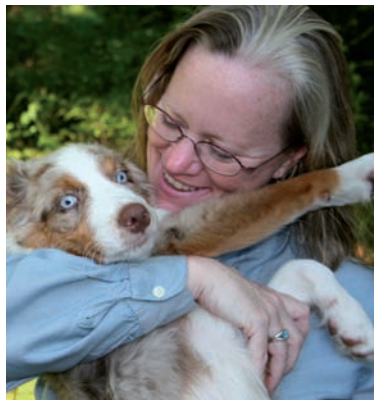
Viewpoint

Preventing dog bite injuries: the need for a collaborative approach

Prevention of dog bites injuries in people requires an open-minded multidisciplinary approach that recognises the interaction between the dog, the human and the environment in which they interact, say **Tiny de Keuster** and **Karen L. Overall**



AS specialists in veterinary behavioural medicine with a commitment to promoting safe and humane interactions between dogs and people, we read with interest the recent letters by Mannion and others in *Veterinary Record* (June 4, 2011, vol 168, p 594) and in the *British Journal of Oral and Maxillofacial Surgery* (Mannion and others 2011) discussing recurrent dog bite injuries in people. We wholeheartedly agree that the human and veterinary medical communities must work more closely in truly collaborative relationships to provide accurate, data-based advice and education that will mitigate the risk for both dogs and their owners.

The data cited by Mannion and others from Stefanopoulos and Tarantzopoulou (2005) are for catastrophic bites involving surgically attended facial wounds. As such, these are atypical dog bite wounds in adults (Gershman and others 1994, Weiss and others 1998). In contrast, dog bites to young children often result in facial or neck injuries (Beck and others 1975, Wiseman and others 1983, Brogan and others 1995, Weiss and others 1998, Overall and Love 2001, Bernardo and others 2002, Kahn and others 2003, Hoff and others 2005). Older children are more commonly bitten on the extremities, as are adults (Guy and others 2001). The incidence of facial bites in children appears unrelated to the size of the dog but correlates with the age of the child (Bernardo and others 2002, Kahn and others 2003), emphasising the role for oversight when young children interact with dogs.

Mannion and colleagues note that the catastrophic bite that prompted their letter was from the family dog, which had earlier bitten this same 28-year-old female on the face. This finding is interesting and important in light of work by Cornelissen and Hopster (2010) that showed that more than 60 per cent of people bitten by a dog could identify a trigger that resulted in the bite, and that children were bitten intentionally (versus accidentally) in non-public places more often than adults. The nature of the wound described by Mannion and colleagues suggests that some aspect of human behaviour increased the risk of a catastrophic bite.

We concur that there is a significant lack of aftercare and prevention strategies in most dog bite cases (Bernardo and others 2000, Hoff and others 2005, Bingham and others 2010). We recommend examination of any role the medical profession can play to help patients who have been bitten in terms of reporting the bite to a database (Bernardo and others 2002), the purpose of which is accurate risk assessment and ultimate mitigation of such risk. At present, no such universal database exists.

Furthermore, at the first sign that any dog may bite or the first time any dog does any damage, whether the behaviour that caused the damage was intentional or accidental, advice should be sought from a competent veterinary professional. Paediatricians, surgeons and emergency personnel should make this recommendation. Unfortunately, the vast majority of veterinary schools around the world lack a full-time specialist in veterinary behavioural medicine and a full-time teaching and research programme in this field. As a result, veterinarians receive uneven, or possibly no training in the public health aspects of dog bites and their prevention, and in the humane care concerns for dogs whose recourse is to bite. Were veterinary schools to assume responsibility for such training they could act as central repositories for standardised data collection and evidence-based recommendations.

Currently, there are sufficient data to allow the veterinary surgeon to play a major role in primary and secondary prevention of dog bites by teaching owners to accurately interpret dog behaviour and the context in which behaviours of concern occur (Cornelissen and Hopster 2010). One of the main roles played by veterinary staff for clients with dogs, especially if they also have children, is that of anticipatory guidance (Iazzetti 1998, Love and Overall 2001, de Keuster 2005, de Keuster and others 2006). A correlate of this approach is that after every dog bite, owners should be referred for a behaviour consultation and risk assessment (de Meester and others 2011) and secondary (post-bite) prevention training, with the intention of helping the dog, the owner's family and this important relationship.

