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Research Article

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Creating Evidence Driven Practices to Enhance Human Care Services for Unhoused and Low-Income Pet Owners

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Abstract

Background: *Seattle Veterinary Outreach, a nonprofit organization providing free and sliding-scale veterinary services to those experiencing homelessness and low-income residents of the Seattle Washington Puget Sound area, began operations in 2019. A key premise of the organization is that offering veterinary services creates a trusting relationship with pet owners that fosters guiding human clients toward obtaining services for their own health and well-being [1]. Pet owners face significant barriers to obtaining care for themselves due to the lack of pet-friendly housing, shelter, and medical care clinics [2].*

Methods: *To support this vision, SVO partners with human care service providers to co-locate, allowing for pet-friendly access to needed services. Up until now, the decision about partners has been made based on immediate needs, circumstances, and availability. The purpose of this study was to develop a data-driven process that would assist in identifying the type of human care services needed, create a ranking system to assist in securing these services and identify partners that can co-locate with SVO mobile clinics to address human care needs. Relying on data collected by SVO staff and volunteers and incorporating attributes of potential partners into the discussion, a data-driven process for partner outreach was created.*

Results: *A new process was created that is currently in use and will be incorporated into staff responsibilities.*

Conclusion: *The new process offers an opportunity to ensure that the needs of pet owners are being best served.*

Keywords: Pet-Friendly, Homelessness, Human Care Services, Evidence-Based Decisions, Health Disparities, One Health.

Introduction

Services Needed for Those Experiencing Homelessness and/or Low-Income Clients

Each year, thousands of people experience homelessness and/or are housing vulnerable and are often defined as those living on the streets, in shelters or vehicles, or "couch surfing" – temporarily living with friends or family [3]. HHV individuals are highly marginalized and face innumerable physical and mental health challenges [3]. Their risk of diseases, such as tuberculosis and other viruses, foot and skin problems, mental breakdowns and suffering emotionally from the stigma and isolation of being unhoused, is much higher than in the general population thereby increasing the number and types of care services needed to meet the needs of a widely diverse group of individuals [3].

HHV Population with Pets

Adding another layer of complication is the large number of HHV

individuals who have animal companions. Although different statistics exist depending upon where the estimates were made, much of the literature on unhoused pet owners concludes that 5-25% of the HHV population have some kind of pet, with "women, married people, and those experiencing homelessness for the first time" reporting a higher rate of pet ownership [4]. In a study of individuals living unsheltered in Los Angeles, California, the collected demographic information on pet owners, which was analyzed using Pearson's chi-squared test and linear regressions for continuous variables, was consistent with these findings [5]. However, a different study of over 4,000 homeless adults in Knoxville, Tennessee, found a key significant difference; while women were highly represented as pet owners, married couples were not [3]. This difference is significant; married couples have the option of leaving the pet with their spouse, an opportunity not available to those who live alone.

Benefits & Barriers of Animal Companions for Those Who are Unhoused

Understanding the powerful bond identified in the literature between humans and their pets, and the benefits associated with pet ownership, is critical to addressing the needs of those experiencing homelessness Pet ownership for the HHV population has repeatedly been identified as providing significant mental health benefits for the owners [6, 7]. Although limited due to the small sample size, one study of qualitative interviews with two individuals experiencing homelessness exemplified the strong emotional and mental health support gained from animal companions [4]. Both participants emphasized the sacrifices they were willing to make for their pets due to the profound relationship of "love and companionship" [4]. In another qualitative study of 17 LBGQT+ young adults in the state of Oklahoma, the majority of the participants articulated that their pet had a "positive power" in their lives, helping offset stress, marginalization, and stigma [7]. Pets were described as boosting the owner's self-image, creating a sense of stability and purpose that offset any challenges the owners might face [7]. Animal companions have also been found to reduce high-risk behavior for fear of losing the pet, reduce depression, and provide strong companionship [2].

Despite the consistent data suggesting the importance of a pet to those who are HHV, significant barriers exist with respect to finding ways to exit homelessness or obtaining needed services such as mental and physical healthcare [2]. Securing housing for pet owners, for example, is identified throughout the literature as difficult, at best, as most shelters or emergency housing have no-pet policies despite recent efforts to support a co- housing effort [2]. With respect to employment, the evidence is similar; pet ownership is described as a barrier to working since there is nowhere to leave their animal companions [2]. In a scoping review of the relevant literature, several studies looked at access to other services such as healthcare and food amenities, all of which were generally inaccessible to pets, leaving their owners less likely to use these services [2]. Notably, leaving pets unattended to seek human services is a challenging choice. While pets of HHV individuals are generally in good physical health, at least one study identified that nearly 62% of dogs suffered from separation anxiety, limiting the time they can be left on their own. Unable to leave their animals unattended, pet owners chose to forego their own health, often saying "pet before self" [1, 6].

