



# **Community Health Interventions in Wyandotte County, KS & The Development of a One Health Clinic with Community Veterinary Outreach**

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Master of Public Health Candidate

Infectious Disease and Zoonoses

April 15, 2022

# Background

- From Overland Park, Kansas
- Bachelor's in Biology from Kansas State University
- 3<sup>rd</sup> year veterinary student



# Background

- Field experience with the Unified Government Community Health Division
  - June 1, 2021 – July 23, 2021
  - Preceptor: Ms. Bianca Garcia
- Field experience with Community Veterinary Outreach
  - April 4, 2021 – December 27, 2021
  - Contact: Dr. Lara Plass



Community  
Veterinary  
Outreach



Unified Government of Wyandotte County, KS – Community Health Division

# **PART ONE: COMMUNITY HEALTH INTERVENTIONS**

# Wyandotte County, KS



23% Adult  
Smoking Rate



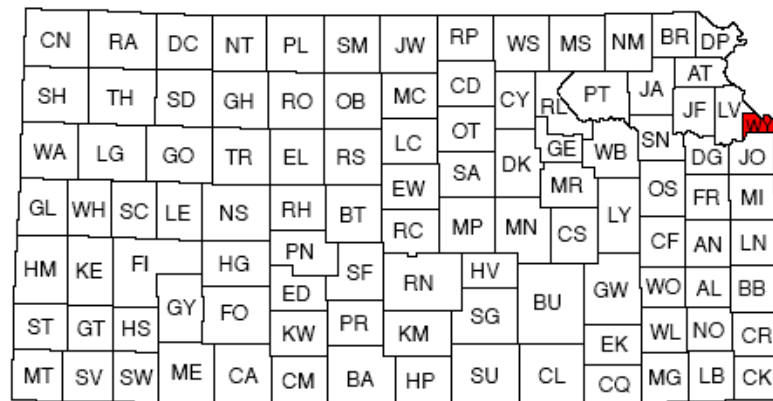
31% Physical  
Inactivity Rate



21% Poor or  
Fair Health

## Health Outcomes & Health Factors:

- Length and quality of life
- Health behaviors
- Clinical care
- Social and economic factors
- Physical environment



# Tobacco Free Wyandotte Learning Objectives

- Interpret county-level health information to present a public health issue
- Systemize research into a health topic pertinent to a specific population
- Participate in an inter-agency collaboration



# Youth Tobacco Use 2020 Data

- 28% of Kansas high school (HS) students report current use of tobacco products
- In Wyandotte County:
  - 15% of HS students report being offered drugs on school grounds
  - 59% of HS students have not spoken with a trusted adult about the dangers of drugs, alcohol, or tobacco in the last 12 months
  - 19% of HS students perceive no physical harm in people who smoke one or more packs of cigarettes each day



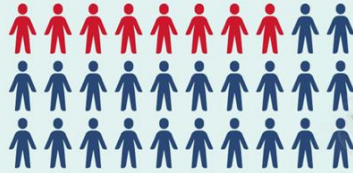
# Effects of Nicotine in Adolescents

- Nicotine = a highly addictive agent
  - Can alter cognitive ability, mood, behavioral control, and sleep in adolescents
  - These effects can manifest as disruptions in the classroom environment





# Teen Tobacco Use in Wyandotte County



28%

Twenty-eight percent of Kansas high school students report current use of any tobacco product including cigarettes, electronic cigarettes, and smokeless tobacco. This means that in a classroom of thirty, eight of your students will have nicotine in their system.

Source: <https://www.fda.gov/tobacco-products/youth-and-tobacco/get-latest-facts-teen-tobacco-use>

Tobacco products contain nicotine, a highly addictive agent. Nicotine greatly affects an adolescent's daily life, causing changes in their cognitive abilities, mood, behavioral control, and sleep.



These effects can impair a student's performance in the classroom, and contribute to a disruptive learning environment.

Source: <https://www.sciencedirect.com/science/article/pii/S0749379715000355>

# In Wyandotte County



Students report being offered, sold, or given drugs on school property.

Educators can reduce the distribution of drugs on campus through encouraging students to make the commitment to be drug-free



Students have not spoken with an adult about the dangers of tobacco, alcohol, or drug use in the past 12 months.

