Expanding Horizons Proposal 2023

DVM Class of 2025

Project Title: Trap-Vaccinate-Neuter-Return (TVNR) program in the Republic of Georgia: Clinical Experience and Survey of Local Communities on Humane Dog Population Management

Project Location and Partners

This 8-week Expanding Horizons project is proposed to occur between June and July of 2023 in Tbilisi, Georgia and surrounding areas. The Republic of Georgia is located in the Caucasus region and is designated as an upper middle income country by the World Bank. Georgia gained its independence from the Soviet Union in 1991 and has since strived to join the European Union. The country's official language is Georgian and a large percentage of the population also speaks Russian. I am being welcomed by Caroline Yates, the Head of International Projects & Relations of Mayhew. Mayhew is an animal welfare charity that was first established in 1886 in London, England. Mayhew has two international branches: in Georgia and Afghanistan. Since 2014, the Mayhew Georgia branch has been operating a community veterinary clinic in Tbilisi. The clinic currently employs two full-time DVMs and six veterinary technicians/assistants. At Mayhew Georgia, I will be working under direct supervision of the head veterinarian Dr. Ana Metskhvarishvili (DVM). The Mayhew clinic in Tbilisi collaborates with Tbilisi City Council and smaller local governments to manage free-roaming dog populations, vaccinate stray and community-owned animals, and improve animal welfare standards across the country.

Purpose

Stray animal population control is an ever-pressing issue in many countries around the world. Large numbers of unmanaged stray animals pose a direct risk to public health as they increase the spread of zoonotic diseases and become vectors and reservoirs of viral and bacterial infections such as rabies, leptospirosis, and leishmaniasis. Likewise, canine distemper spread by unvaccinated free-roaming dogs can affect community pets and numerous wildlife [2]. Furthermore, stray dogs and cats become opportunistic predators and destabilize the environment by attacking small wild species and their natural predators [1]. Uncontrolled reproduction of unsheltered animals coupled with limited resources for their management and support leads to decrease in overall animal welfare and escalation of human-dog conflict. Unlike the United States, where the number of homeless animals is generally managed with a robust shelter system and where vaccine coverage is extensive, many post-Soviet countries like Georgia are still challenged by a large number of free-ranging animals, especially dogs. Currently, the estimated number of stray dogs in Tbilisi, the capital city of Georgia, ranges between 43 000 and 80 000, according to web articles on the matter, but obtaining an accurate count is challenging and costly [7]. In the entire country of Georgia, the number of strays can exceed 500 000 [5]. The current shelter system, including government-funded and non-profit animal sanctuaries, cannot sustain such a large volume of unhoused animals [5]. Available

veterinary resources, such as doctors and funding for large-scale vaccination campaigns and community outreach, are limited in Georgia, similar to other former Soviet countries. Even though, in the last decade, the incidence of rabies in animals in the country fell by 63%, the virus remains endemic and dog vaccination coverage in Georgia is only at 21.1% [4][9]. Moreover, very little research is available on the number of animals vaccinated against canine distemper and canine parvovirus, which suggests the likelihood that even fewer animals are vaccinated against these infections. This hypothesis is substantiated by Dr. Metskhvarishvili's experience practicing veterinary medicine in Georgia for the past decade.

The purpose of my project in Georgia is to focus on clinical aspects of reproductive control measures and help collect data on the long-term impact and community attitudes toward mass sterilization of stray animals. Population control methods include lethal and non-lethal approaches [6]. Non-lethal methods are considered more humane and are recommended by numerous animal welfare organizations [1]. Trap-neuter-vaccinate-return (TNVR) is a common population management practice, where stray animals are caught, sterilized, vaccinated, tagged, and returned back to their environment [3]. However, the success of such an approach requires regular surveillance, ongoing investment into the program, and collaboration with local government entities. In 2014, UK-based animal welfare organization Mayhew took on a challenge to help humanely reduce the population of stray animals in the Republic of Georgia and its capital city. Mayhew International established a branch in Tbilisi, Georgia (Mayhew Georgia), funded a low-cost sterilization and vaccine clinic, and hired and trained Georgian veterinarians and veterinary staff. Today, Mayhew Georgia provides free spay and neuter services for both street and community dogs, vaccinates animals against rabies and DHPPI + L (distemper, canine hepatitis, canine parvovirus, canine influenza, and leptospirosis), and ear tags homeless dogs. The organization also provides hands-on training to Georgian veterinarians, technicians, and students to improve their surgical skills. As a partner in the International Companion Animal Management Coalition (ICAM), the organization advises both Tbilisi City Council and other regional governments on animal welfare. As a student intern, I will join Mayhew Georgia to assist the with daily caseload, help collect data to better understand the challenge of stray population control in different regions the country, and explore various elements of international collaboration in veterinary medicine.

