 2005). In dogs, the *dipylidium caninum* can use the flea as an intermediate host (Pinney, 2004). This enables the dog to be infected by biting and grooming through irritation caused by the flea, where it then ingests and becomes infected (Turner, 2004). In faeces, segments of the tape that contain eggs are shed and are consumed by the next host where they start to develop. The eggs are very sticky and can easily be picked up by children and ingested (Marx, 1991). They continue their development within the definitive host who is the next host to consume them, where they attach themselves to the intestine again and the cycle of infection continues (Pinney, 2004). They are a threat to public health and require more than one host throughout their life cycle (Boden, 2005). Tapeworm can cause malnutrition and gastroenteritis although they can cause death if they migrate through the body tissues in larval forms (Pinney, 2004). *Dipylidium caninum* as well as *echinococcus* are forms of tape worm (Turner, 2004) which affect dogs.

Treating fleas and lice in a kennel environment are important preventative control measures. Disposing of faeces and excellent standards of hygiene also help prevent and reduce the number of infections (Pinney, 2004). As well as not providing uncooked meat as this can be a cause of contamination (Stallbaumer, 1987). People usually realise their dog has tape worms by the dog having mobile segments crawling around its anal area as well it dragging its bottom along the ground, also known as scooting (Turner, 2004). Most dogs contract tapeworm at some point in their life.

2.3.5 Whipworm

Where grass runs are used in hot summer months there can be a prevalence of whipworm within the United Kingdom; in conditions such as these the eggs of whipworm can survive up to five years. Whipworm is usually present in dogs that have been kept in confined spaces where green areas exist (Turner, 2004). They colonise the cecum and the large intestine and are passed through faeces. The

eggs are then digested by a dog where they take up to three months to develop to maturity in their large intestine; the cycle is then repeated (Pinney, 2004).

Dogs infected with whipworm may not show any signs of having it, although in some cases intermittent diarrhoea may occur (Turner, 2004). In other cases, dogs may start to lose weight, their coat may start to feel rough and look unkempt (Pinney, 2004). Preventative measures include removing grass and green areas and replacing with concrete surfaces as well as removing faeces and disinfecting the area regularly (Turner, 2004).

2.3.6 Heartworm

In Central Europe, the heartworm *Dirofilaria immitis* is the most common and was introduced into the United Kingdom by dogs that have travelled abroad (Boden, 2005) as it is a sub-tropical and tropical disease (Turner, 2004). Heartworm can have devastating effects for dogs as these worms attack the heart as well as the kidneys, liver and lungs and cause the deaths of thousands of dogs each year (Pinney, 2004). Dogs can die suddenly due to a compromised blood flow; other dogs may not demonstrate any signs of having the disease as they may form a symbiotic relationship (Pinney, 2004). Gnats and mosquitoes can transmit the worm larvae as they are present in the host as microfilariae in the bloodstream (Boden, 2005).

Snails and slugs can also act as an intermediate host for heartworm (Boden, 2005). Heartworm preventative medication is available for dogs (Pinney, 2004). Selamectin can be used as a form of treatment (Boden, 2005). However, it is difficult to eliminate due to the different stages of development (Turner, 2004).

2.3.7 Mites

Cheyletiella, Sarcoptes and Notoedres are all mange mites that cause skin disease in people and animals. Demodectic mange is the most common in dogs; also known as follicular and black mange (Boden, 2005). Dogs usually suffer from irritated and itchy skin lesions which do not usually last for long periods of time (Pinney, 2004). There are two kinds of demodectic mange: squamous and pustular. The latter is very serious and can cause the dog to become ill as well as having a skin disorder. When extensive areas of the skin are involved, euthanasia may be the kindest option as it is hard to treat (Boden, 2005). Mites can live off their host for periods of two to three days; during this period they are able to infect other dogs (Turner, 2004). Humans usually develop skin lesions from mite infestations as is the case with *sarcoptes scabiei* var *canis* which affects both people and dogs. As well as the seasonal *trambicula autumnalis* mites where the larval forms affect people resulting in pruritic skin disease (Thomsett, 1968).

Scabies also known as sarcoptic mange can develop in humans from mites (Boden, 2005). It is contagious by direct skin contact and is itchy; the female burrows under the skin where she lays her eggs where they hatch three to four days later. These then mature and the cycle repeats itself (Macpherson, 2001).

An awareness of the presence of mites may not be apparent until the dog starts developing skin lesions and loss of hair (Thomsett, 1968). Usually diagnosis is confirmed with a skin scraping of the affected area taken by a Veterinary Surgeon (Turner, 2004). Ear mites are usually easier to notice due to the dog shaking its head. Effective ways of reducing mites in a kennel environment are to use protective clothing and gloves when handling an infected dog and to always wash hands immediately afterwards (Pinney, 2004). Especially when treating the animal by using a bath solution that contains an anti-parasite content (Boden, 2005). Mite infested airborne scales may cause an outbreak of scabies (Macpherson, 2001). Treatment for ear mites should be in the form of ear drops from a Veterinary Surgeon (Boden, 2005). Grooming equipment should be not shared and should be disinfected after use on an infected animal. It is also beneficial to clip long haired dogs (Turner, 2004).

2.3.8 Ticks

Ticks are important to control as they can transmit diseases to both humans and dogs such as Lyme disease and Rocky Mountain Spotted Fever (Pinney, 2004). They are very serious parasites as they transmit diseases such as red water fever, tick-borne fever and louping cough (Boden, 2005). They can also cause dogs to experience blood loss anaemia in severe cases where the infestation goes untreated (Pinney, 2004). Ticks infect a host to feed affecting not only dogs but humans as well. The most common being sheep tick *Ixodes ricinus* in the United Kingdom (Turner, 2004). Skin irritation can be caused in less severe cases (Pinney, 2004).

Ticks usually lay their eggs in environments such as wall crevices, rock areas and wood stumps as they like sheltered places. They can then attach themselves to a host via a bush or grass stem that they have managed to crawl up during the “seed tick” stage (Pinney, 2004).

Within a kennel block environment treatment of ticks can consist of a block of ice being placed on the floor with all access points closed. The ticks can be collected and destroyed after a period of time as they would have all gathered round the CO₂ source (Boden, 2005). In addition, treatment of ticks that are attached should never involve trying to pull them off, instead a pyrethrin spray should be used (Pinney, 2004).

2.3.9 Ringworm

Ringworm also known as dermatophytosis is in fact a fungus infection and not a worm at all (Pinney, 2004). Usually the fungal infection is *Trichophyton* or *Microsporum* species which is rare in dogs (Turner, 2004). *Oospora* and *favus* genera can also affect dogs (Boden, 2005). Ringworm can live on the hairs or skin of the infected area (Boden, 2005). Sometimes ringworm in dogs can be immensely persistent and difficult to resolve (Wright, 2008). It can affect both humans and dogs and causes itchy red lesions on the skin. It can be transmitted by dogs to people by

direct contact with the infected area (Pinney, 2004). It can also be transmitted from dog to dog indirectly by the sharing of grooming equipment and dog collars. Treatment for ringworm is usually with antifungal antibiotics as well as cleaning of the area that the dog has been staying in (Turner, 2004). Often, ring worm is seen as a pale yellow circular raised patch (Boden, 2005). When treating a dog, caution should be taken when grooming the dog and the equipment should not be used on other animals, it should also be cleaned after each use to make sure re-infection does not take place.

2.4 Zoonoses

The definition of zoonoses is “*an infection that is shared by man and animals*” (Turner, 2004). This is one of the negative aspects of dealing with dogs (McBride *et al*, 2006). The spread of diseases from dogs does occur, however, it is rare (Landsberg *et al*, 2004). Below is a list of other transmittable diseases to supplement those already discussed above. *Figure 1* is a more general list of important zoonotic infections of the dog, taken from Turner, (2004).

Type of Infection	Cause of infection	Name of disease	Method of spread to man	Disease in dog	Disease in man
Virus	Rabies virus	Rabies (hydrophobia)	Bite wound or licking of cut	Nervous disease and death	Nervous disease and death
Bacterium	Salmonella Campylobacter Leptospira	Salmonellosis Campylobacterosis Leptospirosis (Weils disease in man)	Faecal Contamination Faecal Contamination Urine Contamination	Gastroenteritis Gastroenteritis Liver and Kidney disease	Gastroenteritis Gastroenteritis Liver and Kidney disease and meningitis
Fungus	Microsporium	Ringworm	Direct contact	Skin disease	Skin disease
Helminths	Toxocara canis	Toxocariasis (Visceral larval migrants in man)	Faecal Contamination	Roundworms intestine	Liver and eye disease
	Echinococcus Granulosus	Echinococcosis (Hydatid disease in man)	Faecal Contamination	Tapeworms in intestine	Large cysts in liver, lungs and brain
Arthropods	Cheyletiella Parasitovorax Sarcoptes scabei	Cheyletiellosis Sarcoptic mange (scabies in man)	Direct contact Direct contact	Scurfy skin Skin disease	Marked itching and rash Skin disease

The general requirements to keep a dog free from Zoonotic diseases are to maintain its good health, make sure it is fully vaccinated annually and is kept free from parasites. In addition, the dog’s faeces should be cleaned from all its accommodation and exercise areas regularly. The dog should not be able to lick faces and hands should be washed after play (Landsberg *et al*, 2004). Where necessary, protective clothing should be worn to reduce cross infection and grooming equipment should not be shared and must be cleaned effectively with a

disinfectant such as Trigen. This should reduce the health and safety implications for the spread of zoonotic diseases. For further health and safety implications refer to section 2.9.

2.4.1 Rabies

At this moment in time there are no cases of rabies within the United Kingdom (Turner, 2004). Rabies was eradicated from the United Kingdom in 1992 and the Pet Travel Scheme and quarantine procedures help prevent it from reoccurring (DERFA, 2008). Rabies is caused by the rhabdovirus and is fatal and affects all mammals. It is a viral disease of the nervous system, transmitted by the saliva in a bite from an infectious animal. Rabies leads to a painful death and causes aggression and paralysis throughout its progression (DERFA, 2008).