SVO's Advantage: Capitalizing on the Human/Pet Bond and a Trusting Relationship

Research literature has repeatedly identified trust as the key component to a strong, positive patient/provider relationship [8, 9]. Patients who trust their care providers are more likely to follow medical advice and seek support. Indeed, in the last couple of years, this has been seen most clearly in the realm of COVID-19 information. The widespread, often conflicting information on the disease, who it impacts, the effectiveness of the vaccines and what evidence is a reliable guide to addressing the pandemic has created confusion and reluctance in a large portion of our society [8-10]. People of color, those who have historically suffered from racial injustices in the healthcare system, have been overwhelmingly reticent about medically endorsed COVID-19 safety precautions and vaccinations [11-13]. Making up a disproportionately large percentage of those who are low-income or housing vulnerable, this population has seen COVID-19 develop at unprecedented rates [14].

Employing the human/pet bond as the source of building a positive, trusting relationship, SVO sits in an unprecedented position to reach those who have historically lacked faith in the established medical community [15]. Discussing pet issues in a non- threatening, caring and supportive manner creates what can be termed an "eco-trust" system: an "inclusive, systematic and generative approach" to trusting partners, to understanding how each experiences the world, and to encouraging open and honest communication [16]. Emotional support, kindness, and listening to the patient's voice are crucial to developing a connection that will support health and wellbeing of both the animal and their human owner [17]. SVO experiences have shown that once this relationship is established, clients have been overwhelmingly willing to share their own issues and obtain referrals for their needs.

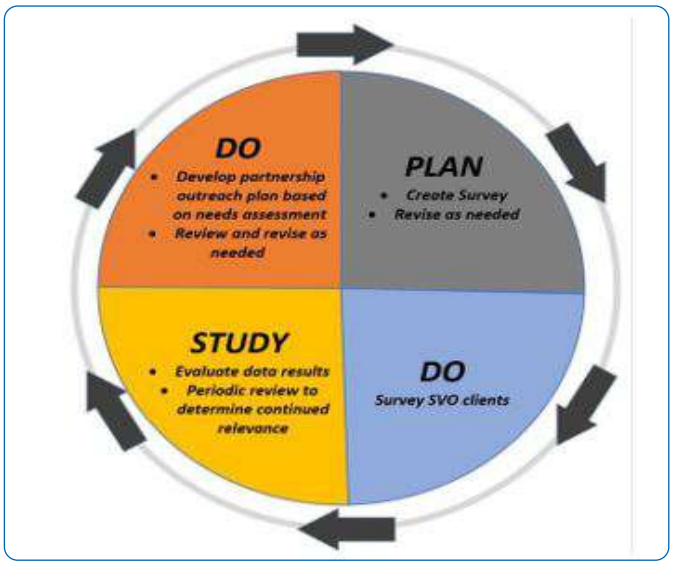
At its core, SVO's mission clearly identifies its vision for improving the health and well-being of the pets it serves as well as their human partners. Going well beyond basic veterinary care, SVO's envisions a world where underserved people and their pets enjoy equal access to health and housing and focuses its efforts toward connecting pet owners to vital health and housing resources [18]. Capitalizing on developing a connection focused on their "family" members, SVO clients are often more open to discussing their own needs.

Interestingly, in some cases, the animal companion's health issues have been reflective of the human owner's issues and have led to addressing both. For example, in at least one case, a dog's "kennel" cough brought the family into the SVO clinic only to discover that the human family members were also coughing, ultimately creating the discovery of a family-wide COVID-19 infection.

The Gap: Creating a Data-Driven Analysis

Addressing pet needs to create a trusting relationship with pet owners opens the door for owners to seek out resources for their own health and well-being [3, 7, 19]. A successful model for encouraging this behavior and removing barriers to care has been for veterinary services to partner with human services and co-locate to provide owner care without risking the pet's safety [1, 19]. Somewhat similar to SVO's model, a Canadian organization uses what it calls a "One Health Model" to provide free veterinary services when those who are unhoused attend one of their human health and services sites [19]. Although the study focused on the health of the animal companions and not necessarily the health of the pet owners, the One Health model has been successfully expanded to numerous communities in Canada [19]. The gap, however, is in how decisions are made about what kind of human services are offered, often based on assumptions and convenience. Using data to identify client needs offers an evidence-based approach to improving the quality of how to choose human care service partners.