Teachers and administrators have the potential to educate the majority of students on these issues.



Students perceive no physical harm in people who smoke one or more packs of cigarettes each day.

Cigarettes are associated with lifelong damage to the neurological, cardiovascular, and respiratory systems.

Source: <https://kctcddata.org/Home/StudentSurvey?SurveyType=KCTC&CodeSelection=CTY&CountyId=10105-0>

Studies show that nicotine can impair working memory, selective attention, and emotional processing leading to a lack of focus and impulse control in the classroom.



Teen tobacco use can lead to adverse mood and behavioral changes, inciting higher levels of depression, anxiety, irritability, and restlessness.

Nicotine dependence contributes to poor sleep quality, and students can experience decreased productivity and absenteeism with potential long-term effects on their education.



Sources:

<https://www.sciencedirect.com/science/article/pii/B9780128152980000095>  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3762940/>  
<https://www.sciencedirect.com/science/article/pii/S0306460316303768>

For more information, visit [e-cigarettes.surgeongeneral.gov](http://e-cigarettes.surgeongeneral.gov)

# Community Health Improvement Plan (CHIP) Learning Objectives

- Identify the best practices in recidivism-reduction programming
- Lead subcommittee discussion of project goals
- Create an open-ended survey for local resource organizations



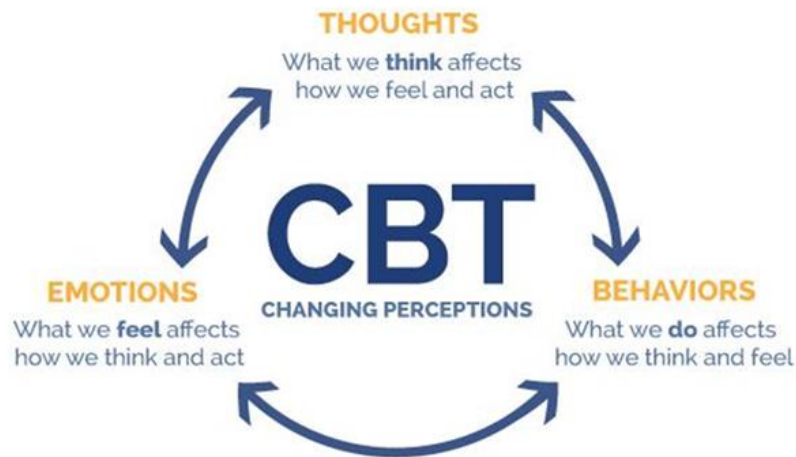
# The Prison Industrial Complex and Recidivism

- The United States has the largest population of incarcerated individuals in the world
  - Kansas has an incarceration rate of 698 per 100,000 people
- Recidivism: repeated criminal activity
  - Recidivism-reduction programs are designed to prevent justice-involved individuals from re-entering the prison system following their prior release



# Recidivism-Reduction Programming

- Recidivism is a common outcome due to lack of resources, social connections, and opportunity



<b>RISK</b>	Identify an individual's risks
<b>NEED</b>	Assess characteristics that influence risk
<b>RESPONSIVITY</b>	Provided personalized interventions

# Community Health Improvement Plan (CHIP)

- Five year plan under the Community Health Division targeting improvements in:
  - Education and jobs
  - Healthcare access
  - Safe and affordable housing
  - Violence prevention



# Community Health Improvement Plan (CHIP)

- Goal of violence prevention
  - Evaluate resources for justice-involved community members in Wyandotte County



**Product 2:** Recidivism-  
Reduction Presentation



**Product 3:** Justice-Involved Individuals  
Community Resources Survey

# Infrastructure Action Team Learning Objectives

- Understand Complete Streets legislation and its role in public health
- Identify performance measures to assess policy implementation
- Guide potential considerations in policy implementation



# Infrastructure in The United States



- The United States' infrastructure built in the 1960s
  - Designed to promote vehicular speed and cost efficiency
- Systemic underinvestment in underserved communities



# Complete Streets

- Infrastructure designed at the community level
- Prioritize:
  - User accessibility
  - Public safety
  - Environmental sustainability
  - Health promotion
  - Social equity



# Infrastructure Action Team

- Complete Streets Ordinance passed in November 2020
- No project currently underway