Therefore, at all United Kingdom access points, any dog that is impounded as a stray such as in London's Docklands area must be brought into a kennel environment and be quarantined as a precaution. This is particularly important as rabies can be transmitted to human beings as well as other animals (Boden, 2005) and to continue the current absence of rabies (Twig, 2008). There are two approved vaccines for dogs within the United Kingdom Nobivac and Rabisyn. In many countries, dogs are given the rabies vaccine as a control measure, which is not seen as necessary in the UK unless dogs are being imported and/or travelling under the Pet Travel Scheme, introduced in 2000 (Boden, 2005). However, if there is an outbreak of rabies under the Rabies Control Order 1974, the Government can enforce a compulsory vaccination of all domestic animals including stray dogs as well as implementing their confinement (Boden, 2005). If this were to occur it would affect any kennel establishment within the controlled area, especially as rabies has a long and variable incubation period (AUSVETPLAN, 1999).

If a dog is suspected of having rabies, under British law it must be reported to a Defra, (Department for Environment Food and Rural Affairs) Divisional Veterinary Manager as it is listed as a notifiable disease under the Animal Health Act 1981 (DERFA, 2008). This Act supersedes the Rabies Control Order 1974 (Shaw and Sons, 2007). If rabies is confirmed or strongly suspected, the dog will then be removed by the Chief Veterinary Inspector of the Ministry. In addition, any animal that has come into contact with the suspected infected dog may also be removed. This is a legal requirement under the Animal Health Act 1981 (Shaw and Sons, 2007).

If a dog tests positive for rabies it is euthanised by the Ministry to prevent the spread of the disease (DERFA, 2008). This would also stop the animal from suffering. The best treatment for humans is to prevent infection. Kennel staff should not put themselves at risk from being licked or bitten by a suspected rabid dog. If a bite or lick does take place, the wound and the surrounding area need to be cleaned immediately. In addition, the person needs to be treated with the rabies vaccine and

immunoglobulin and antiserum. Even if a person has been vaccinated against rabies they should receive up to four doses of the vaccine as a preventive measure (Macpherson, 2001).

2.5 Stress

All animals suffer stress from time to time, what is significant is whether it is prolonged. Prolonged stress can be detrimental to the dog's health, however; "appropriate" stress levels are required for a dog to have increased resistance to disease (Overall, 1997). Stress can be defined by the messages the dog sends to the person trying to understand and interpret the dog's visual communication as well as any verbal communication it may display (Houpt, 1991). Different levels of stress make a dog behave differently, as chronic stress may inhibit a dog feeding whereas acute stress may enhance its eating (Overall, 1997). Some dogs can cope well in a kennel environment and others develop stress and behavioural problems. The ways this can manifest with canines in a kennel environment is discussed further in chapter four. Providing the dog with auditory and olfactory enrichment can, in some cases, alleviate stress and behavioural problems, this is discussed further in chapter three.

Stress related behaviour can manifest in a variety of ways including: panting, salivating, pacing, shedding, diarrhoea/ bowel movements, inappropriate urination, licking the lips, coughing, sneezing, dilated pupils, trembling, shaking, yawning, whining, excessive vocalizing, nipping, growling when approached to be handled, sweaty paws (leaving sweaty paw prints on the floor), increased or decreased activity, excessive scratching or licking repeatedly, turning away or avoiding eye contact, loss of appetite, hiding behind the handler, hiding under furniture and refusing to interact with others (Landsberg *et al*, 2004).

This build up of stress can lead to gastrointestinal problems; it has medically been established that chronic symptoms of anxiety and stress can reduce the effect of the body's immune system (Boden, 2005).

Stress brings about changes in the body's biochemical state as extra epinephrine and other adrenal steroids such as hydrocortisone are released in the bloodstream. It also induces an increased heart beat with symptoms such as palpitations and blood pressure with mental / emotional signs such as a change in temperament, or increase in nervousness or aggression. Stress therefore creates anomalies in homeostasis. When the extra chemicals in the bloodstream are not completely used or the stress situation continues long term, it makes the body prone to mental and physical illnesses (Turner, 2004). Consequently, stress needs to be minimised in a kennel environment to help ensure the dog's welfare and health.

2.6 Monitoring Health

The general health of all dogs should be monitored and a general log kept. This record should contain information on each individual dog including any treatment being administered. This helps to ensure that all staff are aware of the animals' needs in their care so that they can receive the best possible care, thereby reducing any stress. This should include checking the dog's ears and teeth as health changes especially as animals become older. Monitoring health is important if there are not outward signs of a dog being unwell apart from subtle changes in its behaviour such as being quieter than normal. This would alert staff to observe it and take appropriate action, if and when required. In other cases, the dog may just have a case of diarrhoea and not feeding the dog for twenty-four hours may suffice. However, all staff would need to know that that has taken place in case there is a more serious underlying problem which warrants veterinary attention. The on-going monitoring of health is also important in law, with a duty of care under the Animal Welfare Act 2006, discussed in more detail in chapter 5. In addition, an initial general health check when an animal enters an organisation is imperative.

2.6.1 General Health Checks

Kennels need to ensure that the dogs in their care are healthy. General health checks do not need to be performed by a Veterinary Surgeon and normally if an animal looks healthy then it usually is (Bower and Young, 2001). However, underlying problems can always occur and a dog should be periodically monitored as previously discussed.

General health checks should include the following, according to recommendations by Bower and Young (2001). A dog should:

- Want to play; although this would not always apply to dogs bought into a kennel environment as the noise and unusualness may make dogs nervous and unsure.
- Have bright alert eyes which glisten slightly without discharge.
- Its nose should be cold and wet with no discharge from its nostrils; although a dog having a warm nose with some clear fluid does not always indicate ill health.
- It should respond to sounds and be alert without unpleasant smells from its ears, no visual wax and only the occasional scratching. The inside of the ear should be pink and silky in appearance without scabs or hard crusts.
- Its coat should naturally smell "doggy" but not be unpleasant without scurf, scabs or bald patches. The coat should be glossy and pleasant to touch. Although dogs that may not have been well looked after may have dirty and matted coats that need cutting and grooming. This may not be an indication of the dog being unwell, it may just be an indication that it has not been well looked after.

- Its teeth should be white and smooth, depending on age. There should be no foul smell on the dog's breath and no gum inflammation. Although it is normal for older dogs to have teeth that are aging and not completely white.
- Its faeces should be solid and free from worms, although this will usually only be able to be seen once the dog has been in the organisation and passed a motion. Dogs normally clean themselves; however, excess licking and/or scooting may indicate that there is something wrong. This would have to be monitored once the dog has passed its first motion and had been in the kennel environment for a day or two. It is not unusual for a dog not to pass a motion for a couple of days if immensely frightened.

Once a dog enters an organisation's kennel facilities, a general health check should be provided to help prevent the spread of diseases, especially as diseases can increase the stress levels of the dog. In some cases, diseases can be life threatening, especially where dogs are particularly young or elderly (Turner, 2004).

The person accepting the dog into the organisation's care should have adequate experience and qualifications when possible. They should be able to recognise general signs of ill health and disease and be able to take appropriate action from placing the dog into isolation facilities if necessary to treating the dog for fleas, worms and other basic treatments. This is beneficial to both humans and dogs in preventing the spread of zoonoses. It is important to handle a dog when entering the organisation as part of being able to assess the dog's temperament and emotional state. This requires the animal to be of a temperament to allow it to be handled or restrained adequately to provide an examination (Houbt, 1991). Dogs that display aggression may not be able to be handled and may thereby enter the organisation with an undiagnosed condition. Experienced members of staff will normally be able to recognise an aggressive dog and determine whether it is fearful aggression that may subside with time or actual aggressive tendencies (Houbt, (1991).

Although the first point of contact should be with an experienced person, the onset of ill health can occur at any time and therefore everyone that comes into contact with the dog, from the supervisor to the person that cleans the kennel and feeds it, to the volunteer that walks it, should be aware of the symptoms of ill health. Even if the person is unsure why there may be a change in behaviour, they should inform an experienced member of staff to allow for further investigation and action.

Dogs should also receive an all over examination periodically which should be recorded. This should include checking the dog's ears, and teeth as well as receiving regular annual vaccinations and being treated for fleas and worms as required.

2.6.2 Veterinary Treatment

Veterinary Surgeons within the United Kingdom that are voluntary members of the Royal College of Veterinary Surgeons enable their clients to be assured that they adhere to the quality framework laid down by them. It also provides people with the assurance that they are qualified and maintain high standards of practices (Royal College of Veterinary Surgeons, 2008). In large organisations, Veterinary Surgeons are sometimes employed by them and based on site. In others, a Veterinary Surgeon may visit when and as required and/or on a pre-arranged day each week. Regardless of visiting arrangements, all veterinary practices are required to provide a twenty-four emergency call-out service. Small practices often provide contact details of a larger practice by pre-arrangement.

Under the Animal Welfare Act 2006, organisations have a legal requirement to provide animals with treatment when and as required to prevent any unnecessary suffering occurring (Shaw and Son 2007). Therefore, arrangements for a Veterinary Surgeon to be available when and as necessary to examine animals and provide advice on all aspects of animal welfare should be employed. This should also be part of the company's policies and procedures that everyone in the organisation is aware of. The contact details should be readily displayed and all staff trained to act and seek professional medical help, particularly in the case of an emergency.

2.7 Euthanasia

In nature, when an animal becomes sick or unwell, it will often seek solitude and stop eating, leading to its death (Pinney 2004). When euthanasia becomes a choice in captivity this becomes a controversial area with different ethical view points. Euthanasia in the United Kingdom is performed by Veterinary Surgeons mainly by the use of an overdose of barbiturate in the form of a painless injection. The dog very quickly loses consciousness and its death occurs by depression of the vasomotor centres of its brain and its respiratory system (Boden, 2005).