Although numerous models exist for addressing quality improvement projects, the Plan, Do, Study, Act format, is particularly suited for this process and was employed to guide the process as shown in the graphic below [20]:



Methods

Objective: Create a data-driven process for evaluating partnership opportunities

As mentioned, to date, decisions regarding human care service partnerships were made on an ad hoc basis. Expediency, funding, and relative ease of soliciting interested partners was the primary source of engaging human care service providers to co-locate with SVO during its mobile clinic days. However, as the organization expands its efforts to address needs based on data driven information, SVO engaged in a process to develop a partnership ranking system. The process involved three key components and deliverables, each of which will be discussed in the following sections of this article:

- **Developing a Validated Human Needs Assessment Survey**
- **Creating a Ranking System that Included the Survey data as well as other relevant factors**
- **Creating a list of potential partners to join their mobile clinic sites**

Setting and Population:

SVO works out of a mobile veterinary clinic van that rotates throughout Puget Sound, parking in sites that are generally accessed by those experiencing homelessness such as food banks, transit centers, and low-cost health care entities. SVO is funded by private and business donors as well as foundation grants. The client population includes those who are unhoused or who are housing vulnerable, and low-income pet owners living in the Puget Sound area in and around Seattle, Washington.

Outcomes & Deliverables

Understanding the Needs of the Community

Many factors may increase an individual's risk of homelessness or becoming HHV. For this reason, an individual's needs are often personal or unique to their circumstance. SVO clientele consists of the population experiencing homelessness or is HHV and is in ownership of a pet or companion animal, a subpopulation within the broader general population experiencing homelessness that has its unique subset of needs [3]. In addition, there are frequently "tag-a-longs," people who are not pet owners themselves but accompany their pet owning friends or family to veterinary visits. These individuals have the same access to SVO human care social and medical service partners as those who are pet owners thereby expanding the outreach. To better understand the circumstances of individuals seeking SVO services and to improve the quality of how SVO addresses those issues a needs assessment survey was constructed to be administered at SVO mobile clinics.

Development of a Validated Human Needs Assessment Survey

A first draft of the Needs Assessment Survey was designed and implemented at SVO clinics in August 2021. To ensure that SVO's partnerships were aligning with their target population, the questions were created to establish a baseline understanding of the human client demographics, needs, and existing access to pet-friendly services. In addition, SVO wanted to understand how Covid-19 restrictions impacted the lives of this population and their access to social services.

To support this quality improvement process, during the four-month period of August 2021 through December 2021, the NAS followed a rapid PDSA cycle and was modified to accommodate information gleaned from using the NAS with clients. SVO team members reviewed observations, results, and experiences from administering the surveys, and integrated takeaways into subsequent iterations of the survey to be administered at SVO mobile clinics. PDSA cycles occurred every 2-4 weeks, and primary stakeholder

input came from community members participating in the need's assessment survey. Ultimately, a final version was adopted that began use in January 2022 and will continue as the supported version until such time as the SVO team does another evaluation of the process. ***See, Table 1 for Needs Assessment Survey***. Data from the survey is analyzed and evaluated monthly to determine how to enhance human care services for upcoming SVO clinics. ***See Table 2 for data analysis for January through March 2022.***

TABLE 1: SVO NEEDS ASSESSMENT SURVEY

Seattle Veterinary Outreach (SVO) Referral Assessment Form:

Clinic date/location: _____Clinic patient number:_____

Demographics

1. Age
   - ☐ <26
   - ☐ 26-65
   - ☐ >65
2. Race Identity
   - ☐ American Indian or Alaskan Native
   - ☐ Asian or Asian American
   - ☐ Black or African American
   - ☐ White
   - ☐ Native Hawaiian/other Pacific Islander
   - ☐ Mixed race
   - ☐ Prefer not to respond
3. Ethnicity
   - ☐ Not Hispanic or Latino
   - ☐ Hispanic or Latino
   - ☐ Prefer not to respond
4. Pronouns
   - ☐ she/her
   - ☐ he/his
   - ☐ they/them
   - ☐ other
   - ☐ prefer not to respond
5. How did you find out about SVO?
   - ☐ Current client
   - ☐ Friend of SVO client
   - ☐ Host site
   - ☐ Community vet
   - ☐ Online search
   - ☐ Community social service
   - ☐ None of the above

Misc.