INFRASTRUCTURE  
ACTION TEAM

## COMPLETE STREETS ORDINANCE RESOURCES

<http://www.hewy.co.org/iat>  
[bhensley@wyockck.org](mailto:bhensley@wyockck.org)

## IMPLEMENTATION RESOURCE CATALOG

August 12, 2021 1:00pm - 2:30pm  
Zoom ID: 840 6870 6600



August 12, 2021  
IAT Monthly Meeting

Prepared by:  
Valerie Mombello,  
MPH Intern for the UG,  
Public Health Department

# CONTENTS

## RESOURCE CATALOG

### PAGE 1 - IMPLEMENTATION GUIDES AND PRACTICES

- The American Planning Association
- Smart Growth America
- Minnesota Department of Transportation

### PAGE 2 - PUBLIC HEALTH LENS

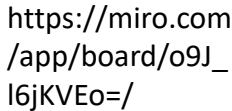
- Health Impact Reports and Assessments
- Journal Articles

### PAGE 3 - EVALUATION & SUSTAINABILITY

- Evaluation Guides
- Sustainability Guides

### PAGE 4 - CASE STUDIES

- Toolkits
- Reports
- Policy Map



# Infrastructure Action Team – Product 6

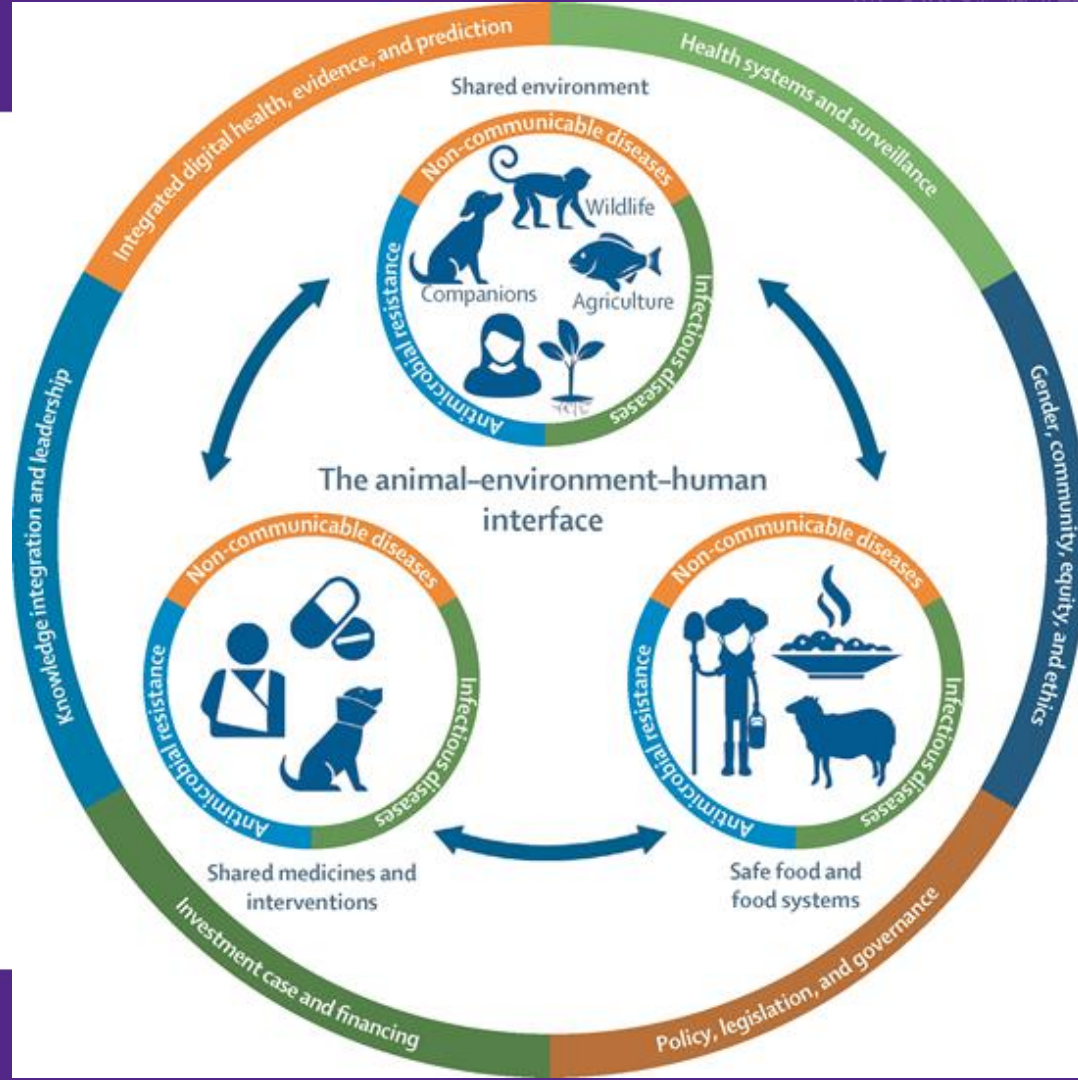
- A Health Impact Checklist guides the thought process through potential health effects
- Assesses the decision's impact:
  - Social factors
  - Economic factors
  - Environmental conditions