For some organisations euthanasia is easier when an animal is suffering, in pain and terminally ill; this may be the only time they allow this to take place. Most Veterinary Surgeons will advise when this should take place if an animal is sick, unwell and begins to suffer. Particularly as some people hold the belief that in a healthy dog euthanasia, is a "*senseless killing of healthy animals*" (Serpell, 1994).

Some ethical points of views hold the belief that it is completely unacceptable for healthy animals to be euthanised because of undesirable behaviour or sheer volume of dogs and believe it is better for them to live at the organisation than be euthanised. Such perspectives often hold the belief that all animals have the right to life and the individual in the here and now that matters. In contrast, others hold the belief that if a dog is unhappy and/or aggressive it is better to make room for a dog that is not so difficult and has the potential to be rehomed.

The euthanasia of healthy dogs because of factors such as age, rehoming ability, aggression and the animal's poor ability to cope within a kennel environment is very controversial and there are clear differences in policy and practice.

Kennel employees aim to protect animals, and when they are euthanised they often have to deal with the guilt they may experience which is often dealt with using "*blame displacement as a mechanism*" (Frommer and Arluke, 1999). In such places dogs are assessed with regards to their attractiveness to potential owners which is competitive when making room for new animals coming in to their care (Serpell, 1994). This is often viewed as a paradoxical situation particularly when staff have formed strong attachments to individual animals and have got to know the individual "personalities" of each dog (Serpell, 1994).

Organisations need to have clear policies and procedures to deal with euthanasia as part of their work, to help avoid conflict and to ensure that dogs in their care do not suffer unnecessarily. Staff should also be aware of such policies before they commence employment.

These ethical views are similar when it comes to individuals having to make the decision whether to put their dogs to sleep or not. Some people will euthanise as soon as a dog starts to show signs of a terminal illness where others will allow their dog to die naturally with the help of medication to prevent suffering from a Veterinary Surgeon. In some circumstances, where animals have not been taken to the Vet as the owner may not have wanted to face the outcome, a report to either the RSPCA or the Local Authority may take place and the owner is then ordered to attend a Vet under an improvement notice within the Animal Welfare Act 2006 within a twenty-four hour period. If this does not take place the dog can be seized and put to sleep.

In whatever way a family pet dies, the owner and/or family can experience intense grief as can some staff within kennel organisations with particular dogs that they bond with. In such circumstances, the normal channels of grief may occur where the person experiences anger, bargaining, guilt, depression and acceptance. This period of time can last from anything from a few months to up to a year (Overall, 1997). Euthanasia can be a complex decision where the person feels they have a huge responsibility whether or not to end the dog's life, even if they are able to see the decreasing quality of life. Emotional bonds to dogs can be very strong and as the outcome of euthanasia is death the decision is difficult (Overall, 1997). As a result, staff should have support mechanisms in place to help deal with this aspect of their work. Euthanasia is an area where there will never be total agreement and policies for its use are specific to individual organisations.

2.8 Qualifications and training of staff

There are no legal requirements for staff to have qualifications unless they are employed as a Veterinary Surgeon. Although as a good practice guide, all staff should be monitored and trained to recognise animal's diseases and behavioural

problems. Staff should generally be confident with the animals they are dealing with (Trotman, 2001). In addition, they should also be realistic to the implications and context of their work especially if the organisation has a euthanasia policy. While some employers will offer staff on the job training and National Vocational Qualifications, others prefer to employ people that have academic ability (Young and shepherd, 2001) this can also affect pay scales. Kennels need a balance of appropriately qualified and experienced staff to help provide high quality care.

Appraisals can be used as a form of staff development and can be used to identify which areas are strong for individual members of staff and which areas need further development and training. This is a positive strategy to enable organisations to receive maximum potential from each member of staff. This is beneficial to both the organisation and the individual with regards to career progression and further development. This ensures that as staff progress to management level they have a clear understanding of animal welfare and its requirements. It also enables a good practice guide for the practice of animal welfare to be implemented.

2.9 Health and safety

It is a legal requirement within the United Kingdom for organisations that employ more than five people to have a written safety policy under the Health and Safety Act 1974; this includes risk assessments. An employer is also responsible for reporting to the Incident Contact Centre of the Health and Safety Executive, any accidents that have occurred which prevented a person working in their normal role for more than a period of three days. They also have a legal duty to report serious accidents such as broken arms and limbs, as well as diseases and provide first aid equipment as well as to train a proportion of their staff as First Aiders. In addition, when a person is injured this has to be recorded within an accident book, regardless of the severity of the injury (Directgov, 2008).

These legal requirements are important considerations within a kennel environment particularly as people can be at risk from dog scratches, bites and zoonoses. These risks can be minimised as described above in an environment where high standards of animal husbandry are maintained (Landsberg *et al*, 2004). Therefore, any injuries dog bites and/or scratches should be recorded in an accident book and seen by the First Aider on site so that they can assess if additional medical treatment and care are required.

Part of a company's health and safety policy, should include within their risk assessments, the behavioural assessment of new canine arrivals. This is beneficial if the dog is demonstrating signs of aggression regardless of the type of aggression shown. Experienced members of staff should be able to read a dog's behaviour thereby limiting the chances and opportunities for them to be bitten, thus maximising their safety (Houbt, 1991).

If a dog does attack a member of staff, serious consideration should be taken to whether the dog should be euthanised. Aggression in dogs is not curable although it can be controlled (Overall, 1991). However, this may be detrimental to every member of staff that deals with such a dog thus putting everyone at risk from a serious bite or incident. If a dog is staying at an organisation's kennels whilst a prosecution takes place, then all staff should be aware of the basics of the case if the dog has been involved in an incident or has allegedly bitten someone for everyone's personal safety. Aggression is discussed in more detail in chapter three.

In addition, the sound of dogs barking can exceed the 90 decibel limit as laid out by the Health and Safety Act 1974 (Houbt, 1991). This makes reducing the sound of dog's barking and the wearing of ear plugs / ear defenders an important factor in not damaging the hearing of members of staff.

2.10 Summary

It is crucial to maintain dogs' health and prevent disease in a kennel environment to minimise stress and unnecessary suffering. Organisations must have clear policies and guidelines to ensure high standards of care which are implemented by all members of staff and volunteers. Preventative measures must be in operation such as health checks on admission alongside treatment for fleas and worms. Health must be monitored regularly throughout the animal's stay. This must be recorded in well maintained kennel records to ensure good communication amongst staff. Veterinary treatment must also be administered as and when required. Quarantine and vaccination must be used as key elements in disease prevention. Staff should be trained to recognise signs of ill health and specific diseases to aid early diagnosis and treatment. Training should be ongoing using an appraisal system to ensure the organisation has a balance of qualified and experienced staff. Euthanasia must be used as appropriate, under the guidance of a veterinarian and within the guidelines of the organisation's policies. High standards of health and safety are crucial in maintaining a hygienic environment and to prevent the spread of diseases between canines and as zoonoses. In addition, all staff should be aware of all legal requirements with regards to accidents in the workplace.

2.11 Recommendations

- Clear written policies and procedures in place which outline: disease prevention measures, veterinary referral system and euthanasia guidelines
- Dogs should be treated for fleas and worms as soon as they enter the organisation and given a general health check
- High standards of hygiene and awareness of diseases
- Clear quarantine procedures
- Vaccination for all dogs as a preventive measure
- Routine disposal of dogs faeces
- Use of Trigen or other disinfectant that removes diseases
- All dog beds should be washed on a high temperature
- Staff should have a basic awareness of infectious diseases, their symptoms and preventative measures as a minimum
- All staff should be aware of their legal requirements for notifiable diseases
- Staff should always wash their hands after dealing with a possibly infectious dog
- Kennel staff should be vaccinated against Rabies when working in high risk areas
- All accidents should be recorded as a legal requirement which all staff should be aware of

Chapter 3 Animal Habitat Management

3.1 Kennel facilities

Several studies have shown that dogs need to be housed within a kennel that promotes psychological well being and the dog's physical health, the most effective way of ensuring this is to have the dog rehomed as soon as possible (Wells & Hepper, 2000). This is because rehoming a dog as quickly as possible would ideally provide an environment that is more conducive.

The standards of the Five Freedoms are a useful tool in determining whether or not the design of a kennel environment is adequate for an animal (Wilson and Turner, 1997). This means the kennels should provide the dog with a comfortable resting area with a shelter, access to fresh water, food, the ability to express normal behaviour and be free from distress, fear, injury and disease (Wester, 2005). The Five Freedoms are discussed in detail in Section 5.1 and were laid out by the United Kingdom Farm Welfare Council.

The design of a kennel is important within a rescue kennel environment as it makes a difference to potential new owners wishing to obtain a dog. The kennel environment seems to play an important factor for potential owners as it may promote the dog's potentiality (Wells & Hepper, 2000), for example, being able to view the dog's bed seems to be desirable to the public (Wells, 1996). In addition, potential owners often observe the dog's behaviour when assessing its suitability as a companion animal. Actions that can be perceived as undesirable such as excessive barking can make the difference to potential owners and dogs can be overlooked because of their behaviour. Other contributing factors are: if the dog is not seen as sociable, is not very alert and stays at the back of the kennel as opposed to at the front (Wells & Hepper, 2000).

Every breed of dogs differs with regards to its individual kennelling requirements. Other factors such as how long the dog is expected to remain in its kennel each day and the total duration of its stay are contributing factors that need to be considered in ensuring its welfare and meeting its needs (Wilson and Turner, 1997).

Kennel designs should allow dogs to be housed singly when and as required and together where possible (Wilson and Turner, 1997). They should also be constructed to be secure to prevent animals from being stolen or escaping; therefore they should have secure roofs (Masters *et al*, 2001). Larger kennels also allow for more habitat enrichment such as the hanging of toys (Wilson and Turner, 1997) which should be waterproof and non-chewable with no sharp corners or edges.

Allowing a dog access to an outside facility also enables it to relive itself in an area that is separated from its 'bedroom'. This can reduce stress especially with dogs that are house trained; it also benefits the dog long term as it reinforces earlier training. Where possible outside areas should also provide the dog with shelter from the sun; especially if the dog is shut outside while cleaning takes place. Sleep

quarters should also be sheltered and protected from the weather (Masters *et al*, 2001).

