Approaches to dog health education programs in Australian rural and remote Indigenous communities: four case studies

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SUMMARY
Dog health in rural and remote Australian Indigenous communities is below urban averages in numerous respects. Many Indigenous communities have called for knowledge sharing in this area. However, dog health education programs are in their infancy, and lack data on effective practices. Without this core knowledge, health promotion efforts cannot progress effectively. This paper discusses a strategy that draws from successful approaches in human health and indigenous education, such as didirri, and culturally respectful community engagement and development. Negotiating an appropriate education program is explored in its practical application through four case studies. Though each case was unique, the comparison of the four illustrated the importance of listening (community consultation), developing and maintaining relationships, community involvement and employment. The most successful case studies were those that could fully implement all four areas. Outcomes included improved local dog health capacity, local employment and engagement with the program and significantly improved dog health.

Key words: community health promotion; indigenous health; dogs; education

INTRODUCTION
Many aspects of dog health in many Aboriginal and Torres Strait Islander communities are poorer than Australian suburban averages (Palmer and Presson, 1990; Wilks, 1999; Constable et al., 2008), due to factors including poorer access to veterinary services and variable levels of dog health knowledge (Constable et al., 2008). This is important not only in terms of dog welfare but also because it impacts on human health. For example, dogs and people in remote Indigenous communities have been found to share specific pathogens such as Salmonella spp. (Brown, 2006), and people experience transient scabies and skin sores from close contact with mangey dogs (Speare, 2006). Because dogs can have important roles in many Indigenous cultures such as spiritual guarding and companionship, their health and well-being impacts on community pride or conversely, worry and shame, and thus impacting on mental and spiritual health. Furthermore, understanding of health concepts such as germ theory, disease transmission, infection and immunity, hygiene and balanced nutrition are underlying concepts of both dog and human health promotion. Concepts learnt in relation to dog health are reported to have been applied to owner health (Prouse, 1993). If applied more widely,
appropriate dog health education programs can provide the foundation for health promotion programs to impact on social determinants of health by improving engagement, employment and empowerment.

The most common approach to health education programs in the veterinary sphere, involves the development of the program by outside experts and delivery to the community (Hopkins, 1994). This approach is well documented as inappropriate in human health and education (Keeffe, 1992) to the point that some no longer consider it relevant as a health promotion model (Jacobs, 2011). This is beginning to be recognised in companion animal education too (Hindle, 1992). The Australian Centre for Public Health Research recommends that to be most effective, health programs need to work within the community’s culture, to build capacity and support community networks and thus empower the community. This echoes findings in the Indigenous education field, where many researchers see working with and through culture as crucial for Indigenous education to succeed (Enemburu, 1991).

In low socio-economic and cross-cultural settings, health and education programs developed and implemented independent of the local community can also increase the sense of powerlessness and dependence. This adds to the lack of opportunity for communities to develop the skills, relationships and self-confidence necessary for community health action (Wilkinson and Sidel, 1991). For Indigenous Australian communities, this approach perpetuates the ‘Aboriginal disadvantage’ stereotype, with the ‘solution’ often being assimilation to western culture (Keeffe, 1992). In contrast, Community Development and Health Promotion theory advocates maximizing community involvement, participation and control, in order to ensure that initiatives are locally appropriate and sustainable, and work to empower local people (Wiggins, 2011).

Community engagement in health and education requires understanding and working within the world view and values of the community. For example, in many Indigenous world views, health is not just the absence of disease, but optimal functioning of mind, body and spirit, and interlinks with the social, emotional and cultural well-being of the whole community (Vass et al., 2011). A health program in an Indigenous community that limits itself to a western medical view of health is thus unlikely to satisfy the collective understanding of health and well-being. To address these broader health perspectives, a social community approach is necessary (Golds et al., 1997; Heil, 2008). Health personnel thus need to learn how to collaborate with communities, how to learn from communities about both their needs and their strengths, and to learn with them about the mechanisms to produce effective health care and social change (Smith and Herbert, 1997). The success of health and education programs is thus dependant not only on the political and social will of the community but also on extra-community workers adopting new work approaches (Wilkinson and Sidel, 1991).

This paper describes an approach based on successful principles and methodologies in human health and indigenous education globally, and explores applications to dog health programs in four Indigenous communities in Australia from 2007 to 2010.