Project Objective

There are three objectives that I would like to achieve while working at Mayhew Georgia. The first goal of this project is to gain clinical experience working in high-volume spay-neuter clinic that follows TNVR protocol. I want to get comfortable assisting with multiple procedures per day, working with surgical instruments, and operating and monitoring anesthesia. I have one and a half year of full-time work experience as a veterinary assistant/technician in a hospital in Brooklyn, New York, which operates with ample resources and has great continuity of care. In the United States, the shelter and foster system can provide housing and veterinary care for the majority of homeless dogs, and sometimes even supplement it with behavioral management prior to adoption or rehoming. In most parts of Georgia, however, TNVR is the only way to improve the lives of stray populations and decrease the number of animals on the streets. During my time in Georgia, I will get to participate in pop-up

spay-neuter clinics in different regions of the country. This project is a chance for me to experience working in rural areas in makeshift and mobile clinics, providing veterinary services while having limited resources, and helping a community that has little to no funds to spare.

The second objective of my proposal is data collection that will be used to evaluate the impact of the Mayhew Georgia program in the country. I will help survey local communities during pop-up clinics to gather information not only on the numbers of animals roaming the streets but also what impact the stray population has on the people living in the given regions. I want to improve the metrics of the current survey to assess public opinion and understand the root causes for persistence of the street dog population in Georgia. Examining the number of animals as well as what role they play in the community are essential for controlling the stray population in an efficient and sustainable manner.

Lastly, I want to learn about the fundamental element of international collaboration in stray animal population control programs and public health. I want to understand how a UK or US-based NGO can establish and operate free spay-neuter clinics in lower income countries like Georgia. I will look into the details of partnership with local governments and country-specific laws and regulations by which an NGO like Mayhew has to abide. I will learn about the clinical training that Mayhew provides for Georgian veterinarians and how those skills allow them to provide better service for their community and improve animal welfare standards. I believe that my project in the Republic of Georgia is a unique opportunity to experience veterinary field work, contribute to population control research, and learn about the challenges that come with practicing medicine in environments markedly different from a regular veterinary clinic.

Methods or Strategy

As a student trainee, I will be working under direct supervision of Dr. Ana Metskhvarishvili, who is the head veterinarian at Mayhew Georgia. The clinic is open five days a week, Monday through Friday, 10 am - 6 pm. On a daily basis, I will assist with surgeries, anesthesia, pre- and post-operative care, vaccinations, and ear tagging. The monthly case-load of the clinic is between 80 and 120 dogs spayed and neutered. I am expected to participate in all surgical procedures and assist with blood draws, catheterization, and fluids administration. During open hours when the clinic accepts community pets, I will get to perform physical exams and help with diagnosis and treatment. As Mayhew is dedicated to reducing the stray animal population not only in Tbilisi but also other regions of the country, the organization coordinates regular pop-clinics in surrounding villages and rural areas. As of now, there are 8 pop-up clinics planned for the months of June and July. These clinics are an essential access point for veterinary services for people and animals living in rural regions. Remote villages often do not have a veterinarian in the community and people there have few opportunities to obtain vital vaccines or sterilize their animals. Currently, Mayhew operates in the following regions: Mtskheta-Mtianeti region, Kvemo-Kartli region and Kakheti region (map attached in the Supporting Materials section). I will join the staff traveling to these locations whenever the clinics are scheduled to occur. The only way to access these regions is by ground transportation, mini-bus or car provided by one of the staff members. I will split the cost of fuel with the rest of the team when traveling together. The pop-up clinics normally run for one to two days, and the doctors and technicians can stay overnight in local hotels. During such field visits, I will learn about planning, logistics, and administration requirements for organizing and

running pop-up clinics. I will also get familiarized with the use of injectable anesthesia and the nuances of performing surgeries with limited resources in makeshift and mobile clinics.

