### Notes

### Lost & Found in Melbourne

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Australia has one of the highest proportion of dog ownership in the world, 40% of Australian, 38% of American and 34% of British households own at least one dog(BIS Shrapnel Global Marketing Intelligence and Forecasting, 1999). Widespread adoption of measures such as increased public education regarding pet desexing, reduced cost spaving/neutering. reduced registration fees for desexed animals and automatic desexing of all shelter stock (Olson, Moulton, Nett, & Salmon, 1991) have significantly reduced the number of dogs presented to shelters(Luke, 1996), but have also resulted in fewer puppies being presented, so that the typical shelter dog is now over 2 years of age(DiGiacomo, Arluke, & Patronek, 1998).

Shelters have very limited funding and kennelling space available, therefore large numbers of healthy rehomeable animals are euthanased each year simply because there is insufficient room for them. Shelter euthanasia accounts for one third of all canine deaths in the USA(Olson et al., 1991).Whilst there are numerous scientific publications concerning shelter dog statistics from elsewhere in the world (Hart, Takayanagi, & Yamaguchi, 1998; New et al., 2000; Salman et al., 1998; Scarlett, Salman, New, & Kass, 1999) there has been little published regarding Australian shelters and none comparing findings from different regions within a city.

The aim of this study was to identify and quantify the reasons for shelter admission, the duration of stay, the outcomes, levels of post-adoptive return and reasons that dogs are relinquished or returned to shelters post-adoption.

#### Method:

Canine admission data from 3 metropolitan shelters located in the city centre, suburban and rural fringe areas of Melbourne (approx. 21,000 dogs) was collected for a twelve month period. The three participating shelters all perform euthanasia as required. Data captured included admission details i.e. date and type of admission (stray or relinguishment), outcome and date of outcome. Information relating to the age, size, gender and desexed status of the dog were also collected. The fate of each dog was tracked as fully as possible and microchip data recorded when available.

#### **Results:**

Overall 84% of admissions were strays although there was significant variation between the three shelters, 92.7% of city admissions were strays, versus 80.1% at the rural and 71.5% at the suburban shelter (N=20,729, c2=1574.93, df=4, p< .0001).

Pups formed about one-tenth of total admissions, with proportionately more of them relinquished by owners compared to adult dogs (27.5% of pups compared to 13.6% of adults) (c2=287.3, df=2, p< .0001). Small dogs formed 42% of overall admissions, with a significantly greater proportion of city admissions. In contrast, the greatest proportion of medium sized dogs was admitted to the suburban shelter (34.8%) and large dogs to the rural shelter (33.6%) (N= 20,711, c2=251.56, df=4, p< .0001).

Compared with national figures there was an overrepresentation of males dogs (57.15% male: 42.85% female compared to 50:50) (c2=423.53, df=1, p< .0001) and sexually entire animals admitted (77.2% versus a predicted 39% (c2=129.36, df=1, p< .0001) (McHarg et al.

1995)). Sexually entire animals comprised 83% of city admissions but only 61% of admissions at the rural fringe (N=20,729, c2=626.33, df=2, p< .0001). Male dogs were significantly more likely to be entire than females c2=32.51, df=1, p< .0001) and strays were more likely to be entire than relinquished dogs.

Over half (54.9%) of all strays admitted were reclaimed, with approximately one third of all admissions were euthanased and one fifth sold. The suburban shelter sold the greatest proportion of dogs admitted (34.24%) whilst the city shelter euthanased the greatest proportion of dogs admitted (39.12%). A significantly greater proportion of stray dogs were reclaimed from the rural fringe shelter (65.06%; N=17,616, c2=1293.23, df=6, p< .0001). Male dogs were more likely to be euthanased than bitches at all shelters (N=11,846, c2=816.02, df=6, p< .0001).