METHODS

Literature review

A literature review was conducted to identify culturally appropriate, community engaging approaches across many fields. These included the concepts of Both Ways Learning, negotiated or generative curriculum, and dadirri (see below).

To avoid assimilationist tendencies, research approaches often expound for the relationship between the researcher and the community to be balanced. The researcher should not ‘take’ data from the community without giving back in some way, nor should an educator ‘give’ knowledge to the community without first receiving learning about that socio-cultural context (Wunungmurra, 1988; Yunupingu, 1994; Mack and Gower, 2001). Having the role of researcher and educator combined helps to address this balance, connecting the ‘give’ and ‘take’ explicitly. It also helps to ensure the cultural appropriateness of the process as the one person spends more time with the community, understanding the local situation better and having more time to develop appropriate relationships, a crucial part of engaging with Indigenous cultures.

In the educational sphere, the call for balance has resulted in methods such as Both Ways Learning (Marika-Mununggiritj, 1990), and
negotiated or generative curriculum models. In this model the curriculum is generated by the needs and interests of the participants as the program progresses, rather than imposed by external decision makers. Generative curriculum models have been successful in tertiary education programs for indigenous students in Canada (Ball, 2004), and adult Indigenous language workshops in Australia (Calgaret et al., 1998).

In the research sphere, the need to integrate Indigenous philosophies into research methodologies has gained important ground through the concept of dadirri. Ungunmerr (Ungunmerr, 1993) says of dadirri:

In our Aboriginal way, we learn to listen from our earliest days. We could not live good and useful lives unless we listened. This was the normal way for us to learn – not by asking questions. We learnt by watching and listening, waiting and then acting. Our people have passed on this way of listening for over 40,000 years. (Ungunmerr, 1993, p. 35)

Dadirri refers to a process of non-intrusive observation, a reflective non-judgmental consideration of what is being seen and heard and a sense of the informed responsibility that comes with knowledge (Atkinson, 2002). It is the first step to meaningful communication, understanding and relationship building, which form the foundations of appropriate interaction in cross-cultural contexts.

Approach and processes
In framing the approach and processes used in the dog health programs, we classified the dadirri concepts into steps of listening, thinking, discussing and acting.

Listening
As reported in Constable et al. (Constable et al., 2008), a needs analysis was conducted in each community to clarify the dog health issues present and the factors influencing them. Semi-structured interviews with community residents in focus groups or individually (as preferred by respondents) were conducted to explore motivation, knowledge of issues, knowledge of solutions and access to solutions. At the same time in each community, a clinical dog health survey was conducted to provide baseline quantitative measures of dog health.

Thinking and discussing
The results of the needs analysis were reported back to community representatives and discussed. A team of interested community residents and extra-community professionals was formed in each community to consider the issues further. This local dog health team negotiated the community’s dog health priorities and decided on preparations required and actions to be implemented in the dog health program.

Acting
In each of the four communities, on the basis of the dog health team’s considerations and preparatory work, a plan of action was decided upon and instigated, and aspects of the program activities evaluated through further interviews and discussion. This iterative approach kept the program responsive to community feedback and able to adjust to suit new directions and actions.

The researcher (S.E.C.) was a member of the dog health team formed in each community through the thinking and discussion process. As a veterinarian and educator, this researcher also took part in the dog health education initiatives. Throughout all activities in each community, this researcher took notes, and then discussed them with other dog health team members to ensure their validity. These notes then formed the basis for the case studies in this paper. Throughout this process, the researcher kept in mind the need for external knowledge to be balanced by community knowledge, and to facilitate rather than direct activities. Although this role was unfamiliar at first, it became habitual with practice and with the increasingly positive response from team members and community residents.

Clinical dog health survey
This survey is described in detail in Constable et al. (Constable et al., in preparation). In brief, the prevalence of mange-like signs was used as an indicator of dog health because sarcoptic mange was an infectious disease prevalent in all four communities (Constable et al., 2009) that is highly responsive to treatment (Paradis et al., 1997), and therefore a suitable indicator of the effectiveness of the dog health programs. In each community, a house-by-house survey was conducted before and at the conclusion of the program and a visual assessment, based on the
scale of Pence et al. (Pence et al., 1983), undertaken to provide an estimate of the prevalence of dogs exhibiting mange-like signs. Dogs with no hair thinning were deemed to have no mange-like signs, whereas dogs with any degree of hair thinning or hair loss were deemed to be showing mange-like signs. Fisher’s exact test (Genstat, 14th edition) was applied to pre- and post-program mange prevalence figures, and confidence intervals were also calculated for the prevalence estimates.