Community Veterinary Outreach

# **PART TWO: THE DEVELOPMENT OF A ONE HEALTH CLINIC**



<https://els-jbs-prod-cdn.jbs.elsevierhealth.com/cms/asset/edc58f3e-e32a-4166-b400-4c205f44a29b/gr1.jpg>

# One Health Clinics

- One Health clinics provide:
  - Human medical care
  - Veterinary care
  - Social services
  - Community resources



# Community Veterinary Outreach (CVO)



Community  
Veterinary  
Outreach

- One Health clinics for community members experiencing housing insecurity

# Community Veterinary Outreach (CVO) in Kansas City

- Veterinary care
- Partnerships with human healthcare service providers
- My products are tied to CVO clinics at these locations
  - Street Medicine KC: July 10, 2021
  - Metro Lutheran Ministry KC: August 14, 2021

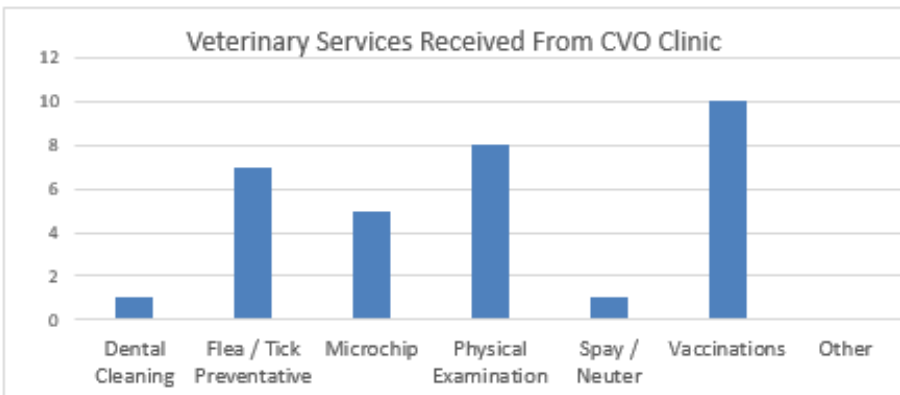


- Understand the needs of CVO participants in terms of their health and their animals' health

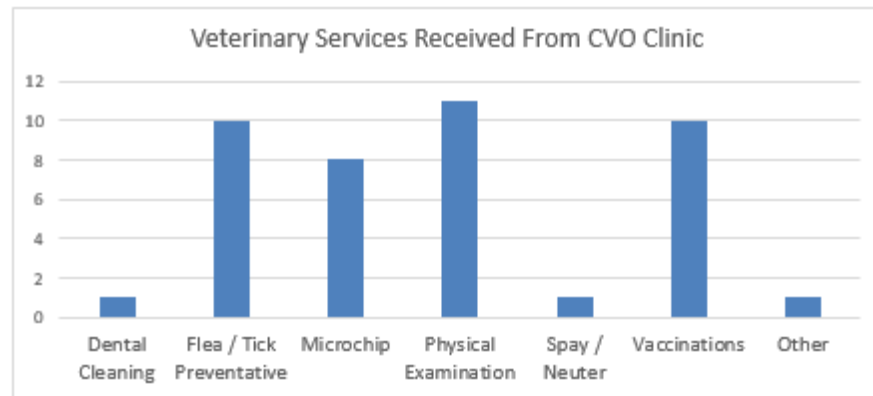
# CVO Utilization and Accessibility Survey – Product 7