A dog is naturally curious regarding activity around the kennels which can be used to provide stimulation. High solid partitions prevent the dog from being able to gain information about its surroundings and where possible this should be minimised (Wilson and Turner, 1997) particularly as the dog may resort to spending excessive periods of time standing on its hind legs which can be detrimental to the development of young animals. Although in cases of dog on dog aggression high partitions prevent the dog being able to be aggressive towards its neighbour; thus preventing stress and minimising behavioural problems.

There are various kennel designs and each would depend on the space available and the costs involved. However, considerations need to be made with regards to the materials used and how long it takes to dry. Materials should not be easily chewable such as wood, metal can also be too hot to touch in the summer and too cold in the winter. The material should be able to harbour any microorganisms such as melamine and should be easy to clean and maintain. They should also have a solid floor for hygiene reasons and to help prevent the spread of diseases (Masters *et al*, 2001). Food and water bowls should be off the ground and securely fastened to prevent contamination or spillage.

Suitable bedding should also be provided for the dog within its living quarters. Blankets and towels are not adequate as they can hold water and urine causing discomfort and pose a potential infection risk. Whereas, specifically designed products such as 'Vet bed' provide insulation and dry bedding as it has an absorbent underside. This means the top of the bed stays dry as the underneath retains the liquid (Masters *et al*, 2001). They also dry quicker when washed than blankets and towels.

Heating should be supplied within the winter months from an appropriate source dependent on the kennel design. Under floor heating, fan heaters suitably and securely mounted on the wall or heat lamps usually suffice (Masters *et al*, 2001). Individual additional heating may be needed if an animal is young, elderly or sick which can be provided by using heated mats designed for animal use.

All kennels environments should have adequate ventilation which provides fresh oxygen; this supports the prevention of diseases. In addition, artificial light should mimic natural light as much as possible to reduce the pattern disturbances in photoperiod, which can cause stress (Masters *et al*, 2001).

Kennel furniture can be beneficial for some dogs as a form of stimulation (Wells, 2003). This has added benefits if the future is moved around periodically as it gives the dog different items within its housing facility to explore. Raised platforms have also been found to be beneficial within kennel environments (Hubrecht, 1993). This would also depend on the size of the kennels, yards and exercise areas available.

To prevent injury to the dog the platform should not be high. If a dog is frightened furniture should not be given for it to hide behind.

For dogs that are bred for scientific research, under European Union guidelines they are to be obtained from a licensed breeding establishment. These have legal requirements for the measurements of the kennel facilities. This does not apply for rescue organisations or local authorities, however, the Animal Welfare Act 2006 does state that *“the needs of an animal for which he is responsible are met to the extent required by good practice”* (Shaw and Son 2007). This Act is discussed in more detail in Chapter 5, Section 5.3.1. A version of the five freedoms is also listed within this Act. In addition, the Animal Boarding Establishment Act 1963 can state size requirements for kennels/pens, as can the Pet Animals Act 1951 as defined by the local authority concerned. These are discussed in more detail in Sections 5.3.7 and 5.3.9.

The kennel's design should take into consideration health and safety implications for staff and visitors, for example the height of each kennel should allow easy head room access for people (Masters *et al*, 2001). Drainage should also be an important factor; ideally all kennels should slightly slope towards a drain, drain channel or guttering to enable urine to drain away.

All aspects of the kennel environment should be easy to maintain both from a hygienic point of view and from a long term maintenance point of view. Consideration should also be placed on the type of dog being kennelled; what is suitable for a German Shepherd dog may not be suitable for a Pit Bull Terrier due to the destructiveness and power of the breed (Jessup, 1995). In addition, dogs that are housed together should have adequate room to be separated when fed due to aggression that may occur.

Some of the above factors can add to the dog's stress levels where others are purely good practice guides that should be taken into consideration with the Five Freedoms. With experience and time adjustments necessary alterations will occur and become apparent to inform the updating of the facilities.

The housing of dogs is important due to many different factors, from the importance of social interaction and isolation to territorial aggression, sexual reproduction and aggressive behaviour towards other dogs and humans.

On a practical level, most organisations are restricted by financial limitations and this can limit the amount of work and money that is available to make improvements. Some can be made in stages when and as funds become available and be phased in as part of a development plan. However, this should never compromise the animal's welfare or their quality of care.

3.1.2 Social Isolation and Interaction

Socialisation and interaction with people and other animals is important if dogs are to share their life without being stressed or fearful and to learn what acceptable behaviour is. Five to twelve weeks of age is a critical stage of socialisation for puppies therefore, to enable a puppy to interact with people and the external environment appropriately it is important to socialise the young animal. Social deprivation can result in the puppy becoming frightened of people and it may demonstrate behaviour such as growling, barking, running away, urinating and even biting. Behavioural problems can occur if a dog has been deprived of interaction with the external environment as well as people (Landsberg *et al*, 2004).

By twelve weeks of age, social deprivation can cause increasing fearfulness of new situations and unfamiliar items in the environment such as other animals and people (Ruvinsky and Sampson, 2001). Inadequate socialisation causes fear and lack of confidence in any new situation (Turner, 2004). The puppy will start becoming fearful of new sounds, sudden movements and changes, not being able to tell the difference between a dangerous and a normal situation; reacting in the same way to both forms of stimuli (Budiansky, 2003).

After 12 weeks of age it is more difficult and time consuming to teach a dog to become confident (Landsberg *et al*, 2004). Dogs learn social behaviour by interacting with other dogs, they learn warning signs which are important as an adult dog. They also learn other forms of communication such as play bow behaviour as an invitation to play. Therefore a young dog needs opportunities to develop and learn to understand and communicate with other dogs as well as with humans. This can help prevent future aggression. It also teaches a young dog bite inhibition (Stillwell, 2005).

Dogs are pack animals and leaving them alone for long periods of time is unnatural and can cause behavioural problems due to the lack of social interaction and companionship (Landsberg *et al*, 2004). In a kennel situation this can be compounded when housed singly due to “*the need for attention*” (Tod *et al*, 2005). Additionally, living within a restricted space may be an integral difficulty when kennelling dogs particularly when young (Tod *et al*, 2005).

When dogs are housed together, natural social ranking needs to take place and staff need to be aware of how to support this process (Petra, 2006). Dogs kennelled in pairs or groups need to be monitored to prevent and limit the threat of serious aggression (Wilson and Turner, 1997). Historically, a dog is a pack animal where natural hierarchy takes place as well as social interaction (Stillwell, 2005). Therefore, a lack of interaction with other dogs especially where dogs are housed singly can have a detrimental effect on its behaviour causing abnormalities. This is compounded by the limited amount of time staff spend with dogs usually due to time and staff constraints. Training and socialisation in an organisation with experienced

people may also be a useful way of identifying and preventing behavioural problems (Seksel *et al*, 1999). This could be useful for the advice and education of future owners and be beneficial when allocating a new owner. Physical contact with people can also help reduce cortisol responses where the dog experiences negativity such as during medical examinations (Hennessy *et al*, 1998)

A dog that is poorly socialised will express stress in various different ways within a kennel environment and in some cases it may be kinder to euthanise the animal.

3.1.3 Territorial aggression

Territorial aggression can occur in any dogs in a wide range of areas and can extend from them guarding their sleeping area to the whole area that they live in. Some dogs will only guard confined spaces such as cars, crates and kennels (Overall 1997). There are specific breeds of dogs that humans have bred for their aggression and for their territorial defence for a considerable number of years displaying associated behavioural traits (Ruvinsky and Sampson, 2001). Tenacious breeds that are bred to guard may demonstrate territorial aggression with entire male dogs being more likely than females (Landsberg, 1991). All staff that work within kennel facilities should be aware of dogs that display this type of aggression particularly when in confined spaces to ensure health and safety. Dogs do not usually behave in the same manner when removed from the kennel and/or a confined space (Overall, 1997).

3.1.4 Sexual reproduction

Bitches may enter oestrus in social rank naturally which enables the bitch to gain her priority of mating rights (Petra, 2006). This can be problematic within a home if two female dogs are not neutered and live together when both of them reach sexual maturity. Particularly if the owner of the dog supports one over the other; thus leading to both of the bitches fighting (Petra, 2006). The same is true of dogs that are housed together within a kennel environment; a bitch in season may cause problems with castrated males and non-castrated males as they can still exhibit the same competitive aggression towards each other for the bitch in season.

However, castrated male dogs are less likely to display territorial aggression than entire males and female (Landsberg, 1991). This is beneficial if the dog is not being used as a guard dog and is to be a family pet. Sexual dimorphic behaviour is connected to hormones and reproduction in dogs, which in some cases can be prevented or reduced if neutered. Female dogs that demonstrate dominant aggression may increase this behaviour if spayed (Overall, 1997).

Aggression in dogs is part of natural selection in the wild with regards to reproduction. Sexual selection is generally seen as the principal cause of sexual dimorphic behaviour and occurs in nearly all mammals (Turner, 2004).

3.1.5. Aggression

Aggression in dogs can sometimes be controlled however, it is not curable and if the owner lapses in their corrective responses to the dog it may revert quickly back into its aggressive behaviour (Overall, 1991). The same would apply for a dog within a kennel environment, which could in some circumstances make the dog potentially dangerous to people and other dogs as the non-aggressive dog may start copying the behaviour. Dogs live with a human society where biters and potential biters are often euthanised. However, dogs naturally bite and this is normal behaviour between them; especially if there is a perceived threat that they are unable to flee from. Most dogs will display their intentions beforehand (Donaldson, 1996). Aggression is a complex behaviour in dogs that is difficult to treat (Stillwell, 2005).

A dog being aggressive towards people in the home is often a gradual progression, such as allowing the dog onto the furniture and not making it get off when it growls (Sullivan *et al*, 2008). These are often forms of aggression that are sometimes considered to be amusing, especially when the animal is young or small, that then progress to either a serious bite or where the aggression can no longer be controlled and/or tolerated. This includes teaching a dog bite inhibition, a puppy biting should not be ignored, puppies need to learn that biting hurts or this may continue into adulthood (Stillwell, 2005). This also needs to be reinforced in a kennel environment.