Community profiles
The communities in this paper were part of a large research project studying dog health in rural and remote Indigenous communities. Communities representing diverse geographic locations and thus a variety of dog health situations were approached to gauge interest in working with the large project, and both the researchers’ and community’s needs and resources were discussed. From this process, nine communities became involved in the larger project. The four communities that were interested and prepared to engage in education work form the case studies presented in this paper.

Demographics of the four communities are presented in Table 1. The Accessibility and Remoteness Index of Australia (ARIA) scores for these communities lie between the ranges of moderately accessible (3.51–5.80) to very remote (>9.08–12) indicating significantly restricted accessibility to goods, services and opportunities for social interaction, through to very little accessibility to the same. For the Index of Relative Socio-economic Disadvantage (IRSED), scores are ordered for all communities across Australia from lowest (most disadvantaged, e.g. Palm Island Qld: 480) to highest (least disadvantaged, e.g. Northern Sydney Area, NSW: 1121.00).

Community 1. Community 1 is home to people from two main language groups. In the past, dog management consisted of dogs being routinely rounded up by non-Indigenous residents and shot. Community pressure against this approach led to the council employing the first veterinary program 2 years before the research program. The community had had only this one veterinary program in living memory, and thus minimal experience of veterinary dog health programs.

There was no local employment in animal management.

Community 2. Community 2 is home to Indigenous people from all over Queensland. Veterinary programs had existed from time to time in the past, and local Indigenous environmental health workers (IEHW) undertake some dog health work. These dog health workers (DHWs) had been involved in school visits in the past DHWs were already undergoing training through local higher learning institutes about many aspects of animal management including disease treatment and euthanasia; however, the practical and locally relevant components of these were small, and had not been applied to the local dog health program.

Community 3. Community 3 has one main language group. It had veterinary services in the past, though these were irregular at times. It employs DHWs though many have not been trained and were not engaged in dog health treatments.

Community 4. Community 4 is home to five major cultural groups and languages. There is a history of dogs being shot by pastoralists, dingo-hunters and animal management services for management purposes. DHWs conduct regular dog parasite treatment programs but there were no veterinary services.

RESULTS

Listening
Across all four communities, 84 residents participated in needs analysis interviews. Respondents in all communities identified areas of concern in relation to dog health. These corresponded with the findings of the clinical dog health survey (Constable et al., 2008) in several respects. For example, mange was an important health issue identified in both interviews and clinical examinations.

The kids weren’t itchy before, then a leatherback [mangey dog] came. The pups got itchy and lost their hair, and then the other dogs too. Then my son got itchy. Had to take him to the clinic. The dogs lie in the blankets and make em itchy at night. Respondent 13/community 1
A lot of people really like their dogs around here, scabby as they are, you try and take them and they lock them in the cupboards, hide them in the bathroom. Respondent 21/community 2

However, the clinical survey also found problems that were not identified by the community, for example, gastrointestinal diseases (such as giardia and salmonella), and blood borne diseases (such as heartworm and anaplasma). Likewise, community respondents identified concerns that the clinical survey did not address, such as noise pollution, destructive behavior and dog bites.

That dog he comes around and makes a mess. Gets into the rubbish. Can’t keep it clean, and it makes my breathing problems worse. Respondent 2/community 3

Some dogs they get cheeky when the kids tease em, then the kids get bitten. Respondent 20/community 4

The needs analysis also identified areas in which the dogs in these communities were in fact better off than suburban dogs, such as in levels of companionship and exercise (Constable et al., 2008).

Whilst there was a large overlap in the issues of concern in all four communities, each community was unique in terms of both distinctive issues and the prioritization of issues. Furthermore, the experience of the community to past programs, including health, education and government programs, influenced their reaction to and engagement with the dog health program.

For example, Community 1 had little experience with dog health services, and felt that now services had been instigated, all the issues would be dealt with by the servicing team and there would be no further input required from residents. Other residents wanted to have input and expressed the wish that the vet would sit down and yarn with them. They worried that dogs would not be euthanized ‘right way’, meaning humanely and with consent.