- Survey goals:
  - Identify veterinary services utilized in present clinics and desired services for future clinics
  - Measure the promotion and convenience of present clinics
  - Identify participant access to veterinary care and human medical services
  - Gauge participant interest in CVO as a fully operational One Health clinic
- Survey Administration:
  - Street Medicine KC (SMKC) July 10, 2021 **n=10**
  - Metro Lutheran Ministry KC (MLMKC) August 14, 2021 **n=13**

# CVO Utilization and Accessibility Survey Results

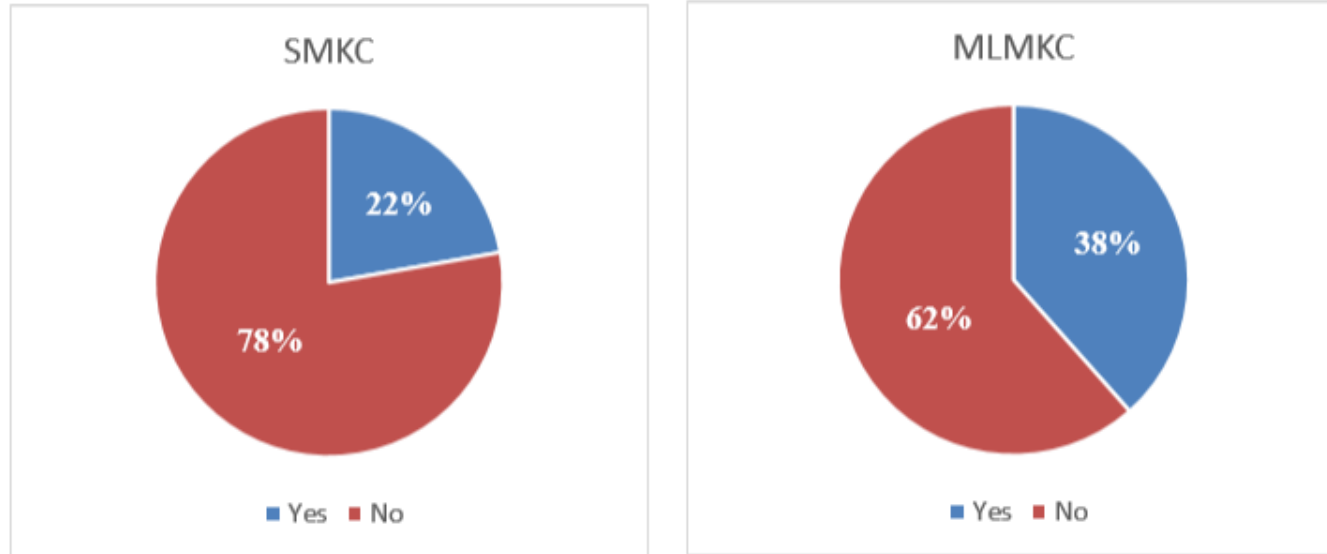


**Figure 1** Veterinary services received at the present Community Veterinary Outreach clinic as reported by pet owners. Street Medicine Kansas City (SMKC), 07/10/2021, n=10.



**Figure 2** Veterinary services received at the present Community Veterinary Outreach clinic as reported by pet owners. Metro Lutheran Ministries Kansas City (MLMKC), 08/14/2021, n=13

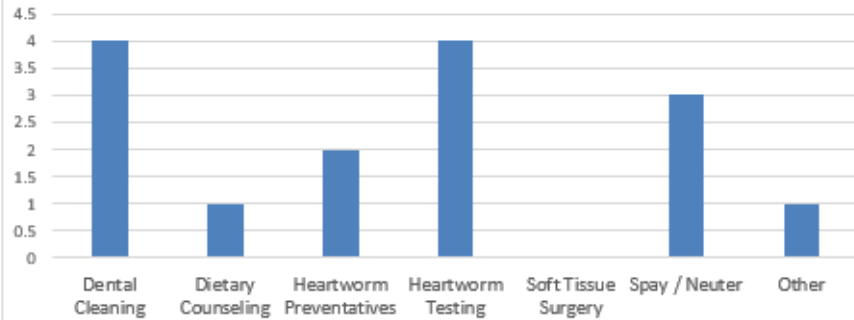
# CVO Utilization and Accessibility Survey Results