Other forms of aggression can also be problematic due to the vocal behaviour that is sometimes displayed by barking which can effects other dogs. Breeds such as the Staffordshire Bull Terrier, which is historically connected with dog fighting (The Kennel Club, 2004) are more likely to demonstrate this kind of behaviour towards other dogs. As is the Pit Bull Terrier (Stratton, 1981), which is becoming increasingly popular within the United Kingdom. Whereas, breeds such as Border Collies can be affected more by displays of aggression and barking due to their sensitive hearing (The Kennel Club, 2003). Therefore, aggression, in any form, is more likely to cause stress to other dogs and/or increase their aggression if they have tendencies towards such behaviour, particularly if housed opposite or beside them. Therefore, where possible, such dogs should be moved to prevent stress and undesired behaviour. Euthanasia is also an option particularly where dogs display aggression towards humans and other dogs as it then becomes a danger within the community and it is always a possible threat.

Dogs can also display signs of aggression because of medical conditions and this should always be explored and ruled out first (Ruvinsky and Sampson, 2001).

3.2 Stereotypies

Dogs that are kept within a kennel environment especially for long periods of time can sometimes develop stereotypies due to severe kennel stress. This is often exhibited in actions such as tail chasing, serve barking, jumping and spinning as well

as lethargy and depression (Bollen and Horowitz, 2007). Stereotypical behaviour may serve as a coping mechanism in many cases, enabling a dog to deal with the environment it has been placed in. Therefore, it may not always be harmful in the short term as long as it is not damaging the dog (Luescher, 2004). Although compulsive disorders such as stereotypies do initially arise from frustration, displacement behaviours, anxiety, conflict, stress, behavioural arousal and even medical causes it is the most difficult behavioural problem to treat and diagnose (Luescher, 2004). Stereotypies are often found in environments where animals are confined and their behaviour is restricted, although this is not always the case.

A dog may display an obsessive compulsive disorder by continuous chewing, licking and even biting of the front paws and nails with no physical/medical reason for this behaviour. It may incur sores, red skin, patches and develop lick granulomas (Turner, 2004). A medical examination should always take place to ensure there are no underlying reasons for such behaviour (Landsberg *et al*, 2005).

Self-mutilation can start if dogs become stressed and/or bored and then develop into a habit. It can also be a behaviour that is associated with particular breeds such as the Bull Terrier which is known for circling and compulsive tail chasing (Dodman *et al*, 1996).

If a dog starts developing stereotypies then it is important to establish certain factors that may help reduce or limit the amount of time the dog displays this kind of behaviour. This includes establishing when the condition started, the frequency, duration, any changes that occurred, including activities that stop or limit the condition (Overall, 1997). With this information an experienced member of staff can ascertain what, if any, stimulus can reduce and/or limit the behaviour and the possible cause/onset of it (Overall, 1997). Stereotypies should always be discouraged when harmful or detrimental to the dog (Landsberg *et al*, 1997).

The possibility of the dogs displaying signs of stereotypies due to a medical condition should always be explored and ruled out first before any corrective behaviour and stimulus occurs. In some cases, the dog may need to be euthanised to prevent distress taking place.

3.3 Habitat enrichment

In some kennel facilities, dogs spend long periods of time on their own throughout the day, particularly if they are aggressive and difficult to handle. Generally, the physical restraint by placing a dog in a confined space such as a kennel as well as unsuitable stimuli is often viewed as reducing the standards of the dog's welfare within a captive environment (Lidewij *et al*, 2008). Habitat enrichment is important in providing a dog with both physical and mental stimulation. Particularly as most of the information it receives is through its environment and learnt through its senses (Stillwell, 2005). A dog's senses need to be stimulated in a kennel environment to prevent boredom, stress and behavioural problems. Habitat enrichment provides the

dog with opportunities to explore their surroundings and provides stimulation within a restricted environment.

3.3.1 Providing suitable enrichment

Historically, the dog used its developed sense of smell to trace pack members and prey. Today, the dog still uses its sense of smell to explore its environment; this can be seen when a dog sniffs the ground to determine who has been in the vicinity (Stillwell, 2005). Some studies have shown that it is beneficial to provide olfactory stimulation as this may enhance the dog's chances of being a desirable pet to potential new owners as well as being used as a method for increasing the dog's welfare (Graham, *et al*, 2004). A dog being able to use their olfactory system is an important part of their communication and encouraging a dog to use this may help reduce fear and encourage it to feed (Houbt, 1991). Food enrichment is a simple tool that helps promote the welfare of dogs within a contained environment especially where they lack adequate stimuli (Schipper *et al*, 2008).

In addition, dogs have acute hearing and can hear sounds that are inaudible to humans (Stillwell, 2005). Dogs have the ability to hear up to 15,000-60,000 cycles per second (cps) where we hear only 20,000 (Overall, 1997). Auditory stimulation in the form of background music can be beneficial to both people and dogs, particularly classical music which provides a beneficial environment for potential owners and contributes to the relaxation and positive behaviour of the dogs (Wells *et al*, 2002).

Dogs explore their environment with their mouth, particularly puppies, and so need to be provided with objects that they can mouth and chew. Therefore, food enrichment toys such as a Kong, (see Figure 2) made of rubber and stuffed with food, stimulate the dog's olfactory senses and exercises the dog which is beneficial, as a kennel environment lacks sufficient stimuli. This will help reduce the negative impact that a kennel environment can have and help reduce abnormalities in the dog's behaviour (Lidewij *et al*, 2008). Costs can be minimised with the use of a Kong as the dog's food can be split into two, with half served as a meal and the rest being put into the toy. Using this as a positive stimulus may help reduce noise levels, barking, boredom and behavioural problems in a kennel environment. This is because the dog plays, licks, rolls and even tosses it whilst trying to extract the food content; thus providing mental and physical stimulation.

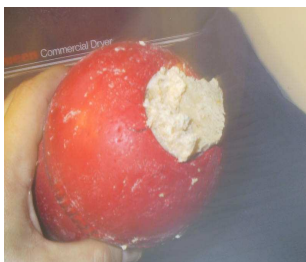


Figure 2: An example of a Kong, photograph taken by the author on the 16/8/07

Some studies have shown that a chewable toy acts as a positive stimulus and can help reduce behavioural problems in a kennel environment (Hubrecht, 1993). Although dogs behave differently to

stimuli, some will respond to it quicker than others (Overall, 1997). Rotating the toys once cleaned helps keep dog's interest in them rather than them blending into the environment.

Providing suitable exercise areas with furniture, stands, raised platforms, agility courses and so on, for the dog is beneficial in providing a change of environment. Additionally, hiding food provides stimuli as does changing the layout of the environment periodically. Although nervous dogs should be allowed time to settle and become familiar with the environment before such changes take place as this may increase their levels of fear.

There are a variety of toys available and designed specifically for canines. Stuffed toys should be avoided within a kennel environment as they may be ripped up and eaten and can cause serious medical problems. Squeaking toys should also be avoided as they may stress other dogs and cause problematic behaviour. Using tennis balls and Frisbees are excellent ways of exercising a dog (Stillwell, 2005). Providing alternative stimulation such as chasing a ball develops the dog's ability to interact at the same time as tiring it both mentally and physically. Providing training and socialisation will not only help limit unwanted behaviour, it also provides stimulation. In cases of young dogs, play can help teach bite inhibition and prevent aggression.

All toys should be appropriate for the breed and size of the dog, toys meant for large dogs such as German Shepherd dogs are not suitable for small dogs such as Yorkshire Terriers due to their different size jaws and power. Toys should not be fragile nor should they be able to be ingested (Landsberg, *et al*, 2004).

Using habitat enrichment can have beneficial effects on the stress and behaviour levels of the dog and prevent boredom and stereotypies. It is also a way of providing a good standard of animal welfare as laid out within Animal Welfare Act 2006, which is discussed in more detail in Section 5.3.1.

3.4 Behavioural Therapy

Behavioural therapy is also known as training classes which teach owners and handlers how to understand their dog and give the correct signs when trying to correct or undo undesired behaviour. Before training classes commence, a medical condition should be ruled out first as the behavioural problem may, in some cases, be due to an underlying illness or medical condition (Landsberg, *et al* 2004).

One of the important factors involved in the successful rehoming of dogs is to encourage new owners of dogs to attend training classes especially if the dog is known to have behavioural problems beforehand (Diesel, *et al*, 2008). Training classes help to enable an owner and/or handler to control and manage the undesired behaviour. Thus the combination of behaviour management techniques, education for the handler and environmental changes may have life changing possibilities for the dog (Landsberg, *et al* 2004). This may even prevent euthanasia in some cases.

The result of some studies show that there are many factors involved in a successful adoption and it is important that the new owners are informed of what to expect, are encouraged to attend training classes and are prepared to work on dealing with any behavioural problems that their dog may have (Wells and Hepper, 2000).

Hierarchy is a structured way of being for dogs which actually decreases fighting within packs. Problems can occur when owners and/handlers of dogs do not communicate effectively and/or give conflicting messages (Stillwell, 2005). A study of 5750 dogs that were rehomed by the Dogs Trust showed that behavioural problems were a huge hurdle for owners in their new homes. Owners who did not seek advice from the organisation or anyone when the dog demonstrated undesirable behaviour were often returned to the Trust. New owners also reported that they had not really known the effort and affect that owning a new dog would have. In addition, owners that did attend training classes to deal with behavioural problems were more likely to keep the dog and less likely to return it (Diesel, *et al*, 2008). Behavioural therapy teaches people to communicate with dogs without giving conflicting or confusing messages, thus developing a hierarchy where the “pack” can live together effectively.