6. What is your current work situation?
   - ☐ Unemployed
   - ☐ Part-time or temporary work
   - ☐ Full-time work
   - ☐ Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)
   - ☐ Prefer not to respond
7. How did you come to the clinic? (Car, walking, bicycle, bus, other):
   - ☐ Public transportation
   - ☐ Drove
   - ☐ Walk/bike
   - ☐ None of the above
8. Are you associated with our community host (site of clinic)?
   - ☐ Yes
   - ☐ No
   - ☐ Unknown
9. Do you need assistance with social service referrals?
   - ☐ Yes
   - ☐ No
10. Are you connected to a social service case manager or know how to access a case manager?
    - ☐ Yes
    - ☐ No
    - ☐ Does not meet criteria for a social service case manager
11. If yes, with what organization(s):

    _____
12. If yes, are you satisfied with the social services you are using?
    - ☐ Yes
    - ☐ No
13. If no, why not?
    - ☐ Inaccessible (can't get through phone lines)
    - ☐ No follow up
    - ☐ Culturally insensitive
14. What is your housing status?
    - ☐ Securely Housed General Public
    - ☐ Unstably Housed General Public
    - ☐ Housed Section 8
    - ☐ Living in vehicle
    - ☐ Living in tent or otherwise out of doors
    - ☐ Couch surfing
    - ☐ Living in shelter
    - ☐ LIHI
    - ☐ Other
15. Are you chronically unhoused (chronically as defined as more than 3 months):
    - ☐ Yes
    - ☐ No
    - ☐ Refused/NA
16. IF you are chronically unhoused, how long have you been unhoused for (in months)?
    - ☐ 0 to 2 months
    - ☐ 3 to 4 months

- ☐ 5 to 6 months
- ☐ 7 to 8 months
- ☐ 9 to 10 months
- ☐ 11 to 12 months
- ☐ Longer than one year
- ☐ Refused/NA

17. IF not unhoused, how long have you been in your residence?
    - ☐ Less than 6 months
    - ☐ 6 months to 1 year
    - ☐ Longer than 1 year
    - ☐ Refused/NA
18. Where is the general area you reside in? (zip codes)
    - ☐ Downtown (98101)
    - ☐ South Lake Union (98109)
    - ☐ Belltown (98121)
    - ☐ Capitol Hill (98102)
    - ☐ Ballard (98117)
    - ☐ SODO (98104)
    - ☐ Shoreline (98155, 98177)
    - ☐ Kent (98030, 98301, 98032, 98035, 98042, 98064, 98089)
    - ☐ Kirkland (98033, 98034, 98083)
    - ☐ Bitter Lake (98133)
    - ☐ None of the above
19. How long have you resided in the greater Seattle area/Puget Sound?
    - ☐ Less than 1 year
    - ☐ 1-5 years
    - ☐ More than 5 years

20. What do you need assistance with accessing?

Basic Needs:

- ☐ Housing
- ☐ Nutrition (food banks, food pantries)
- ☐ Showers/laundry/hygiene centers/clean water
- ☐ Hygiene kit
- ☐ Harm reduction kit _____
- ☐ Warmth/cooling kits
- ☐ Clothing
- ☐ Government Phone
- ☐ EBT/SNAP/TANF/WIC
- ☐ ID/Mailing Address/Internet

Health:

- ☐ Medical Insurance
- ☐ Medical Need. If yes:
    - ☐ Foot care
    - ☐ Wound care
    - ☐ Vitals (blood pressure/sugar, etc.)
    - ☐ General health maintenance
    - ☐ Disease specific
    - ☐ Other
- ☐ Dental Care
- ☐ Mental Health
- ☐ Substance use. If yes:
    - ☐ Type of substance _____
    - ☐ Frequency of use _____
- ☐ Domestic Violence
- ☐ Women's Day Center
- ☐ Family referrals. If yes: _____

Connection Services:

- ☐ Transportation (ORCA card, gas voucher)
- ☐ Employment (job placing services)
- ☐ Legal assistance

Pet Needs:

- ☐ Services with SVO
- ☐ Spay/neuter
- ☐ Emergency Pet Referral
- ☐ Pet Resources (food etc.)