In Community 2, there was antipathy towards ‘education’ in the strict sense, with the feeling that this implied the community members were ‘backwards’ or ‘dumb’.

For Community 4 initially it was difficult to find an appropriate space where men and women could meet and comfortably discuss issues. As a result, discussions were held with each gender group separately, or through house to house interviews, with a local liaison officer. With several more visits to the artists at the arts center, and several country visits (trips to visit residents’ traditional lands), the relationship between the researcher and the senior artists became less formal, and the researcher was given a kin term. After that, communication was easier.
In all communities, there were many requests for information about dog health treatments (such as for fleas and mange), and issues related to accessibility of veterinary services.

A lot of people love their dogs but don’t know what to do about it when their dogs get sick. 
Respondent 21/ community 2

Got no easy access to the vet when dogs get sick.
Respondent 25/ community 2

**Thinking and discussing**

The results of the interviews and clinical dog health survey were collated, represented visually and in a text-based report, and discussed with community-identified representatives and interested residents. In all communities, better access to veterinary services and need to increase awareness and accessibility of care for issues of local concern, and to have a community dog health field day to share knowledge, provoke discussion and practice dog care skills such as flea, worm and mange treatments.

In contrast to Community 2, Community 1 participants felt that story paintings would be a more appropriate way of communicating. As there was no art center, three artists were approached upon local recommendation. Community 4 participants decided to work on both informative paintings and a pamphlet, and as there was an art center in this community, 17 artists were involved in resource production. Due to the difficulties working with both genders in this community, it was decided to focus activity on the arts center and the mainly female artists there. In addition resources were provided for male artists to work from home. However, due in part to gender gap issues and ceremonial responsibilities, few male artists participated.

In Community 3, local artists and education workers were currently fully occupied in other projects, and it was decided that the most important first step would be to train the local environmental health workers in dog health work.

**Communication**

Community 2’s team emphasized the importance of showing people that there was a need for knowledge, rather than telling them what you thought they needed to know, as illustrated by the following interview response:

People need to be open to learning, [to] find out what you don’t know, you don’t know. Respondent 7, Community 2

They decided it was important to be able to share knowledge verbally, but also to give residents something physical they could keep and look at later.

Pamphlets are a good idea. It’s shame to talk to people about it [dog health] on the street. Give them something to take home. Resident 4/Community 2

It was also felt that words were important as well as pictures in these resources, and that they should be colourful and attention grabbing. After looking at examples of resources developed by other communities, the team decided to develop several pamphlets addressing issues of local concern, and to have a community dog health field day to share knowledge, provoke discussion and practice dog care skills such as flea, worm and mange treatments.
arrangements were made for the program to continue around this. Training aids included visual workbooks and computer-based technologies such as PowerPoint presentations, as well as on-the-job practicums.

**Action**

*Veterinary services*

Regular veterinary services were instigated for all communities, consisting of a minimum of desexing, humane euthanasia and parasite treatment, where DHWs were not already active in that regard. Veterinary personnel and DHWs supported each other in dog health work. In Community 3, a change in veterinary service provider occurred midway through the program, without interruption in supplied services.

*Resource creation*

Pamphlets were created in Communities 2 and 4 by the DHWs at a 2-day workshop. The DHWs worked with the researcher planning, designing and staging photos, deciding on the appropriate wording and putting the pamphlets together on the computer. The finished products were then printed in the Environmental Health office.

In Communities 1 and 4, the artists decided on the messages they wished to convey and painted a combination of images and text for this purpose. All paintings were paid for at market rates by the research program.

Community residents were then interviewed concerning the effectiveness of the paintings and pamphlets. Residents were pleased to have their queries on dog health answered, and very interested in aspects that they had not realized were important previously. Both resources were preferred over resources available in veterinary surgeries (Constable et al., 2011a,b, in press).

*Dog care field day*

In Community 2, local organizations such as the human health service and the school collaborated with the research team to put on a dog care ‘field day’. DHW-created posters and email networks were used to advertise the event. Further, the team gave informative talks at the local school in the preceding days, and students were invited to enter a dog care poster competition.

On the day, a barbeque, colour-in table, groups of chairs and several stalls were set up on central community oval. Pamphlets, posters, medicines, dog food and toys were displayed on tables in a visually engaging way.