Within a kennel environment, it is beneficial for staff handling dogs, to have at least basic knowledge of training and handling dogs. Otherwise the dog may be the one that suffers if it is incorrectly chastised. Behavioural therapy can take place over a set amount of weeks or can be on-going with no set end. There are also other forms of training that can channel a dog’s energy which can have beneficial effects such as fly ball and agility classes as well as general games and play time with it (Stillwell, 2005).

3.5 Summary

Kennel facilities must be designed to provide the dogs with a safe, hygienic environment which takes account of their physical and psychological wellbeing. Their accommodation should adhere to the Five Freedoms as a minimum, providing adequate fresh food and water, bedding, shelter, ventilation and heating. The dogs should be able to live free from distress, fear, injury and disease. Dogs should be housed according to their particular needs: alone, in pairs or in groups dependent on factors such as aggression and age. They should have opportunities for social interaction with other dogs and with humans to ensure they are well socialised and able to cope with their environment. Staff should be able to recognise dog aggression, especially with tenacious breeds as this has health and safety implications. Neutering can sometimes be used as a preventative measure.

Habitat enrichment and exercise opportunities need to be provided to help prevent stereotypies. In addition, behavioural therapies can be used to help prepare dogs for rehoming and to deal with any undesired traits they demonstrate.

3.6 Recommendations

- Kennels must be securely constructed from non hazardous materials and provide ventilation, heating and space for sleeping and some exercise. They must also take into consideration the five freedoms
- Kennel facilities should be updated regularly to maintain high standards of accommodation and to ensure they are appropriate to the animals in their care.
- Habitat enrichment must be provided to encourage natural behaviours and to help prevent behavioural problems, including stereotypies
- Consistent effective cleaning routines must be in place to ensure the dogs do not develop bad habits
- Dogs must be housed appropriately depending on their needs: alone, in pairs or small groups
- There needs to be adequate socialisation opportunities particularly for juvenile dogs and puppies
- All dogs should receive physical contact by humans during the day in forms of grooming, playing, training and exercising
- Behavioural therapy should be used to enable a handler to control and manage undesired behaviour combined with education
- New owners should be provided with after care and support

Chapter 4 Canine Behavioural problems in a rescue environment

How a dog manages to cope with its environment is an important issue with regards to animal welfare and the five freedoms. Dogs are immensely popular as pets, despite this; many are relinquished to shelters/rescues due to unwanted behavioural issues which can be exacerbated in a caged kennel environment (Wells *et al*, 2000). Studies have shown that the negative impact of such an environment affects a dog's ability to be rehomed and can lead to euthanasia. Due to this fact, a large number of dogs purchased from rescue centres are returned within four weeks due to behavioural problems (Hennessy *et al*, 2001). Many are unwanted because of excessive barking; the most common problematic behaviour was aggression caused by fear; which is often made worse in a kennel environment (Wells and Hepper, 2000).

Dogs that have been rehomed / adopted from a kennel environment often show an increase in undesirable behaviour and exhibit behavioural problems (Wells and Hepper, 2000). Over 30% of dogs brought into rehoming centres are voluntarily relinquished due to difficulties with behaviour (Wells and Hepper, 2000). In a survey of five hundred and fifty six people, 11% of dogs rehomed exhibited "excessive barking" within four weeks of them obtaining the dog (Wells and Hepper, 2000) with juvenile dogs being high on the list for exhibiting such unwanted behaviour. Although owners are not always honest regarding the reason for them relinquishing their dog as they often feel this will affect the possibility of the dog being rehomed (Wells and Hepper, 2000).

In shelters, a dog's unwanted behaviour can often get worse (Hennessy *et al*, 2001). Excessive barking being a major issue which is also considered to be a social problem (Kobelt *et al*, 2003) sometimes to the extent where dogs have been euthanized or even have parts of their vocal chords removed in a process often referred to as "debarking." This procedure only lowers the tone and pitch; it does not silence the dog (Cronin *et al*, 2003). Dogs that are barking when viewed for rehoming by potential owners are more inclined to be overlooked (Wells *et al*, 1999), especially as barking may be viewed as a sign of aggression (Christensen *et al*, 2006). Demonstrating aggressive behaviour through barking is more likely to be between entire male dogs especially if there is a female dog nearby in oestrus (Mertens, 2006). Undesirable behaviour leads to between 5-20% of rehomed dogs within the UK being returned to the shelter (Stephen *et al*, 2007). This is the rationale why some rescue centres are starting to try and reduce the effects that a caged environment has on the behaviour of a dog (Wells *et al*, 2000). Especially as some dogs do not adapt well to a shelter environment and exhibit severe kennel stress including repetitive behaviour and stereotypies (Bollen *et al*, 2007).

Some of the studies that have looked at reducing barking have involved using a citronella spray collar (Wells, 2001) and anti-barking muzzles (Cronin *et al*, 2003). The anti-barking muzzle "Husher" tires the jaw muscles of the dog thus limiting

barking, however, once the “Husher” was removed the dogs maintained the same level of barking as before (Cronin *et al*, 2003). The citronella spray works by surprising the dog with an odour which is triggered by a microphone that is attached to the collar when it detects barking and releases the spray (Juarbe –Diaz *et al*, 1996). After the first week of wearing the collar the amount of barking started to increase again even though they were still wearing the collars (Wells, 2001).

Trying to reduce barking is problematic as dogs will bark if they are stressed, however, they will also bark for a variety of other reasons such as aggression, attention seeking, fear, excitement and anxiety (Tod *et al*, 2005).

Having a dog as a companion can provide an owner with a wide range of benefits such as affection and even love (Hart, 1995) despite the fact that up to 90% of dogs display behaviours that owners’ find unacceptable (Vacalopulos *et al*, 1993), such as excessive barking (Lund *et al*, 1996). Excessive barking may also take place when an owner is not around as a coping mechanism for dogs which suffer from separation anxiety (Tod *et al*, 2005), especially if a dog had a previous owner that they had a strong attachment to (Marston *et al*, 2003). The period of time a dog spends within a shelter environment may have a long lasting effect on how a dog behaves within its new home once adoption takes place (Stephen *et al*, 2007). This is why it is important to try and reduce the effects of a caged environment (Wells *et al*, 2000).

Dogs that are purchased from a kennel environment such as an animal organisation or pet shop are more likely to display fear than a dog that is purchased from elsewhere (Wells and Hepper, 2000). Fear is often associated with aggression towards human beings especially when a dog is placed with an unfamiliar situation or person (Serpell and Jagoe 1995).

Male and juvenile dogs are more problematic than female dogs within rescue centres and organisations particularly with male on male dog aggression, sexual problems and a tendency to stray once rehomed (Wells and Hepper, 2000). Female dogs are more likely to demonstrate fearfulness of their environment which is the main reason for returning them to shelters (Wells and Hepper, 2000).

Most dog behaviors can be interpreted differently where in some cases the individual dog may be stressed and in others it may be excitement. Therefore, interpretation may only be truly meaningful and scientific when other physiological measures such as urine testing are completed along side behavioural observations (Beerda, *et al*, 2000).

These factors highlight the importance of reducing behavioural problems in a kennel environment and of preparing and educating potential owners thus limiting the possibility of the dog being returned. In addition, it is beneficial to provide behavioural therapies and sources of support such as training classes. These are discussed in more detail in Section 3.4.

4.1 Summary

A dog's ability to cope with its environment is crucial in ensuring its welfare. Behavioural problems can be triggered or exacerbated in a kennel environment where male and juvenile dogs often experience more behavioural problems. A wide range of strategies are available to deal with these issues. Behavioural therapies can be used to help deal with existing issues and help to prevent them in order to increase the possibilities of successful rehoming.

4.2 Recommendations:

- Staff must be trained to recognise undesirable behavioural traits and take appropriate action to reduce the effects of a caged environment
- Behaviour should be evaluated by an experienced member of staff to identify the reasons for its occurrence and implement an action plan to resolve the issue(s)
- Ensure owners are aware of the history of their new dog, its individual needs and the potential of any behavioural problems occurring
- Behavioural therapies should be provided and / or a list of local training classes for new owners alongside after care and support

Chapter 5 Animal Welfare, Ethics and Legislation

5.1 Animal Welfare

Defining animal welfare is not an easy task, however, using the five freedoms influences the way in which sentient beings are treated and kept within different environments as a general tool to define and analyse animal welfare.

The five freedoms are shown as:

- “Freedom from thirst, hunger and malnutrition – by ready access to fresh water and a diet to maintain full health and vigour.
- Freedom from discomfort – by providing a suitable environment including shelter and a comfortable resting area.
- Freedom from pain, injury and disease – by prevention or rapid diagnosis and treatment.
- Freedom to express normal behaviour - by providing sufficient space, proper facilities and company of the animal’s own kind.
- Freedom from fear and distress – by ensuring conditions which avoid mental suffering.” (Webster, 2005)

Ethical concerns over an animal’s welfare and quality of its life within the area of scientific research was the main reason that guidance on how animals should be treated was first introduced (Fraser,*et al*, 1997). Mainly due to the overlapping ethical concerns that were continually expressed with regards to the quality of an animals’ life, these are:

(1) that animals should lead natural lives through the development and use of their natural adaptations and capabilities,

(2) that animals should feel well by being free from prolonged and intense fear, pain, and other negative states, and by experiencing normal pleasures, and

(3) that animals should function well, in the sense of satisfactory health, growth and normal functioning of physiological and behavioural systems (Fraser, et al, 1997).

The five freedoms have development from guidance used to ensure the welfare of production animals; now also widely used in the welfare of domestic animals.

5.2 Animal Ethics

Animals, including dogs have provided human beings with not only companionship and comfort over the centuries; they have also provided humans with labour. Human beings have “owned” and used animals throughout history. Western societies initially implemented laws in the nineteenth century to protect animals such

as horses, cows and sheep. This later developed to encompass domestic animals such as dogs. Laws seem to be as a result of humans believing they have a moral obligation to protect animals as they are unable to actually protect themselves (Francione, 1995). This is why laws have continued to be implemented and updated reflecting a constantly changing society.