The overall mean length of stay was 5.68 days but this figure is inflated by a small proportion of dogs that remained in the shelter environment for a long period of time, notably legally seized dogs awaiting legal resolution. Almost half of all dogs admitted to a shelter spent two or less days there. Significant differences in the length of stay existed between the shelters (N=20,723, c2=1739.62, df=8, p< .0001), with shorter stays observed at the city shelter (mean stay of 4.55 days, SD= 6.684) and longer ones at the suburban (mean 7.07, SD= 7.348) and rural fringe shelter (mean 6.52, SD = 9.263).

The vast majority of dogs were reclaimed in less than 3 days. There was a small but statistically significant difference between shelters regarding the average time taken to reclaim strays (F(2,9568) = 16.75, p< 0001), reclaims from the city shelter taking the least time (averaging 1.94 days), whilst those from the suburban shelter took the longest (averaging 2.69 days).

Only 15.1% of the total sample was relinquished by their legal owners (3123 dogs). Almost half of the relinquishers at the suburban shelter did not provide a reason for relinquishing their dog. Significant differences were observed in the reasons given for relinquishment at the different locations (N=3,123, c2=483.40, df=18, p<.0001). A higher proportion of dogs (7.22%) were relinquished at the city shelter for aggression, a low percentage of dogs were relinquished at the suburban shelter for owner-related reasons such as moving, life changes and health; however these figures may have been affected by the low response rate at this shelter. More dogs were relinquished at the rural fringe shelter because of canine behaviour issues or issues with an existing pet. Overall there waswere a very small percentage of dogs relinquished for owner-requested euthanasia.

The three most commonly reported canine behavioral reasons for relinquishment at all shelters were escaping. boisterousness/hyperactivity and barking. However, the relative proportions of these differed significantly between shelters (N=368, c2=92.02, df=50, p< .0001). Escaping was the most common reason for relinguishment at both the city and rural shelters whilst hyperactivity and boisterousness was the most prevalent issue at the suburban shelter (although interestingly barking was not such a prominent issue at the suburban shelter). Destructiveness featured more prominently among city relinquishments, and separation-related issues at the rural shelter. Housetraining appeared more of a problem

at the rural shelter. There were no significant differences observed in the ratio of dogs relinquished for aggression between the shelters.

Data relating to the reasons dogs were euthanased was not available from the suburban shelter, so the findings from the other two shelters are presented. Approximately one third (35%) of dogs euthanased by these organisations were euthanased for health reasons. A significantly greater proportion (N=4,846, c2=31.37, df=6, p< .0001) of dogs were euthanased at the rural shelter for aggression (27.4% compared with 23.7% at the city shelter) and temperament issues (22.66% compared with 19.8% at the city shelter). In comparison, more dogs were euthanased at the city for behaviour (9.8% compared with 7.7% at the rural shelter) and breed specific issues i.e. whether the dog is a PBT (5.9% compared with 3.28% at the rural fringe).

Overall 7.26% (320 dogs) were returned to the shelters post-adoption. At the suburban shelter, canine behavior problems and owner-related factors comprised 60% of the reasons for return (N=320, c2=28.66, df=12, p= .004), while problems with existing pets and escaping were cited less frequently than at the other two shelters. Dogs returned to the suburban shelter were significantly more likely to be resold compared with the other shelters (70% versus 55% at the rural shelter and 24% in the city) (N=320, c2=31.81, df=4, p< .0001). Approximately 59% of dogs returned to the city shelter were euthanased.

#### Discussion:

The proportion of desexed dogs admitted varies directly with the distance from the city centre, 60% at the rural fringe shelter (compared with the 74% at the suburban shelter and 83% at the city). The size of dog admitted to each shelter increases with distance of that shelter from the city centre, with small dogs being admitted more frequently to the city, medium size dogs to the suburban and larger dogs to the rural fringe shelter. Perhaps this is due to socio-economic factors or owners selecting appropriately sized dogs for the size of their properties. However, the catchment area of the city shelter actually covers 15 widely divergent municipalities (including rural and suburban areas), so factors other than the geographic location of the shelter are likely to be involved such as socio-economic or cultural factors of the catchment areas.