Contact information for follow up:
Best method of contact (phone, email..): _____ Phone: _____
Name: _____ Email: _____

TABLE 2: MONTHLY DATA ANALYSIS FOR HUMAN SERVICES NEEDS IDENTIFIED BY SVO STAFF SURVEY JANUARY 2022

PIVOT TABLE ALIGNING NEEDS TO RACE & EMPLOYMENT STATUS FOR CLIENTS INTERVIEWED*

CLIENT REFERRALS BY RACE & EMPLOYMENT STATUS													
	Employment Status	Housing Needs	Nutrition Needs	Showers/laundry/hygeine centers/clean water	Foot Care Needs	Wound Care Needs	Vital Signs Needs	General Health Maintenance Needs	Disease Specific Needs	Dental Health Needs	Mental Health Needs	Substance Use Assistance	Domestic Violence Assistance
American Indian or Alaskan Native	Full-time work	1	3	1	0	0	0	1	0	2	1	0	0
	Otherwise unemployed but not seeking work	16	29	8	1	0	12	20	13	27	25	3	3
	Part-time or temporary work	3	3	2	0	0	1	1	1	2	2	0	0
	Unemployed	4	5	2	0	0	1	2	1	2	1	1	0
American Indian or Alaskan Native Total		24	40	13	1	0	14	24	15	33	29	4	3
Asian or Asian American	Full-time work	1	1	1	0	0	0	0	0	0	0	0	0
	Otherwise unemployed but not seeking work	2	2	1	0	0	0	0	0	2	2	0	0
	Unemployed	1	2	2	0	0	1	1	1	0	2	0	0
Asian or Asian American Total		4	5	4	0	0	1	1	1	2	4	0	0
Black or African American	Full-time work	3	2	0	0	0	0	0	0	2	2	0	0
	Otherwise unemployed but not seeking work	8	12	7	0	1	3	8	5	4	7	0	1
	Part-time or temporary work	2	2	1	0	0	0	2	2	2	4	0	1
	Unemployed	2	2	1	1	0	0	0	0	3	2	0	0
Black or African American Total		15	18	9	1	1	3	10	7	11	15	0	2
Mixed race	Full-time work	1	3	3	0	0	1	1	1	3	2	0	0
	Otherwise unemployed but not seeking work	21	24	8	0	1	5	13	7	20	19	4	5
	Part-time or temporary work	6	10	5	1	1	1	3	0	9	10	0	1
	Prefer not to respond	1	1	1	0	0	0	1	1	0	1	0	0
	Unemployed	11	12	7	0	1	1	6	5	3	12	1	4
Mixed race Total		40	50	24	1	3	8	24	14	35	44	5	10
Native Hawaiian/Other Pacific Islander	Otherwise unemployed but not seeking work	1	1	0	0	0	0	0	0	0	1	0	1
	Part-time or temporary work	1	1	0	0	0	0	0	0	1	1	0	0
	Unemployed	5	2	2	0	1	0	3	1	0	2	0	0
Native Hawaiian/Other Pacific Islander Total		7	4	2	0	1	0	3	1	1	4	0	1
Prefer not to respond	Full-time work	1	0	0	0	0	0	0	0	1	1	0	0
	Otherwise unemployed but not seeking work	11	10	6	0	1	1	6	5	8	9	3	4
	Part-time or temporary work	3	3	1	0	0	0	1	0	3	3	2	0
	Prefer not to respond	1	2	1	0	0	1	1	1	1	1	1	1
	Unemployed	1	1	1	0	0	1	1	1	2	1	1	0
Prefer not to respond Total		17	16	9	0	1	3	9	7	15	15	7	5
White	Full-time work	0	3	2	0	0	0	0	0	1	2	0	0
	Otherwise unemployed but not seeking work	54	80	35	2	3	25	53	27	71	73	23	11
	Part-time or temporary work	16	16	7	0	0	5	8	3	16	21	2	1
	Prefer not to respond	1	1	1	0	0	0	1	0	1	1	1	0
	Unemployed	40	43	27	4	5	13	29	14	36	46	15	6
White Total		111	143	72	6	8	43	91	44	125	143	41	18
Grand Total		218	276	133	9	14	72	162	89	222	254	57	39
										Total number of referrals:			1,545
										Total number of clients seen:			478

****Total clients Interviewed: 71; Total Needs Identified: 269***

February 2022: Pivot Table Aligning Needs to Race & Employment Status for Clients Interviewed*