**Figure 3 Likelihood that pet would have received veterinary care from another source if not from the present Community Veterinary Outreach clinic. Street Medicine Kansas City (SMKC), 07/10/2021, n=10. Metro Lutheran Ministries Kansas City (MLMKC), 08/14/2021, n=13.**

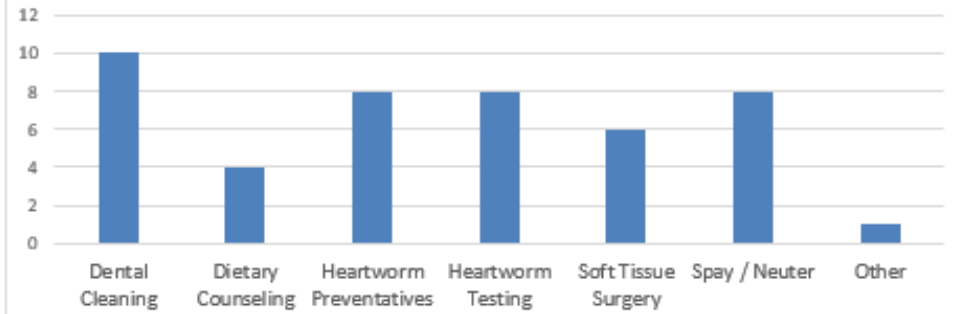
# CVO Utilization and Accessibility Survey Results

Veterinary Services Requested by Pet Owners  
for Future CVO Clinics



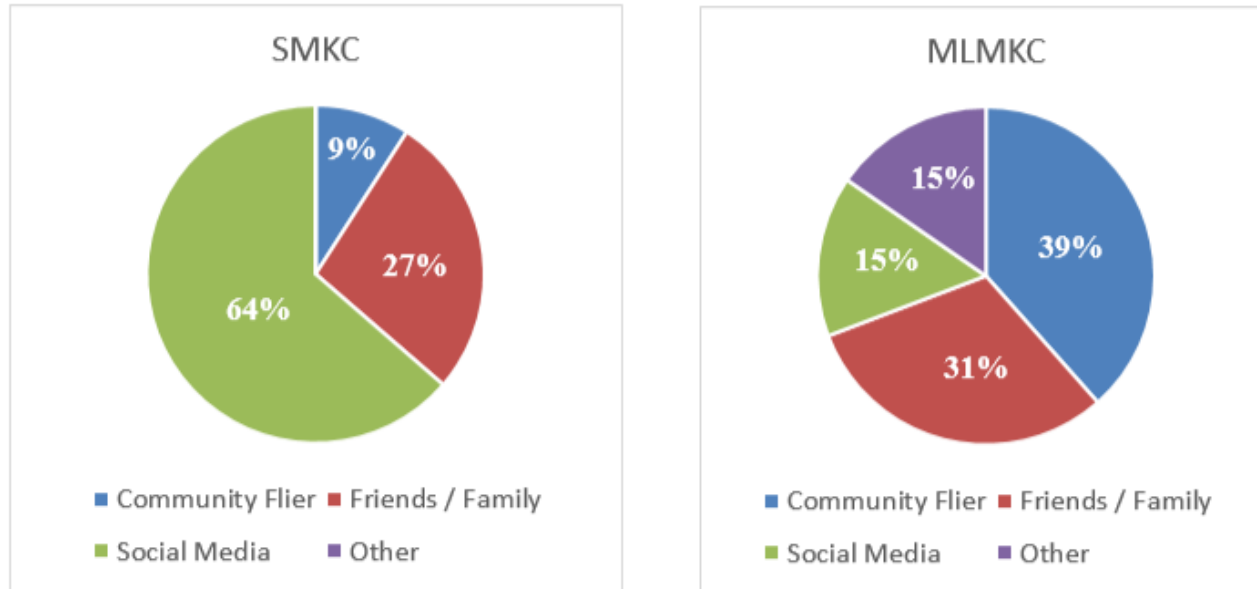
**Figure 4** Veterinary services requested by pet owners for future Community Veterinary Outreach clinics. Street Medicine Kansas City (SMKC), 07/10/2021, n=10.