Six Melbourne councils provided registration data and identified that 85% of registered dogs are desexed, in contrasts with only 22% of desexed shelter dogs tracked in this study. This provides a strong indication that current desexing and compliancy messages are not reaching the owners of stray dogs.

Seasonal trends were observed in admissions at the suburban and city shelters, with a greater than average number of dogs admitted during December-February. This could be the result of increased escaping during thunderstorms and New Year fireworks, but the more stable pattern seen at the rural fringe shelter does not tend to support this explanation. Similarly, increased straying and shelter admissions in summer could result from people being more active outdoors and inadvertently leaving gates open, again we would expect to see the same trend at the rural shelter. Perhaps, the more stable admission pattern at the rural shelter rather reflects the demands of animal husbandry or horticulture in the country, with a concomitant reduction in the ability of the rural community to take regular holidays. Further research would clarify these discrepancies.

The relationship of relinquishment reason with location may enable strategic educational interventions to be formulated by councils and animal welfare agencies aimed at preventing behaviour problems becoming sufficiently severe to warrant relinquishment. For example, suburban owners could be targeted with techniques to combat hyperactivity and boisterousness, whilst city dwellers could be educated in techniques to quieten barking dogs or reduce destructiveness.

Shelter admission, itself can negatively impact upon dog behaviour, the effects can last a lifetime and result from even a short period of confinement(Senay, 1966), as little as two weeks kennel confinement (without enrichment) is enough to alter some dog's behaviour(Coppinger & Zucotti, 1999). Environmental factors can have significant negative effects upon canine welfare(Hubrecht, 1996; Sales, Hubrecht, Peyvandi, Milligan, & Shield, 1997), resulting in extensive physiological (Beerda et al., 1999; Hennessy, Voith, Buttrania, Miller, & Lindetic, 2001; Beerda et al., 1999; Tuber, Sanders, Hennessy, & Miller, 1996) and behavioral changes(Beerda, Schilder, van Hooff, De Vries, & Mol, 1999; Beerda, Schilder, van Hooff, De Vries, & Mol, 1998; Senay, 1966), particularly increased excitability, aggression and the development of stereotypies(Dean, 1999; Bayne, 2003). Other stressors include high noise levels (over 120db has been reported)(Sales et al., 1997), exposure to novelty, isolation from previous attachments, disruption of routines, prolonged confinement and reduced interaction between peers and humans. Understanding this then, it is vital to ensure that regulated 'holding' periods are minimized whilst still enabling the majority of owners to reclaim their dogs. The clear majority of reclamations in this study occurred within four days of admission. Whilst reducing this period to four days would substantially reduce the negative impact of a shelter stay, it might result in more dogs being euthanased. However, the imposition of an escalating reclaim fee structure based on the number of days that the dog is housed at the shelter, might be a way of encouraging the rapid reclamation of dogs.

Australians shelter statistics differ from those available from the USA. Australians relinquished a fewer dogs (with very few for euthanasia), return dogs post-adoption far less frequently (7.2% versus 22%) and experience different behavioural problems with their dogs. Escaping does not appear to be a problem for American owners and hyperactivity / boisterousness is reported to a much lower degree.

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# Linda Marston

Linda is currently completing her PhD in Psychology through the Animal Welfare Science Centre located at Monash University. Her particular research interests are animal welfare and human-companion animal interactions. She has extensive experience with dog training and is investigating factors that affect the success of dog adoptions from animal welfare shelters. The first part of the project involved establishing good baseline data concerning the types of dogs admitted to shelters and the range of outcomes experienced. She is now focusing on identifying those factors that determine how the dog bonds to its new owner. She is also looking at methods for reducing the negative effects of shelter admission on the dogs. This involves modifying the shelter environment slightly using environmental enrichment, examining the effect of providing in-house training to reduce behaviour problems, reviewing the assessment protocol used by shelter staff, investigating and researching the effects of follow-up obedience classes for persons who adopt dogs from the shelter. Her work will provide important information about shelter dogs that can be used to improve the number of dogs rehomed and the success rate of adoptions. The information about how dogs form bonds with their new owner is likely to have relevance for all new dog owners.