In order to evaluate their impact in Georgia, Mayhew utilizes two tools: TALEA Street Survey App and Mayhew community surveys. The TALEA application was developed by ICAM and allows the general public to record sightings of stray animals and veterinarians to add data on animal health and pool numbers into a centralized database. TALEA Street Survey App has been translated into Georgian and can be used on Android phones [8]. Mayhew Georgia utilizes the app during field work to record the number of animals spayed/neutered, their age, lactation status, body condition score, and any identification associated with them. The data is pooled into a centralized database and can later be used for impact analysis.

In addition, during pop-up clinics, Mayhew distributes community surveys to gather statistics on the current stray population and community attitudes toward homeless animals in the region. Mayhew collaborates with local municipalities to distribute surveys to their residents either in electronic or paper format (the copies of two surveys regularly used are attached in the Supporting Materials section). The surveys are designed to gather information about the community opinion on the number of animals on the streets, public sentiment regarding sterilization, people's degree of attachment to them, the level of concern in regard to dog bites and infectious diseases, and more. With the approval of the local government, the current goal is to sterilize a minimum of 75% of the stray population reported by the community in a given region where the pre-intervention survey was conducted. Mayhew Georgia team aims to continue to run pop-up clinics in the region until this goal is reached. After this, a post-intervention survey is distributed.

The numbers of animals sterilized and vaccinated is used for Mayhew's annual report. It is important to mention that Mayhew Georgia started their pop-up clinics in the summer of 2022. Therefore, there has not been enough time to evaluate how the sterilization clinics are changing the number of stray animals in rural regions [3]. Nonetheless, it is possible to evaluate public perception on stray animal issues throughout the project. As I will be directly involved in data collection, my goal is to work with Mayhew Georgia to improve their survey, quantify existing data, and create a metric to consider community attitudes regarding sterilization and vaccine campaigns as a measure of the organization's success in the region. I will modify and add questions to the current Mayhew surveys so that they can also be used to calculate a net promoter score and a community satisfaction score via a data analytics tool in Excel. These metrics in the post-intervention survey can assess how likely people are to promote TVNR programs and how satisfied they are with the changes that Mayhew brings to their community. This questionnaire could also be utilized in the Tbilisi clinic, where Mayhew has been operating since 2014. In the future, this data can help Mayhew better demonstrate its impact, advocate for more TVNR campaigns, and expand their work to other parts of the country.

Approvals

No approvals are required for this project. The Mayhew team has had a long presence in Georgia and has utilized its surveys in many parts of the country, in collaboration with local municipalities.

Feasibility: Expected Outcomes and Difficulties

The Mayhew animal welfare charity and its international branch in Tbilisi, Georgia are well-established and trusted organizations. Dr. Caroline Yancey connected me with Caroline Yates, the Head of International Projects & Relations at Mayhew, and from that point I have been able to establish a relationship with the Mayhew team in Tbilisi. This project is expected to be completed within 8 weeks, starting in early June and ending in late July. Considering the nature of the experience, I believe it is enough time for me to gain valuable surgical skills, experience working in the field during pop-up clinics, and help with data collection.