Row Labels	Sum of Total Contacts	Housing	Nutrition	Medical Insurance	Foot Care	Wound care	Vital Signs	General health maintenance	Disease specific	Dental Care	Mental Health	Substance use	Domestic Violence
American Indian or Alaskan Native	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	9	6	7	0	0	0	1	5	3	8	8	0	2
Asian or Asian American	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Full-time work	1	1	1	1	0	0	0	0	0	0	0	0	0
Black or African American	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	3	1	3	0	0	0	1	1	0	1	1	0	0
Mixed race	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	5	1	3	0	0	0	0	1	1	1	1	1	1
Part-time or temporary work	3	2	3	1	0	0	0	1	0	1	1	0	0
Prefer not to respond	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	3	3	3	1	0	0	0	1	1	2	2	1	0
Prefer not to respond	1	0	1	0	0	0	0	0	0	0	0	0	0
White	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**	**45**
Full-time work	1	0	1	0	0	0	0	0	0	0	0	0	0
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	28	11	24	6	0	0	4	16	6	18	18	8	3
Part-time or temporary work	2	1	2	0	0	0	1	2	1	1	2	0	0
Unemployed	14	11	14	4	0	2	2	9	1	10	14	11	2
Grand Total	**78**	**41**	**66**	**17**	**0**	**3**	**10**	**39**	**17**	**42**	**53**	**22**	**11**
		Total Needs Identified											*321*

*Total clients Interviewed: 78; Total Needs Identified: 321

March 2022: Pivot Table Aligning Needs to Race & Employment Status for Clients Interviewed*

Row Labels	Total Contacts	Housing Needs	Nutrition Needs	Medical Insurance Needs	Foot Care	Wound Care	Vital Signs/Blood Sugar	General Health Needs	Disease Specific Health Issues	Dental Care	Mental Health	Substance Use	Domestic Violence
American Indian or Alaskan Native	**16**	**4**	**14**	**2**	**0**	**0**	**7**	**9**	**5**	**9**	**8**	**1**	**0**
Full-time work	2	0	0	0	0	0	0	0	0	0	0	0	0
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	10	2	10	1	0	0	6	7	4	8	7	0	0
Unemployed	4	2	4	1	0	0	1	2	1	1	1	1	0
Asian or Asian American	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Unemployed	1	0	0	0	0	0	0	0	0	0	0	0	0
Black or African American	**6**	**2**	**3**	**2**	**0**	**0**	**2**	**2**	**2**	**1**	**2**	**0**	**0**
Full-time work	1	1	1	0	0	0	0	0	0	1	1	0	0
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	4	1	2	2	0	0	2	2	2	0	1	0	0
Unemployed	1	0	0	0	0	0	0	0	0	0	0	0	0
Mixed race	**24**	**15**	**17**	**7**	**0**	**0**	**4**	**10**	**8**	**11**	**21**	**1**	**5**
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	13	9	9	3	0	0	4	7	5	7	11	1	3
Part-time or temporary work	4	1	2	1	0	0	0	0	0	3	3	0	0
Unemployed	7	5	6	3	0	0	0	3	3	1	7	0	2
Native Hawaiian/Other Pacific Islander	**2**	**2**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**
Unemployed	2	2	1	0	0	0	0	2	0	0	2	0	0
Prefer not to respond	**3**	**3**	**3**	**1**	**0**	**0**	**1**	**1**	**2**	**3**	**3**	**1**	**1**
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	1	1	1	0	0	0	0	0	1	1	1	0	0
Part-time or temporary work	1	1	1	0	0	0	0	0	0	1	1	0	0
Prefer not to respond	1	1	1	1	0	0	1	1	1	1	1	1	1
White	**46**	**24**	**33**	**14**	**1**	**1**	**11**	**19**	**12**	**25**	**37**	**9**	**4**
Full-time work	2	0	2	2	0	0	0	0	0	0	1	0	0
Otherwise unemployed but not seeking work (ex. student, disabled, retired, unpaid primary caregiver)	16	9	13	2	0	0	6	10	6	11	15	4	2
Part-time or temporary work	9	5	6	0	0	0	2	1	1	5	6	2	0
Prefer not to respond	1	1	1	1	0	0	0	1	0	1	1	1	0
Unemployed	18	9	11	9	1	1	3	7	5	8	14	2	2
Grand Total	**98**	*50*	*71*	*26*	*1*	*1*	*25*	*43*	*29*	*49*	*73*	*12*	*10*
											Total needs for 98 clients interviewed:		*390*

Creation of a Partnership Ranking System

The next step in the process was to create a ranking system for determining partnerships that included aligning needs assessment data with three other key components that might be facilitators or barriers to partnerships: funding opportunities, logistics of setting up the partnerships, and availability of needed service partners. Each factor was given a rank and the total number of points used to help determine which resources to secure. Although the ranking system does contain some subjective factors, such as the availability of partners, it was determined that this information could significantly alter SVO's ability to establish partnerships and needed to be taken into consideration along with the quantitative survey data.