Veterinary Services Requested by Pet Owners  
for Future CVO Clinics



**Figure 5** Veterinary services requested by pet owners for future Community Veterinary Outreach clinics. Metro Lutheran Ministries Kansas City (MLMKC), 08/14/2021, n=13.

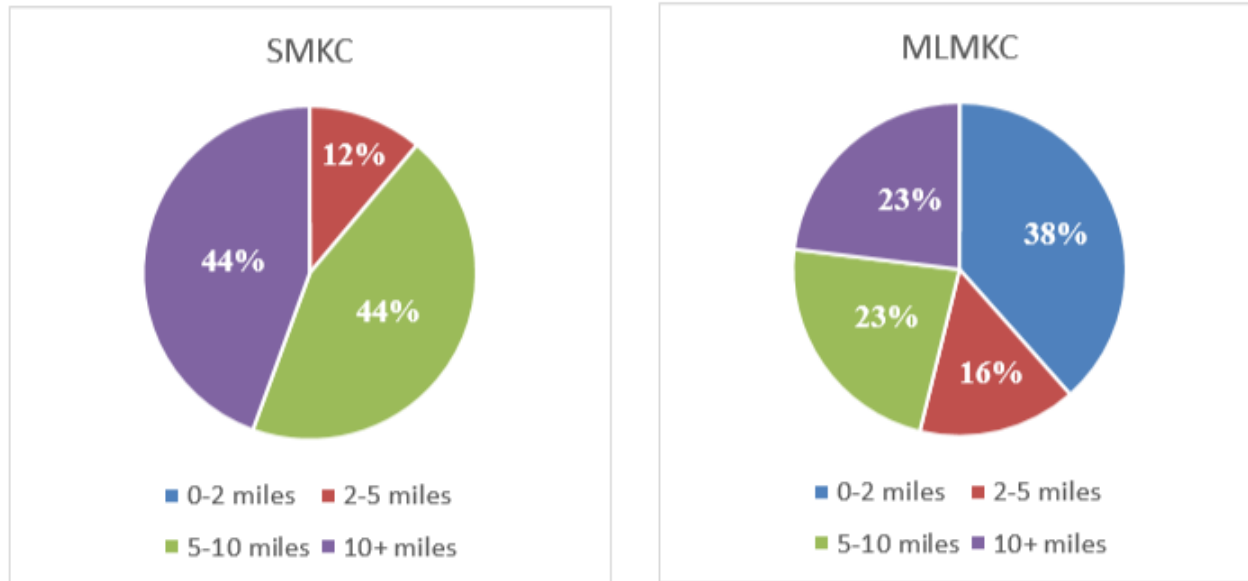
# CVO Utilization and Accessibility Survey Results



**Figure 6 Mode through which pet owners heard about the present Community Veterinary Outreach clinic. Street Medicine Kansas City (SMKC), 07/10/2021, n=10. Metro Lutheran Ministries Kansas City (MLMKC), 08/14/2021, n=13.**