Often, one of the most challenging parts of international work is the language barrier. However, because I am fluent in Russian, I believe that I will have little difficulty getting around Georgia where the majority of the population can understand and speak Russian. The more remote areas of Georgia tend to have a higher proportion of Russian speakers while in Tbilisi English is a common second language. The Mayhew Georgia team also speaks really good English so I do not foresee having a major language barrier. However, I am committed to learning conversational Georgian as I believe it is a way to respect the people and the country I am visiting and is integral to cultural immersion. Overall, Georgia is a safe country to travel to aside from regions of South Ossetia and Abkhazia which are currently under Russian occupation. I will not be near those regions during my project. I will also register my trip with the Cornell International Travel Registry should there be an emergency or developing situation in Georgia at the time of my project. The capital city of Tbilisi is a major tourist destination for Europeans and is considered safe for travelers. The Mayhew Georgia clinic where I will spend the majority of my time is located close to the Tbilisi International Airport and is accessible via public transportation. I will have to take the bus or minibus (marshrutka) daily to get to the Mayhew clinic but, again, I do not expect this to be challenging. During my trip to Georgia, I will be covered by Cornell SOS International Travel Insurance. I am fully vaccinated against rabies and will get a tetanus booster prior to travel. I understand that there is an inherent risk when working with a stray animal population and I will exercise great caution and proper restraining techniques when handling animals. Rabies post-exposure prophylaxis is available in Tbilisi, Georgia.

Professional Impact and Development

I aspire to become a small-animal veterinarian focused on population control and education. Since starting my journey at Cornell, I have been increasingly interested in small animal medicine and work in developing countries and regions affected by human conflict. I am excited to work on this project in Georgia not only as a veterinary student but also as someone who grew up in a post-Soviet country and has first-hand experience living with a large stray animal population, overrun shelter system, and lack of widespread vaccinations for animals. Growing up in Ukraine, I was always cautious around the stray dogs that roamed the streets of my city yet always recognized them as an integral part of my community. I am well aware of how important stray or community animals can be for local residents and, therefore, humane population control measures are essential. Trap-vaccinate-neuter-return programs are recognized to improve animal quality of life, reduce human-dog conflict, and preserve the

human-animal bond [3].

My long-term goals include returning to Ukraine as a veterinarian to help my country rebuild after the war as well as participate in similar projects in other parts of the world. During this project in Georgia, I will be able to gain knowledge that is essential for my future career as a veterinary surgeon striving to work in developing countries. I will also be able to get valuable experience in data collection and evaluate the continuity and success of TVNR programs in a region with a similar history to Ukraine. Moreover, I will have an opportunity to build my professional network in the field of international veterinary medicine and regionally, at the intersection of Caucasus and Eastern Europe. I want to learn how a US- or a UK-based NGO establishes and maintains its presence internationally and how they invest into the instruction of local veterinarians. Such an opportunity this early in my training will bolster my education and give me a solid foundation for a career that I am passionate about.

Itemized budget

Travel	
Round-trip flight (JFK-IST-TBS)	\$1,590
Living Expenses	
Housing – Airbnb in residential area in Tbilisi, Georgia for 8 weeks	\$2,100
Food – breakfast (\$5), lunch (\$5), dinner (\$10) per day for 8 weeks	\$1,120
Transportation within Tbilisi (2-month unlimited bus card)	\$60
Local SIM card with internet access (2-month)	\$60
Training Materials and Expenses (paid to Mayhew)	
Suture materials (3 packs, \$45/pack, 12 units/pack)	\$135
#10 scalpel blades (1 pack, 100 blades/box)	\$26
Surgical masks (2 boxes, \$11/box, 100 units/box)	\$22
Sterile gloves, size 6.5 (3 boxes, 45\$/box, 50 gloves/box)	\$135
Non-sterile procedure gloves (2 boxes, 100 gloves/box, 11\$/box)	\$22
Field Work	
Headlight	\$25
First aid kit	\$25
Transportation to/from field sites, fuel price (x8 sites)	\$300
Overnight stays at local villages (x4 sites)	\$150
TOTAL:	\$5,770