Community members who brought their dogs to the oval were given free mange treatment, as well as being shown how to administer a worming tablet and spray for ticks and fleas. They were then able to practice these skills on their other dogs using worming tablets and tick rinse sprays available. All treatments were free.

The pamphlets were used to aid this information sharing and act as visual reminder after the field day had concluded. Fifty dogs were treated at the field day, and further dogs treated during home visits by the DHWs in the days afterwards.

**OUTCOMES**

The approaches implemented in these case studies lead to beneficial outcomes across several areas.

*Awareness and understanding*

In each community, listening and finding out about local needs was an essential part of ensuring the dog health program met community needs and worked effectively. It increased understanding about the community and their concerns, and built rapport and understanding that supported the establishment of the dog health teams. The open communication revealed reasons for the initial antipathy (e.g. Community 2) or lack of support (e.g. Community 1) for training and education initiatives such that they could be addressed. Although it sometimes took repeated efforts to develop these relationships, including country trips and other such ‘informal’ activities, this effort resulted in better working relationships and outcomes than where such effort was not instigated (e.g. Community 3).

In general, respondents stated dislike of being told what to do, reflecting past practices in other fields as well as a cultural value on the importance of independent decision making. This agrees with the findings of Jamieson et al. (Jamieson et al., 2008). However, in all communities, once needs were elucidated, and the dog health program shown to address these needs in
an appropriate way, more education was called for. The authors consider that initiation of a dog health promotion program without this support, understanding and engagement, would very likely have resulted in failure.

As a result of the increased awareness of respondents’ educational needs, the programs created specific and relevant activities and resources to address them. Through resident participation in resource creation and training workshops, resident employment in dog health programs, and through discussion during needs analysis and evaluation processes, this approach achieved increased community awareness about the dog health issues, which is fundamental before these issues can be addressed. Further, the process involved increasing community understanding about the solutions to some of these issues in a mutual learning environment.

**Relationships**

The time taken to listen to community members allowed the researchers to meet residents and start to develop relationships with them. In Community 4, the effect of taking the time to persevere with initially difficult relationships paid off with excellent participation in the program. Likewise, in Community 1, building rapport through country and shopping trips allowed close relationships to be formed. The importance of relationship building has long been expounded in Indigenous contexts (Centre for Indigenous Development Education and Research, 1996), and remains a vital part of health and education programs today (Davies et al., 2010).

**Community involvement**

The approach implemented strongly supported community involvement in developing and implementing local solutions. This is documented to improve the effectiveness of health promotion programs (Smith and Herbert, 1997) and added to the appropriateness and sustainability of the solutions put into action in each community in this program. Engaging community members as decision-makers and workers in the programs highlighted community strengths, developing a positive attitude towards the program. Further, local involvement entailed local employment, supporting local people financially as well as supporting their self-image, knowledge and skill base. It also built community ownership of the program so that problems and their solutions became issues of joint responsibility.

**Local provision of dog care services**

In this study, local residents were engaged in both health education and in treating dogs with parasitic drugs. As a result of training efforts, local employees took over parasite treatment services in all communities by the end of the program. On average, the DHWs treated 77.7% of dogs compared with 53% for programs without local employees (Constable et al., in preparation).

Involving community members in health work is a concept applied internationally in human health through the Primary Health Care Model (PHCM). PHCM involves the community in the planning and implementation of human health care services and trains and incorporates local health workers as part of the healthcare system (Hall and Taylor, 2003). In Australia, Aboriginal Health Workers (AHW) have proved invaluable in delivery of health care to Indigenous communities (Flick, 1995). However, this model has been questioned by some due to lack of evidence-based demonstrations of health impacts, particularly in situations where unstable political and funding commitments lead to inadequate funding, training and equipment for local health workers (Hall and Taylor, 2003).

Among the four case study communities, DHWs had varying levels of funding, training and equipment support, echoing the problems with PHCM. The idea that community members be responsible for dog health work was often new to both communities and their councils in this program, and it may take time for these individuals to become adequately supported. Similar to reports for AHWs and Indigenous Environmental Health Workers (IEHWs) (Flick, 1995; EnHealth, 2004), these local contributors may experience conflicting responsibilities, indefinite job definitions, inflexible work practices and schedules, low renumeration and lack of proper support (such as continuing education and peer group meetings). Several members of the dog health team, as well as community residents, stated the importance of working flexibly, negotiating schedules from day to day, as issues arise. This agrees with Austin-Broos (Austin-Broos, 2006) and Davies et al. (Davies et al., 2010) work in
Central Australia on culturally appropriate work practices.