Primary and secondary prevention of dog bites requires an open-minded, multidisciplinary approach that includes:

- Analysis of the problem or potential problem by examining the roles played/potentially played by the dog and the human and the environment in which the dog and human interact.
- Acknowledgement and assessment of different risk factors contributing to the

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accident by asking which are/could be dog-related, victim-related and context-related.
- Investigation of the risk factors with respect to the risk of recurrence and the risk of injury. It is important to note that these are separate risks.
- Elucidation of options for prevention of bites from the dog in this particular situation.
- Assessment of how the owners feel about the potential risk and their ability to anticipate and modify it.
- Assessment of how, exactly, veterinary professionals can provide help for the dog and its owners.

Unfortunately, the short-cut solution that is often applied and is mentioned by Mannion and others – euthanasia – addresses none of the requirements of the approach elucidated above. Furthermore, owners avoid seeking help for a variety of veterinary conditions, including those associated with aging and serious disease, if they believe that the recommendation will be euthanasia. Fear that euthanasia is or will be the recommended choice delays or prevents exactly the treatments and interventions that could actually lower the risk of the dog's death and, in this case, make the situation safer. Before assuming that euthanasia of the dog is the solution for all incidents of medically attended dog bites, especially given that we now know the role that human behaviours play in the instigation of such bites and the damage they do (Guy and others 2001, Cornelissen and Hopster 2010), we should consider the following:

- The primary reason for mortality and morbidity in children under one year of age in the western world is trauma (eg, drowning in swimming pools, falls from stairs, burns), 40.6 per cent of which occur in the child's own home, again suggesting a role for oversight in risk mitigation.
- In contrast, dog bites in children and youngsters represent only a small part of burden of injury presenting to emergency departments (0.2 per cent of emergency visits) (Van de Voorde and others 2008).
- In the Netherlands, approximately one person dies from a dog bite each year, but during that same period there are 11 fatalities due to sports injuries and 23 from household accidents (Landbouw natuur en Visserij [LNV] 2008).

In an effort to create an enduring, non-sensational environment in which risk is accurately assessed and mitigated, the Blue Dog project (www.bluedog.org) has made an attempt to educate families and their children to teach them awareness, to help them start viewing 'the problem' from the dog's perspective, by trying to understand 'what is happening with my dog', and by encouraging families to seek professional advice, rather than resorting to short cuts like abandonment, replacement, relinquishment

Photograph: Sylvie van Hecke

Accidents can occur with the family pet. These can be prevented if owners understand how their dog might react when, for example, a child approaches the dog in a context the dog feels uncomfortable with

or euthanasia. These are extremely reasonable goals.

We agree that the best way to meet these goals is within an interdisciplinary approach that allows for ongoing reliable data collection and analysis, evidence-based risk mitigation and ongoing professional education. We conclude with the following supporting thoughts.

- Dogs are part of many families, for example, 35 per cent of families in Belgium (Kahn and others 2003), 22 per cent of families in the UK (Pet Food Manufacturers Association [PFMA] 2011) and 39 per cent of families in the USA (Humane Society of the United States 2011).
- Dog bites occur because of a variety of factors relating to the dog, the human and the context in which they interact.
- In the home 90 per cent of dog bites appear to be triggered by an action from the human (adult/child) towards their pet dog.
- By helping people to understand why an accident has happened and how it can be prevented in the future, families and pets can be helped to search for and find solutions.
- In cases where the dog suffers from a condition that cannot be successfully and adequately treated and/or is in a family context where prevention appears to be an impossible task, euthanasia can be a consideration as an option to protect people and to address animal suffering. However, this recommendation should come at the end of a long list of interventional strategies, not at the beginning.

We may be further helped in this approach by recognising that euthanasia represents our failure in providing anticipatory guidance, in understanding both canine and human behaviours and the contexts in which they interact, and in communicating these messages in an evidenced-based manner that can humanely effect change.

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doi: 10.1136/vr.d5809

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Veterinary Record 2011 169: 341-342
doi: 10.1136/vr.d5809