As an example of how the ranking system worked, while the needs assessment data showed a strong necessity for dental care, dental partners were difficult to find, and funding was unavailable ultimately creating a lower ranking than might have been drawn simply from the needs data. In contrast, the needs data showed a strong interest in helping pet owners secure their own medical insurance and partners to join at the mobile clinics were easily accessible making this a top-ranking priority. ***See Table 3 for Ranking System Spreadsheet***

TABLE 3: PARTNERSHIP RANKING SYSTEM

ISSUE	Ranking from Needs Assessment Data	Needs Assessment Notes	Potential funding source: Philanthropy	Philanthropy Notes	Potential funding source: Grants	Grant Notes	Availability of partners	Availability Notes	Logistics Needed to accomplish partnership	Logistics Notes	TOTAL SCORE
SCORING	1-Low Priority 2- Medium priority 3 High Priority		1-None avialable 2- Possible funds 3 - Identified funds		1-None avialable 2- Possible grants 3- Identified grants		1-None identified 2- Possible partners 3 - Identified partners		1-Significant effort 2-Medium effort 3 - Small amount of effort/manageable		Higher score is best
Populations: Native American Outreach	3										
Populations: White Community	1										
Populations: African American community	3										
Populations: Mixed Race	3										
Dental Care	3										
Housing	3										
Food Security	3										
Medical Insurance	1										
Domestice Violence	1										
Mental Health	3										
Substance Use	2										
Employment	3										
Medical: Wound care	1										
Medical: Foot care	1										
Medical: vital signs care	1										
Medical: General health mainenance	2										
Medical: Disease specific	1										

Creation of Potential Partners List

Again, using the data collected from the client needs assessment survey and the ranking system format, numerous potential partners were identified that could be contacted to address needed services. The creation of this list involved internet research of possible partners, talking with known partners, and outreach to several community-based organizations. Importantly, the list was created based on local resources that would be accessible for SVO clients, be invested in improving the lives of Puget Sound residents, and understand regional issues and constraints.

Results

Needs Assessment Survey Results

The results of this process highlighted valuable quantitative and qualitative evidence of human care needs for unhoused/low-income pet owners. With respect to quantitative details, the first three months of NAS use have already proven to be a valuable resource for SVO partnership determinations. As seen in Table 1, at the mobile clinics held by SVO during January through March, SVO staff talked with 247 clients and discovered that their needs requirements were 980, approximately 4 needs per person. Using a pivot table to align needs with client demographics and employment status allowed SVO to further define relevant partnership opportunities particularly with respect to medical needs such as health maintenance, foot care, dental care and disease-specific issues. This process also allowed SVO to evaluate and cultivate culturally relevant resources based on the demographics of the target population. Perhaps the most enlightening information, however, came from listening to the qualitative stories from clients as they engaged in unencumbered, open-ended conversations about their pets, their lives, and the barriers they face in seeking their own care. Unlike those without animal companions, pet owners are of-

ten met with repeated obstructions as they seek care for themselves and will simply choose to forfeit their own health. Interestingly, there were also stories of what appeared to be potentially implicit biases against pet owners by virtue of policies that may or may not have applied to those who are housed and fully employed. ***See, Appendix A for sample qualitative details.***

Discussion

Implications

This quality improvement project to create a data-driven partnership decision-making process has significantly improved the way SVO is able to successfully meet the needs of pets and their housing vulnerable owners. Creating a rational, evidence-based analysis to incorporate its mission of serving both humans and their animal companions has taken the organization to the next level of accountability. Having set up this new program, the following recommendations would ensure that the project remains relevant and is appropriately used:

1. **Operationalize Data Analysis Process:** While the process was created and tested, the next step is to fully operationalize the program into the current staff responsibilities. As a small organization, this is certainly a challenging phase, however, crucial to the continued success of the program. Key process steps include assigning SVO staff to create a monthly analysis, establishing procedures to maintain data integrity, incorporating survey data into the ranking spreadsheet, reviewing trends, and analyzing partnership opportunities to address high-ranking needs
2. **Periodic review of ranking processes:** The ranking system is new for SVO and should be reviewed at on a regular basis to ensure it remains relevant and meets the needs of the changing environment. Items to consider for review include:
   a. Ease of use
   b. Does it continue to accurately reflect SVO priorities?
   c. Is it being used by staff regularly?
   d. What changes, if any, might be needed?