When dog health team members from different communities were brought together for training events in this program, all stated the positive benefit of meeting and discussing issues with other DHWs. The interaction provided a forum to swap techniques and problems, and support each other with difficult issues. This is an important factor to consider for more isolated workers, who will likely miss out on this interaction and support without special efforts being made. The importance of properly supporting Indigenous health workers in their job and peer group, and ensuring opportunities for continuing education was noted by the national review conducted by the Environmental Health Committee of the Federal Australian Health Protection Committee (EnHealth, 2004).

Accessibility of services
As a result of improved communication and involvement, especially the training of local DHWs to work with the program, the accessibility of dog health services in the communities was improved. Further, community involvement and support of their dog health programs increased, with more residents seeking treatments. As a result both of increased understanding of the need, as well as confidence in treatment application, residents began to take responsibility for some dog care treatments in Community 2. In all communities, DHWs expressed greater enthusiasm for and less frustration with their work as a result of increased community engagement.

Health impacts
The effect of the program was analysed by comparing dog health data before and after its commencement in each community. Improvements in dog health in terms of reduction in prevalence of dogs with mange-like signs were significant in Community 1 (prevalence dropped from 26.5 to 6.8%, \( p = 0.008 \)), Community 2 (29.2 to 14.6%, \( p = 0.016 \)) and Community 4 (28.3 to 14.9%, \( p = 0.001 \)), but not Community 3 (16.7 to 12.8%, \( p = 0.395 \)). The improvements overall exceeded levels reported by veterinary dog health programs working without a community engagement approach (Constable et al., 2011a,b, in press).

The exception to this trend toward significant improvement in dog health was Community 3. This may be due to the recent start of the program, in that the program was new to both DHWs and community, and, within the time frame of the research, had not had time to become established. The issue of loss of trust and community engagement with the program due to a change in veterinary service provider hampered effectiveness, in spite of the DHWs quickly becoming highly proficient in the conduct of dog treatments. In this community, there was less engagement of the community, e.g. through resource creation, and thus the dog health program established fewer and less committed relationships with the community as a whole. This illustrates the importance of not just technical skills, but also the social capital/community engagement aspects required for an effective dog health program.

Summary
Despite superficial similarities, all of the communities studied had important differences in terms of the previous history of dog programs, their priorities in terms of dog diseases, the available human and treatment resources, the level of public awareness of dog diseases and their solutions and the way the community wanted to discuss and address identified issues. These differences guided the development of quite different courses of action.

Despite differences, a similar approach respectful of cross-cultural and cultural-geographic differences using indigenous methodologies was successful in engaging community members in the dog health programs in a productive and effective way. This approach emphasized the importance of listening, building relationships, working together and devolving responsibilities such as planning, organizing and implementing programs onto community members. The joint nature of this approach required more time than a standard dog health program, but the benefits to both the program and the community were significant and ongoing. The time taken to engage these community development processes built resilience and sustainability into the programs, as skills and knowledge are now available locally regardless of changing governance and economic situations, and the increase in community ownership led to community
members advocating on behalf of their program to ensure regular visits were supported.

Though the needs, strengths and resources of each and every community will differ and require exploration before the best pathway forward for a community can be started on, a successful approach and processes have been demonstrated for dog health promotion programs across four communities. This paper has studied the process of these programs, further papers will analyze the resources produced (Constable et al., 2011a,b) and the impact on communities (Constable et al., in press).

CONCLUSION

Each community has different needs, strengths and resources, embedded in a different socio-cultural and historical environment. Therefore, a one-sized fits all approach will not appropriately address their issues. Each requires a respectful and culturally appropriate approach that engages with community residents to ensure local relevance. By comparing four case studies, this paper has found that the approach taken should include listening (community consultation and negotiation) to find out how best to plan the program, development of local relationships and community involvement and employment, to maximize success and sustainability. Tailoring the program to fit the community maximizes the outcomes for the community in terms of not only program effectiveness and dog health, but also community engagement and empowerment. These result in improving community health more widely and for the longer term.

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CONFLICT OF INTEREST

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REFERENCES