Historically, people have obtained dogs for a wide variety of reasons: from weapons of war in ancient times, to guard dogs for flocks of animals and today as guide dogs for disabled people. Dogs have also been depicted in art in prehistoric cave paintings and in 17th century Rembrandt etchings (Bruce, *et al*, 1997). In the 21st century, dogs are used for their functions as working dogs in areas like narcotic detection, search and rescue, through to companion animals and also for entertainment in 'Doggy dancing', agility and fly ball competitions.

Dogs are treated and viewed differently depending on their function, with wide debate across the globe, most clearly illustrated in cultures where dogs are eaten as a food source and not always regarded as pets. In addition, some animals are treated completely differently and are classed as members of the family (Royal College of Veterinary Surgeons, 2008).

There are wide ranging concepts on animal welfare and people have different ideas regarding how dogs should be treated, kept and looked after. Especially as within the United Kingdom there are so many ethical and cultural differences. Some people may own an animal and may not be aware of when it becomes ill or how to look after it particularly if it is kept in the garden. Some owners may even ignore an animal's suffering due to financial implications.

In addition, some people are cruel to animals and abuse them for a variety of known and unknown reasons. In a study by Arnold and Carter (1997) between 1975 and 1996 they found that dogs were the most common targets of abuse when it came to cruelty. They observed that most acts of cruelty were committed by people on their own and the dogs were stabbed, beaten, shot or thrown. There have been a wide range of studies that have tried and still continue to try and ascertain why such cruelty takes place and whether there is a link with childhood abuse (Felthous, 2005). This is a controversial area that science will continue to explore. In the meantime, all vertebrate animals are "Protected" under The Animal Welfare Act 2006 which not only outlines the animal's needs but also the responsibility of the person who owns or cares for them. This is to ensure minimum general standards are adhered to.

Other people treat their animals as babies and/or fashion accessories by dressing their dogs up and carrying them around particularly the smaller "toy" breeds. Dog "clothes" can range from full outfits with shoes/boots to items of jewellery. Some people think this is acceptable where others think this is also a form of cruelty.

Notions of animal welfare are often disparate. Some views believe that dogs should be neutered to prevent unwanted litters where others think neutering an animal is unnatural and that animals should have at least one litter. It is also a common belief, particularly in men, that male animals should keep their testicles and castration is wrong. In contrast, women often have a different point of view and do not look at this issue from an anthropomorphic point of view.

People also have different views when it comes to the functions of animal shelters and rescues. Some people would never allow their dog to put into such a place regardless of their circumstances as it is treated as a family member. Others would readily rehome their dog, particularly if it displayed an undesired behaviour or their personal circumstances changed. Some ethical points of view believe that all dogs are suffering and /or unhappy within centres and have a stereotypical view that rescued animals will be put to sleep. Whereas others understand that not all dogs are put to sleep and such places are needed and sometimes to prevent suffering euthanasia needs to take place. There is a clear difference with some people having an idealistic point of view whereas others may have a realistic point of view. Consequently, this is often a very emotive and controversial area where some members of the community would not even visit a rescue centre and others are able to be active volunteers.

It seems that animal welfare will probably always be a contentious issue where there will never be total agreement. For kennel organisations it is important that they recognise the context of their work and are equipped to deal with the potential ethical difficulties that arise.

As front line staff are dealing with the day to day issues regarding dogs and their environment they should be able to identify any changes that need to occur or areas that need to be developed. It may be beneficial to have one –to- one and group meetings periodically as good practice. This could be included within the appraisal schemes for the development of the individual and the organisation generally. This also enables effective communication between management and front line workers. Staff involved in the day- to- day running of the service; those dealing with the public and handling the dogs should have a direct input into the implementation and policy making. This enables people to feel valued and helps to ensure that the goals and aspirations are realistic and obtainable in their local community.

5.3.1 The Animal Welfare Act 2006

The Animal Welfare Act 2006 applies to all “protected” animals and gives the definition of “Protected” by stating:

It is the kind which is commonly domesticated in the British Islands,

(b) it is under the control of man whether on a permanent or temporary basis, or

It is not living in a wild state, (Shaw & Sons, 2007).

The said Act also states that an “animal” is defined as “a vertebrate other than man” and animal does not apply to “an animal while in it is in its foetal or embryonic form” (Shaw & Sons, 2007). This is also extends and includes invertebrates of any description.

The Animal Welfare Act 2006 states the responsibility that a person has for an animal whether on a permanent or temporary basis. This Act also outlines the basis for the prevention of harm for such animals and defines the circumstances to which unnecessary suffering has or may have taken place. Furthermore, the Act outlines the duties for the person responsible for animals to ensure their welfare to ensure the needs of the animal are met as a good practice guide. In Section 2, the Act outlines the needs which are similar to the five freedoms as:

For the purpose of this Act, an animal's needs shall be taken to include-

(a) Its need for a suitable environment,

(b) Its need for a suitable diet

(c) Its need to exhibit normal behaviour patterns,

(d) Any need to be housed with, or apart from, other animals, and (e) its need to be protected from pain, suffering, injury and disease (Shaw & Sons, 2007).

This Act gives all organisations that care for animals the legal responsibility for them whilst in their care. Therefore the needs of dogs within a kennel environment must be met with regards to its basic animal welfare needs as well as promoting the animal's welfare. Should a prosecution take place if a person contravenes this Act then the animal has to be kept as evidence through the prosecution, this can be a lengthy process and any dogs would have to be kennelled while this procedure takes place (Shaw & Sons, 2007).

5.3.2 The Dangerous Dogs Act 1991 (Amendment 1997)

The Dangerous Dogs Act 1991 gives the Police and Local Authorities the power to seize and detain any dog that they believe to be a Pit Bull Terrier Type or any of the other three named breeds within the Act. At the moment this is only one of other four named breeds that are known to be in the United Kingdom. Under this Act, the dog is either returned if the conformation type is not proven or if it is proved it must be registered on the Index. The court can either order the destruction of the dog or have the dog returned within an eight week period once it has been neutered, microchipped, tattooed, has third party insurance and is registered on the Index of Exempted Dog Register which is a government body. During this court process, which can be lengthy especially if appeals take place, the dog has to remain within kennels (Shaw & Sons, 2007).

The said Act also allows for the seizing and prosecution of any other type of breed of dog that is viewed as ferocious and is involved in an incident injuring a person. Again the dog needs to be kennelled while the prosecution takes place (Shaw & Sons, 2007).

5.3.3 The Control of Dogs Order 1992

Under this Order, Local Authorities may seize and detain any dog that is in a public place with or without an owner if the dog does not have a collar and a tag until the payment of a fine upon collection is paid by the owner. If the dog is not claimed within a seven day period the dog becomes the property of the Local Authority and they may either rehome or euthanase the dog. Until such time, the dog has to remain within a secure kennel environment: prosecutions for this offence may also take place, however, the dog does not have to be held while this process takes place (Shaw & Sons, 2007).

5.3.4 The Environmental Protection Act 1990: Section 149

Under this Act Local Authorities have to appoint an officer to seize and detain dogs that are unattended in a public place, namely a stray dog. Once the dog has been seized the owner may collect the dog once a fine is paid, until such time the dog is kept within a kennel environment for a minimum of seven days until it legally becomes the Local Authorities and they may then dispose of the dog by rehoming it or euthanasia. After seven days if no owner is found the same applies (Shaw & Sons, 2007).

5.3.5 The Breeding of Dogs Act 1973

Under this Act the Local Authority has to grant a licence for dogs to be bred which has to be renewed annually. The licence runs from the 1st of January each year up to and including the 31st of December the same year. Before a licence is granted an officer from the Local Authority or with permission from the Local Authority a Veterinary Surgeon has to inspect the premises where the bitches are kept for breeding annually. In addition, the Inspector may enter the premises throughout the year for an inspection without making a prior appointment. To obtain such a licence core licence conditions need to be adhered to and written records need to be kept to ensure the production bitches do not exceed more than one litter a year and no more than six litters in their life time. The breeding bitch cannot be bred from if she is younger than twelve months of age.

In addition to the core conditions, each Local Authority may write, within reason, their own licence conditions as an attachment (Shaw & Sons, 2007). During their production life span bitches are kept within kennel facilities and may not have lived outside of this environment. If a prosecution takes place in convention of this Act the animal does not have to be held as evidence (Shaw & Sons, 2007).

5.3.6 The Breeding and Sale of Dogs Act (Welfare) Act 1999

This Act is similar to the above Act and is in fact an updated amendment adding a new subsection to Section one of the Breeding of Dogs Act 1973. This states that the Local Authority must make a report on their inspection regarding the premises, the applicant and any other relevant information which should be considered before granting a licence. The licence conditions are also included within the licence as well as conditions regarding the sale of dogs which the licence holder has to adhere to be granted the licence. If a prosecution takes place in convention of this Act the dog does not have to be held as evidence (Shaw & Sons, 2007).

5.3.7 The Animal Boarding Establishments Act 1963

Under this Act the Local Authority has to grant a licence for dogs to be boarded which has to be renewed annually. The licence runs from the 1st of January each year up to and including the 31st of December the same year. Before a licence is granted an officer from the Local Authority or with permission from the Local Authority a Veterinary Surgeon has to inspect the premises where the animals are boarded. There are conditions attached to this Act which states that:

- *animals will at all times be kept in accommodation suitable as respects construction, size of quarters, number of occupants, exercising facilities, temperature, lighting, ventilation and cleanliness:*
- *animals will be adequately supplied with suitable food, drink and bedding material, adequately exercised, and (so far as necessary) visited at suitable intervals;*
- *all reasonable precautions will be taken to prevent and control the spread among young animals of infectious or contagious diseases, including the provision of adequate isolation facilities:*
- *appropriate steps will be taken for the protection of the animals in case of fire and emergency:*
- *a register be kept containing a description of any animals received into the establishment, date of arrival and departure, and the name and address of the owner, such register to be available for inspection at all times by an officer of the local authority, veterinary surgeon or veterinary practitioner authorised under section 2(1) of this Act.*

The difficulty with this Act is it does not define the meaning of terminology used such as what constitutes “appropriate”, “reasonable precautions”, “adequately” and “suitable” (Shaw & Sons, 2007).