Budget justification

The total budget of \$5,770 has been prepared based on current prices available online and in consultation with the managing director and staff at Mayhew Georgia. The cost of the round-trip ticket from New York (JFK) to Tbilisi (TBS), with a connection in Istanbul (IST), is based on current flights available online for presumed dates. The departure date would be in late May-early June and return in late July. The summer is considered a high-season to travel to Tbilisi, Georgia and the price of tickets goes up closer to the summer. Housing costs were obtained from Airbnb apartments currently available through the service. The housing and overall cost of living in Tbilisi has gone up significantly in the past year due to a wave of immigrants from Russia. It is also important to mention that since early 2022, the Georgian currency (lari) has gained value against the US dollar and is expected to continue to strengthen. The current rate for a single-person apartment (with a small kitchen and a washer, close to public transportation) in a residential area of Tbilisi is around \$900/month pre-tax. With taxes and other Airbnb fees, I estimate the housing for 8 weeks (2 months) to be \$2,100. The Mayhew clinic is located outside of the main residential area of Tbilisi and I will have to get a pass to access public transportation during my stay there. I will also need a local SIM card to have phone service and internet access. The local card is 60\$ for 2 months, which is more cost-effective than paying for international calls and 3G internet via my current service provider. The estimated cost of materials used during my time with Mayhew is based on the clinic's monthly caseload, which is between 80 and 120 dogs neutered and spayed per month. I expect to participate in most procedures during my time at Mayhew and will need to pay for the materials utilized, as Mayhew is a non-profit organization and will incur costs associated with my training. I was informed that the organization plans to have 8 pop-up clinics in different regions of Georgia during the months of June and July. Many of these regions are accessible only by ground transportation and I am expected to split the cost of fuel. I was told that about half the time Mayhew employees stay overnight in local villages, therefore I included that cost for additional housing under Field Work. I understand that my budget exceeds the maximum grant amount and kindly ask the committee to consider this proposal for the maximum award of \$5,500. I will also seek additional funding through the SAVMA Travel Grant to cover the remaining expenses.

References

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- 7. Nikoladze, T. (2022, January 17). *Stray animals in Georgia: why isn't sterilization solving the problem?* English Janews. https://jam-news.net/georgia-stray-dogs/
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- 9. Zhorgabayeva, A. (2020, December 3). *Rabies control in Georgia*. WOAH Europe. https://rr-europe.woah.org/en/news/rabies-control-in-georgia/

Supporting Materials

Map of the Republic of Georgia:

Mtskheta-Mtianeti region is located north of Tbilisi, Kvemo Kartli region is directly south of the capital, and Kakheti region is east of Tbilisi.



Republic of Georgia. Image source: https://www.worldatlas.com/maps/georgia



DOG SURVEY QUESTIONNAIRE

Mayhew Georgia is carrying out a survey on attitudes to dogs in XXXXXX in order to develop a support project to improve the health and welfare of the free-roaming dogs in the region.

Question	Choice of answer
Are there many unowned dogs roaming in your neighborhood?	A few A lot Too many Don't know
2. In your opinion, what is the attitude of the people in XXXX to unowned dogs roaming in the neighborhood?	Like them Consider them pests Don't care about them Other
3. What concerns do you have about street dogs?	Noise Dog bites/chasing/attacks Threat to other animals Urine & feces Raiding rubbish bins Seeing sick and injured dogs & puppies
4. In your opinion how do owned/pet dogs differ from street dogs?	Street dogs are more dangerous Street dogs spread more diseases Street dogs are wild Street dogs are not purebred No difference Don't know
5. What is the condition of the unowned dogs roaming in your neighborhood?	Healthy Thin but generally healthy Sick looking
6. Where do you think these dogs come from?	Pet dogs having litters of puppies People abandoning pet dogs Unowned dogs reproducing Don't know
7. Do you, or anyone else, feed these dogs?	Yes No

8. Have you ever been bitten by your dog or an unknown/street dog?	Own dog Unknown dog Street dog
9. Did you report the dog bite?	Yes No
10. Did you receive treatment for the dog bite?	Yes – PEP vaccination/antibiotics No
11. Who would you go to if you were concerned about the welfare of these unowned dogs?	Vet clinic Municipality

	Other
12. Who would you go to if you wanted to complain about issues caused by these dogs?	Pest control Municipality Other
13. How do you think the number of street dogs should be controlled?	Sterilise/castrate them Kill them Put them in a shelter Leave them to live naturally Don't know
14. In your opinion, do you think there would be support within the community for individuals or organizations working towards resolving problems caused by unowned dogs?	Yes No
15. Do you know what an ear-tag means in a street dog?	Yes – what? (neutered and vaccinated) No
16. How would you feel about neutered & vaccinated street dogs living in your neighborhood?	Positive Negative - why?