3. **Periodic review of needs assessment survey to ensure that it continues to capture relevant information.** Just as with the ranking process, ensuring that the needs assessment remains relevant, particularly as we see changes to disease processes such as Covid-19, is crucial to ensuring a quality process.

Barriers and Facilitators

While there were some anticipated barriers, none derailed the project. The primary issue pertained to data management. With a small staff, there were no guardrails around how the master data list was used which challenged doing the analysis. However, a new policy was created that ensured the reliability of the data. Other barriers that were overcome included hesitation by stakeholders and potential resistance to change, small staff to accomplish data input in a timely manner, and staff intermittently being brought down by the COVID-19 illness for periods of time. A key factor in this project's success was the SVO team's mission-driven devotion to the project and their strong desire to positively impact health equity for those living homeless.

Conclusions

While there is often a strong heart and a powerful will in setting up a new nonprofit organization aimed to serve an important societal function, appropriate mechanisms for managing the business must be put in place to ensure sustainability and equitable operations. Alignment of stakeholders on the mission and vision and incorporation of operational processes based on data-driven decisions offers an avenue for success. By agreeing to standards that define operations and workload, a small, dedicated staff, such as at SVO, optimizes its ability to effectively function. Including the team in discussions about how these procedures were created ensured that stakeholders are engaged. The work done on this project provided SVO with literature support and data collection methods that substantiate their philosophy of how their work with pets improves the lives of pet owners, information that will significantly enhance their ability to secure sustainable funding.

Limitations

1. **Small Sample Size**

The key limitation for this project was its small sample size, a sample that was also limited to a particular area of the State of Washington. In addition, due to time and COVID-19 restrictions, the time allocated to doing this study was limited.

2. **Limited validation of needs assessment survey**

Although various iterations of the survey were created and tested with clients, the questions were designed by SVO and were not independently validated through an outside resource.

3. **Interview Bias**

The questions asked in the survey were based on literature research outlining issues previously identified in this population and were geared toward assisting SVO in creating partnerships to offer services. This limited purpose might have added some bias to the types of questions asked, however, SVO deemed these issues relevant to their purposes. The interviewers, however, were all trained together about how to engage clients in the survey and asked the questions in the same way.

4. **Lack of a Control Group**

Since SVO clinics support pet owners, non-pet owners were not interviewed to determine whether they faced similar issues. However, again, the focus was on finding pet- friendly access to human care services and SVO believed that the survey was able to achieve this goal.

List of Abbreviations:

HHV: Those experiencing homelessness and/or are housing vulnerable
NAS: SVO Needs Assessment Survey
PDSA: Plan, Do, Study, Act framework
SVO: Seattle Veterinary Outreach

Declarations

Ethics approval and Consent to Participate: This was a quality improvement process that did not need ethics approval. All SVO clients agreed to participate in the survey.

Consent to Publish: All authors have consented to publication;

there is no other personal identifying information about any of the client data.

Availability of data and material: The survey needs data used to create this quality review process is owned by SVO and is held within their own database. Only an overview of the information is included in the manuscript. Details are not available for public use.

Conflicts of interest/Competing interests: None that is known to the authors.

Funding : There were no outside funders for this project. This was a quality improvement process undertaken solely by SVO staff and volunteers.

Authors' contributions: N/A other than as already identified

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Appendix A: INFORMAL QUALITATIVE INTERVIEW COMMENTS

Stories & Comments Provided by Clients During Social Services Consultations

- SVO client needed inpatient care after falling and losing consciousness. To ensure safe housing for her dog while she was hospitalized, a neighbor who was familiar with SVO brought the dog to the clinic. SVO staff worked with Animal Control to house the pet and followed up to ensure the dog was returned to the client after she was released from the hospital.

- Resident of a tent community reported rats and possible Parvo infection in animals.
SVO deployed efforts to begin tracking the potential Parvo infections and secure treatments and worked with the Department of Health the address the possible rat infestation.

- Client with cats was unable to get housing until her pets had rabies vaccines. Unable to afford the medication, she had to wait until SVO clinic could provide the vaccines so she could sign a rental agreement.