The Inspector may enter the premises throughout the year without making a prior appointment and in addition to the core conditions each Local Authority may write, within reason, their own licence conditions as an attachment, which is disable as the

Act does not define how to maintain the dog's welfare whilst the dog is in the Boarding Establishments care (Shaw & Sons, 2007). If a prosecution takes place in convention of this Act the dog does not have to be held as evidence (Shaw & Sons, 2007).

5.3.8 Animals in Scientific Procedures Act 1986

This Act safeguards the welfare of laboratory animals while allowing medical research to be undertaken. Within this Act the costs, in terms of potential animal suffering, must be weighed against the potential benefits of the research.

The Act requires that animal procedures:

- Take place in research institutes or companies which have appropriate animal accommodation and veterinary facilities, and have gained a certificate of designation
- Are part of an approved research or testing programme which has been given a project licence
- Are carried out by people with sufficient training, skills and experience as shown in their personal licence (Animals in Scientific Procedures Act 1986, Electronic Document).

5.3.9 The Pet Animals Act 1951

Under the Pet Animals Act 1951 the Local Authority has to grant a licence for animals to be sold which has to be renewed annually. The licence runs from the 1st of January each year up to and including the 31st of December the same year. Before a licence is renewed an Officer from the Local Authority or with permission a Veterinary Surgeon has to inspect the premises where the animals are kept. There are core conditions that are set out by Defra which is a Government body; however, most Local Authorities have additional conditions attached to the licence. Some pet shops do sell dogs which need to be kennelled and in addition have an exercise and isolation area. If a prosecution takes place in convention of this Act the animal does not have to be held as evidence (Shaw & Sons, 2007).

5.4 Summary

The Five Freedoms can be used as a basis for ensuring minimum animal welfare standards are adhered to within a kennel environment. Organisations must have policies and procedures in place to help deal with the various ethical conflicts that can occur. All staff should have an awareness of cultural differences in the communities they provide a service for to minimise potential conflict. They also need up to date knowledge about the laws that affect their work dependent on their individual role.

5.5 Recommendations

- Staff should have training in the legal and ethical aspects of their animal welfare work including the implementation of the Five Freedoms
- Clear policies and procedures must be implemented to help manage potentially challenging aspects of their work
- If a dog is held in a kennel whilst awaiting a prosecution, staff should be made aware of the general outline of the case
- Some legal aspects may have implications which staff should be aware of; for example, if a prosecution for a Section 1 dog is taking place it is illegal to exercise such a dog in a public place

Chapter 6 Interview Summaries and Research Results

This chapter examines the practice of three organisations which operate kennel facilities. The research is based on the results of questionnaires answered in face-to-face interviews attached as appendices one, two and three. All of the centres have dogs in their care for long periods of time, two due to prosecutions that are taking place and the other whilst the dogs are waiting to be rehomed or collected as strays. They also pass on illegal dogs under Section one of the Dangerous Dogs Act 1991 to the Police when and as necessary.

None of the organisations have written policies and procedures in place to outline their general practices with the exception of Organisation one, appendix 1 which has a policy for kennel enrichment. Their policies seem to consist of verbal agreements rather than formulated documented guidelines. There are clear implications to this as it is not good practice and can be open to interpretations and misjudgement which can have serious consequences to the animals in their care.

The organisations vaccinate all dogs in their care as a preventive measure to limit the spread of disease. This aspect of their provision helps to adhere to the Five Freedoms thereby reducing stress and the associated behavioural problems. It is also a good indicator of high animal welfare standards as previously discussed in chapters two and five. Organisation one, do not vaccinate against kennel cough as they have found it to be ineffective within their kennel environment. As previously discussed, the kennel cough vaccine is not always successful and therefore this organisation believes that there is no reason to use this vaccine until it is improved. However, as an alternative they do have an isolation facility just for kennel cough to try and contain its spread.

Quarantine / isolation areas are used by all three organisations to contain infected dogs. Kennel staff in Organisation one, replied on Veterinary Surgeons and nurses to provide information regarding transmittable diseases. This is a cause for concern when they deal with a high volume of dogs on a daily basis. A lack of knowledge within this area increases the risk of transmission of contagious diseases if staff are not educated in this area. This practice needs to be improved to reduce the risk of zoonotic infection and to improve the immediate quality of care from an animal welfare point of view. However, they state that dogs are checked daily by a Veterinary Surgeon and/or Veterinary Nurse. Research clearly shows that the ability to identify symptoms of diseases quickly can prevent suffering and death. This indicates that wider staff training in this area is imperative.

The staff in the two other organisations state that they have knowledge of transmittable diseases and take appropriate action to contain them. Medication, observation, health check and treatment logs are used to record and communicate key information between colleagues. This can be regarded as good practice as detailed in chapter two. This is important particularly with the spread of zoonotic

diseases and to maintain good animal welfare standards. In addition, all staff within these areas wear protective clothing as a preventative measure.

All of the organisations operate a euthanasia policy for aggressive dogs, those deemed too dangerous to the public and those that are terminally ill. They all operate rehabilitation programs where possible for aggressive dogs and all have caution/aggressive dog pens that are separated from the other units. In addition, they all have a realistic view on the need for euthanasia which has been discussed in chapters two and five. Two other separate organisations that operated a non-destruction policy would not take part in this research. The reason for their refusal seemed to be because of the controversy regarding euthanasia and the reasons for their non destruction policy. Therefore, an alternative ethical view point was not able to be included within this report.

Two of the organisations accommodated dogs whilst prosecutions were taking place. One was actually rehoming illegal Section 1 dogs as defined by the Dangerous Dogs Act, 1991 due to their lack of knowledge and experience. None of the organisations were aware of the legal aspects of the prosecutions; only one acknowledged that the legal process can take from six months to two years to complete. They were not aware of the restrictions of walking such dogs in a public place, thereby putting themselves at risk of prosecution. This highlights the need for staff to have a general awareness of the prosecution cases particularly if the dog is deemed dangerous and has been involved in an incident where it has allegedly bitten someone. As this may put staff at risk; being able to obtain the dog's history should be part of their health and safety policy as outlined in chapter two.

The organisations state that habitat enrichment is used and dogs are provided with toys and chews, they are also given exercise. In addition, organisation one, do have a very good "Kennel Enrichment" policy which includes; environmental enrichment, constructive stimulation, motivations, group housing and training exercises. The other organisations do not have written policies in place which can prohibit effective communication. In some cases, this may mean that some tasks are not completed adequately or at all.

Exercising dogs which are aggressive towards people is difficult, although none of the organisations handle, exercise or interact with such dogs due to the health and safety implications. This can lead to behavioural problems, stress and in some cases increase the aggression. Although for the safety of staff and other people there is no other option available. All seem to understand the importance of social interaction and have large numbers of people that deal with their dogs as staff members and/or volunteers. Staff either have qualifications and/or receive on-going training which is mainly provided by the organisation itself.

Neutering vouchers are provided when an animal is rehomed. Additionally, Organisations two and three, appendix 2 and 3, neuter all animals that are old

enough at their time of rehoming. In cases where animals have been rehomed and are too young to be neutered they later follow these cases up and “convince” them to have the Animal neutered. In contrast, organisation one do not neuter all the animals they rehome and do not always chase these cases up, they also state that at times the new owners refuse to have their animal neutered. The importance of having an animal neutered and the possible behavioural problems associated with this are discussed in Section 3.1.4.

The organisations do not operate under a single code of practice and actually vary greatly in their provision with regards to animal welfare practice and guidelines. As such it would be beneficial to all in this field if a strategy could be agreed and adhered to ensuring that organisations work together to share good practice for the benefit of all concerned.

6.1 Recommendations

- Organisations should share good practice, information and education
- Further research should be undertaken to incorporate the views of organisations that operate a non-destruction policy
- Staff should receive internal and external training. This allows fresh ideas and insights to be brought back and expanded upon where relevant.
- Neutering should be compulsory to reduce the number of unwanted animals as a long term strategy
- Staff should be trained to recognise the symptoms of disease and ill health to aid early treatment and to prevent cross infection

Chapter 7 Recommendations

To reduce stress and behavioural problems in dogs kept within a kennel environment, the following recommendations should be implemented to ensure the dogs' psychological and physical wellbeing.

- Written policies and procedures must be implemented and reviewed regularly with regards to disease prevention, health and safety, euthanasia and the health and well being of the dogs in the organisation's care. Staff should be vaccinated against Rabies when working in high risk areas and be aware that all accidents must be reported as a legal requirement.
- Staff ought to be given ongoing training which covers all aspects of their individual work including being able to identify and prevent basic diseases and behavioural problems. They should also be encouraged to hold animal related qualifications, to maintain excellent kennel hygiene, awareness of ill health and all aspects of their wider role. Their work can be monitored and developed using appraisals to ensure that this incorporates the legal and ethical aspects alongside the Five Freedoms.
- Kennels must be securely constructed from non hazardous materials and provide ventilation, heating and space for sleeping and some exercise. They must also take into consideration the five freedoms. Kennel facilities should be updated regularly to maintain high standards of accommodation and to ensure they are appropriate to the animals in their care. Habitat enrichment must be provided to encourage natural behaviours and to help prevent behavioural problems, including stereotypies.
- Dogs must be housed appropriately and provided with adequate socialisation opportunities. All dogs should receive physical contact by humans during the day in forms of grooming, playing, training and exercising. Behavioural therapies should be used to enable a handler to control and manage undesired behaviour combined with education. Neutering should be compulsory to reduce the number of unwanted animals as a long term strategy. New owners should be made aware of the history of their new dog, its individual needs and the potential of any behavioural problems occurring.
- Organisations should share good practice, information and education to fulfil their duty of care. All staff members should be constructively involved in this process.
- Further research should be undertaken to incorporate the views of organisations that operate a non-destruction policy.
- Organisations should be imaginative in developing new ways to alleviate stress and behavioural problems within a kennel environment.

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