If you would like to give your name and contact details, please be assured the information you have given will only be used by Mayhew Georgia to draw up a welfare support programme and contact you if needed.

Name:

Address:

Contact number:



DOG SURVEY QUESTIONNAIRE

Mayhew Georgia is carrying out a survey on attitudes to dogs in XXXXXX in order to develop a support project to improve the health and welfare of the free-roaming dogs in the region.

Question	Choice of answer
1. Do you own a dog?	Yes No – if no, go to Q15.
2. If yes, how many dogs do you have?	1 2-3 4-5 6+
3. What sex is your dog/are your dogs	Male: Female;
4. How would you describe your dog (s)?	Pet dog Guard dog Working dog
5. Is your dog/are your dogs neutered?	Yes No
6. If not, why not?	Don't understand what that is Don't believe in it/don't think it is right Want to breed Don't know
7. If female, has your dog had puppies?	Yes - one litter/more than one litter? No
8. What happened to the puppies?	Kept them Sold them Gave them away Put them out on the street Died Killed them
9. Is your dog/are your dogs vaccinated?	Yes – rabies / complex vaccine No
10. Do you regularly flea and worm your dog(s)?	Yes - When was the last time? No

11. What is your dog's lifestyle?	Kept exclusively indoors Kept exclusively outdoors in garden/yard Left to roam in the neighborhood
12. Who do you go to when your dog/dogs are sick?	Local vet clinic Vet clinic in nearest city (XXX) Try to look after at home Other

13. Where did you get your dog(s) from?	Took on a street dog A friend A pet-shop A breeder Other
14. Is your dog/are your dogs identified in any way?	Microchip Collar Tattoo Ear-tag No
15. Have you ever been bitten by your dog or an unknown/street dog?	Own dog Unknown dog Street dog
16. Did you report the dog bite?	Yes No
17. Did you receive treatment for the dog bite?	Yes – PEP vaccination/antibiotics No
18. In your opinion, what is the attitude of the people in XXXX to owned/unowned dogs roaming in the neighborhood?	Like them Consider them pests Don't care about them Other
19. Are there many unowned dogs roaming in your neighborhood?	A few A lot Too many Don't know
20. In your opinion how do owned/pet dogs differ from the street dogs	Street dogs are more dangerous Street dogs spread more diseases Street dogs are wild Street dogs are not purebred No difference

	Don't know
21. What is the condition of the unowned dogs roaming in your neighborhood?	Healthy Thin but generally healthy Sick looking
22. Where do you think these dogs come from?	Pet dogs having litters of puppies People abandoning pet dogs Unowned dogs reproducing Don't know
23. Do you, or anyone else, feed these dogs?	Yes No
24. In your opinion, do people think that these dogs have a positive or negative impact on the community?	Positive Negative

25. If negative, what are the problems?	Noise Dog bites/chasing/attacks Threat to other animals Urine & feces Raiding rubbish bins Seeing sick and injured dogs & puppies
26. Who would you go to if you were concerned about the welfare of these unowned dogs?	Vet clinic Municipality Other
27. Who would you go to if you wanted to complain about issues caused by these dogs?	Pest control Municipality Other
28. How do you think the number of street dogs should be controlled?	Sterilise/castrate them Kill them Put them in a shelter Leave them to live naturally Don't know
29. In your opinion, do you think there would be support within the community for individuals or organizations working towards resolving problems caused by	Yes No

unowned dogs?	
30. Do you know what an ear-tag means in a street dog?	Yes – what? (neutered and vaccinated) No
31. How would you feel about neutered & vaccinated street dogs living in your neighborhood?	Positive Negative - why?
32. Would you support a managed Trap, Vaccinate, Neuter, Return programme to prevent further reproduction, improve dog welfare and reduce numbers in the long-term?	Yes No

If you would like to give your name and contact details, please be assured the information you have given will only be used by Mayhew Georgia to draw up a welfare support programme and contact you if needed.

Name: Address:

Contact: