Profiling a one-health model for priority populations

Casey Panning, MPH,¹ Michelle Lem, DVM, MSc,² Shane Bateman, DVM, DVSc³

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Homeless individuals represent some of the highest-risk populations with respect to health outcomes. This population is often comprised of youth, those struggling with mental health and/or addiction issues, and individuals fleeing domestic violence.^{1–4} They are commonly socially isolated and experience a significant lack of accessibility to health services such as preventive medical care, and dental care.^{5,6} It is estimated that between 6% and 24% of homeless persons are pet-owners.⁵ Health accessibility can be especially problematic for this population because they are more likely to forego their own needs to care for their pet(s).^{2,5,7–10} For example, compared to the general homeless population, homeless pet-owners are less likely to access shelter, health care and social services because they cannot do so with their pets.^{2,5,8,11}

Homeless pet-owners typically share an incredibly strong bond with their pets.^{11,12} This bond can be a potent motivator of health-related behaviour change.^{2,5,9,11,13} For instance, pet-owners have been found to be more motivated to quit smoking once they understand the impact of second-hand smoke on their pets.¹³ In other cases, individuals have ceased substance abuse, or begun seeking medical treatment for chronic illness, because of the responsibility they felt towards their animals.^{3,9,11,14} The strong bond between homeless pet-owners and their animals offers public health practitioners a unique method of accessing a difficult-to-reach priority population by appealing to the needs of human and pet simultaneously.

Community Veterinary Outreach (CVO) is a registered charity that aims to improve the health of homeless individuals and their pets through an innovative “one-health” model. In this model, human health services and health education are offered alongside veterinary care, all provided free of charge. Founded in Ottawa in 2003, CVO now operates in five municipalities within Ontario. In 2013, CVO began piloting the one-health model. The objectives of this model are to 1) improve access to veterinary and human health resources for an at-risk population, and 2) leverage the human-animal bond to increase human health resource uptake.

INTERVENTION

There are two fundamental components of the one-health clinics. The first is the commitment of veterinary volunteers. Clinics require approximately 4 licensed veterinarians and 10–15 veterinary support staff (veterinary technicians, students and other volunteers). All veterinary staff volunteer their time, and are typically individuals who live, work or study in the community. The second crucial component is a partnership with the local public health unit. CVO administrators and public health stakeholders collaboratively

determine what public health resources to offer at the one-health clinics based on community need, public health priorities and resource availability in a given community. Examples of public health resources offered include: flu vaccinations, dental screenings, smoking cessation consultations, and sexual health and harm reduction resources (such as condoms and safe injection kits). The public health staff required at each clinic is dependent on the resources being offered, but usually comprises a minimum of two public health practitioners, such as nurses or dental hygienists. Generally, public health staff are compensated for their time by their employer.

One-health clinics are run slightly differently in each community that CVO services, but the framework for the clinics remains the same. Clients first attend a veterinary appointment where a veterinarian takes care of the health needs of the pet(s), and integrates the human health content of the clinic. For example, the veterinarian may inquire about a pet's second-hand smoke exposure, explain the impact of second-hand smoke on the pet, and then ask the client if he or she is interested in learning about smoking cessation. If the client expresses interest, he or she can choose to consult with the public health team following the veterinary appointment. The public health team will discuss with the client the health resources available.

Generally, clinics run for four to five hours and occur every two months. Clients served at the clinics must have a pet dog or cat, demonstrate low or no income, and meet the Canadian Observatory on Homelessness definitions of homelessness, risk of homelessness, or marginally housed.¹⁵ Additionally, to ensure that a truly vulnerable population is reached, clients must be referred by a case, social or outreach worker who can verify that the client meets the clinic criteria.

IMPLICATIONS

Preliminary evidence suggests that the one-health model has improved access to public health resources among CVO's clients. For instance, the rate of influenza vaccination among homeless populations varies from less than 7% to less than 25%.^{16,17} For the past two years, the one-health flu clinics have doubled this

Author Affiliations

1. Department of Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, ON
2. Community Veterinary Outreach, Guelph, ON
3. Department of Clinical Studies, Ontario Veterinary College, University of Guelph & Community Veterinary Outreach, Guelph, ON

Correspondence: Shane Bateman, Department of Clinical Studies (Office 2153), Ontario Veterinary College, University of Guelph, Guelph, ON N1G 2W1, Tel: 519-824-4120, ext. 56902, E-mail: sbateman@uoguelph.ca

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vaccination rate (range from 45.4% to 58.6%) among clinic clients. Additionally, this model may improve uptake of health resources by homeless individuals because their comfort level with staff in this environment, where there is a focus on human–animal bond, is higher. Similar results have been found in other community-based health initiatives with homeless populations.¹⁸ Last, the one-health model provides a unique opportunity for multidisciplinary collaboration between veterinary and human health care. Both teams can learn from one another, thereby developing a more comprehensive view of the health of their client.

There are some limitations to this model. First, CVO clinics serve a small population (10–30 individual pet-owners per clinic). Consequently, the results appear small and lack statistical power. However, clinic data continue to grow over time. Additionally, availability of public health resources can be a barrier, since it is highly dependent on public health budget in a given region. In some cases, public health stakeholders may favour designating scarce resources to a larger population than CVO provides. Last, more research is required to demonstrate the long-term impacts of the one-health model on client health and well-being. For example, future studies could examine clients' commitment to long-term health behaviour changes, and whether determinants of health, such as social networks, have been altered as a result of the one-health clinics.

Ultimately the one-health model described here is an innovative opportunity of improving access to vital services, such as veterinary and human health care, among a vulnerable population.

REFERENCES

1. Cronley C, Strand EB, Patterson DA, Gwaltney S. Homeless people who are animal caretakers: A comparative study. *Psychol Rep* 2009;105(2):481–99. PMID: 19928610. doi: 10.2466/PRO.105.2.481-499.
2. Labrecque J, Walsh CA. Homeless women's voices on incorporating companion animals into shelter services. *Anthrozoos* 2011;24(1):79–95. doi: 10.2752/175303711X12923300467447.
3. Irvine L. Animals as lifechangers and lifesavers: Pets in the redemption narratives of homeless people. *J Contemp Ethnogr* 2012;42(1):3–30. doi: 10.1177/0891241612456550.
4. Fitzgerald AJ. "They gave me a reason to live": The protective effects of companion animals on the suicidality of abused women. *Humanity Soc* 2007; 31:355–78. doi: 10.1177/016059760703100405.
5. Rhoades H, Winetrobe H, Rice E. Pet ownership among homeless youth: Associations with mental health, service utilization and housing status. *Child Psychiatr Hum Dev* 2015;46(2):237–44. PMID: 24728815. doi: 10.1007/s10578-014-0463-5.
6. Figueiredo RLF, Hwang SW, Quiñonez C. Dental health of homeless adults in Toronto, Canada. *J Public Health Dent* 2013;73(1):74–78. PMID: 22881462. doi: 10.1111/jphd.2013.73.issue-1.
7. Irvine L, Kahl KN, Smith JM. Confrontations and donations: Encounters between homeless pet owners and the public. *Sociol Q* 2012;53(1):25–43. PMID: 22329059. doi: 10.1111/tsq.2012.53.issue-1.
8. Slatter J, Lloyd C, King R. Homelessness and companion animals: More than just a pet? *Br J Occup Ther* 2012;75(8):377–83. doi: 10.4276/030802212X13433105374350.
9. Lem M, Coe JB, Haley DB. Effects of companion animal ownership among Canadian street-involved youth: A qualitative analysis. *J Sociol Soc Welf* 2013; 40(4):285–304.
10. Jordan T, Lem M. One health, one welfare: Education in practice veterinary students' experiences with community veterinary outreach. *Can Vet J* 2014; 55(12):1203–06. PMID: 25477552.
11. Taylor H, Williams P, Gray D. Homelessness and dog ownership: An investigation into animal empathy, attachment, crime, drug use, health and public opinion. *Anthrozoos* 2004;17(4):353–68. doi: 10.2752/089279304785643230.
12. Lem M. Effects of pet ownership on street-involved youth in Ontario [thesis]. Guelph, ON: University of Guelph, 2012.
13. Milberger SM, Davis RM, Holm AL. Pet owners' attitudes and behaviours related to smoking and second-hand smoke: A pilot study. *Tob Control* 2009; 18(2):156–58. PMID: 19208667. doi: 10.1136/tc.2008.028282.
14. Rew L. Friends and pets as companions: Strategies for coping with loneliness among homeless youth. *J Child Adolesc Psychiatr Nurs* 2000;13(3):125–32. PMID: 11111505. doi: 10.1111/jcap.2000.13.issue-3.
15. Barr C, Friesen A, Harris B, Pearce B, Turner A, Marsolais A. *Canadian Definition of Homelessness*. 2012;1–5. Available at: www.homelesshub.ca/homelessnessdefinition (Accessed October 6, 2015).
16. Bucher S, Brickner P, Vincent R. Influenza-like illness among homeless persons. *Emerg Infect Dis* 2006;12(7):1162–63. PMID: 16845776. doi: 10.3201/eid1207.060217.
17. Young S, Dosani N, Whisler A, Hwang S. Influenza vaccination rates among homeless adults with mental illness in Toronto. *J Prim Care Community Health* 2015;6(3):211–14. PMID: 25416307. doi: 10.1177/2150131914558881.
18. DiMarco MA, Ludington SM, Menke EM. Access to and utilization of oral health care by homeless children/families. *J Health Care Poor Underserved* 2010; 21(2):67–81. PMID: 20453377. doi: 10.1353/hpu.0.0277.

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