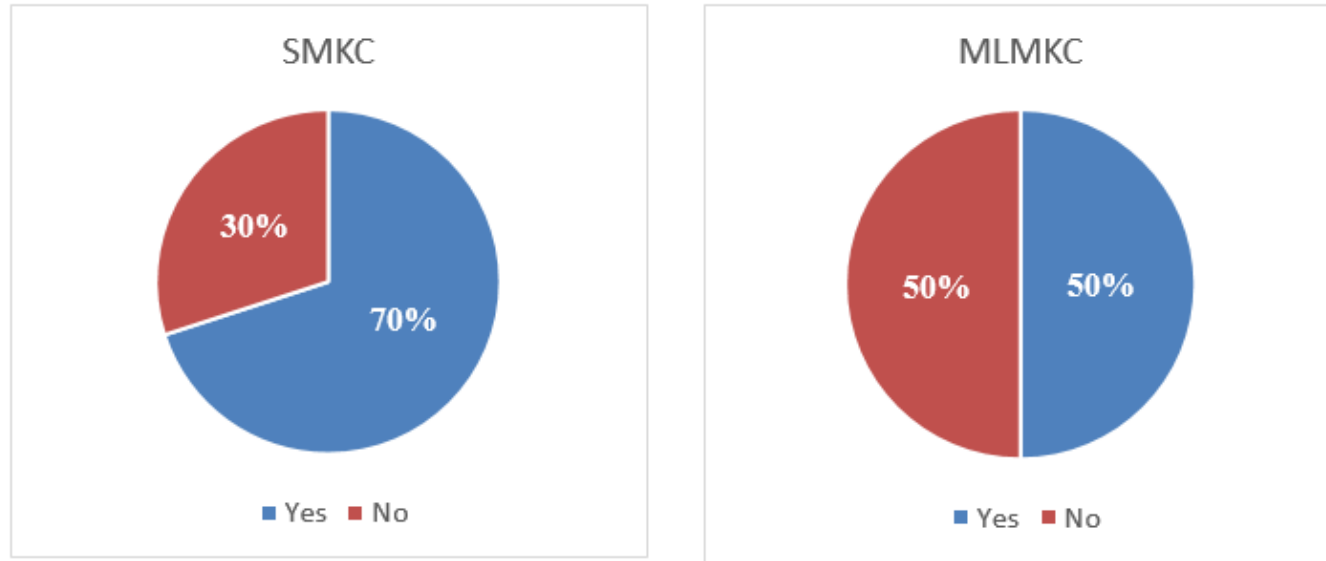


# CVO Utilization and Accessibility Survey Results



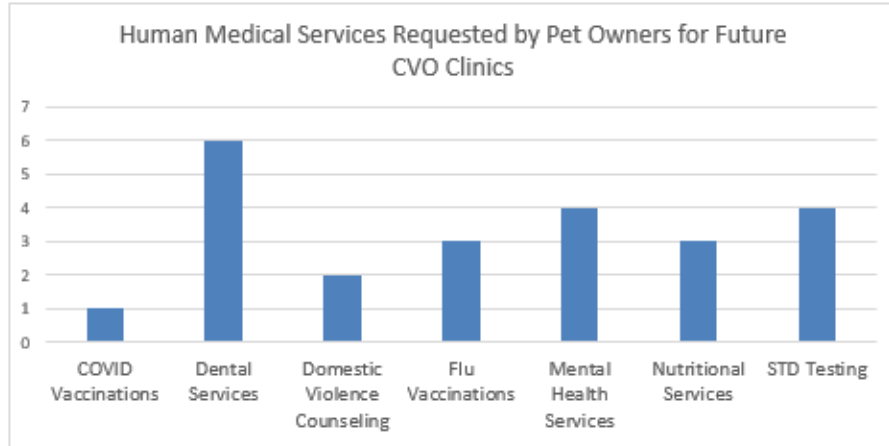
**Figure 7 Distance traveled by pet owners to reach the present Community Veterinary Outreach clinic. Street Medicine Kansas City (SMKC), 07/10/2021, n=10. Metro Lutheran Ministries Kansas City (MLMKC), 08/14/2021, n=13.**

# CVO Utilization and Accessibility Survey Results

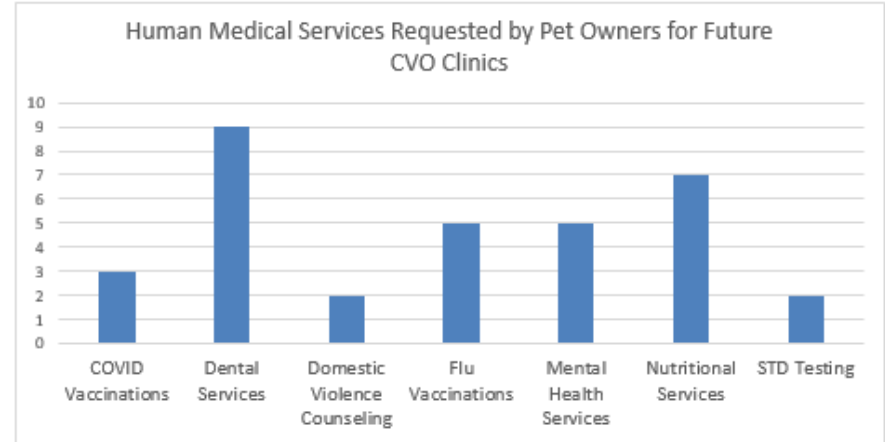


**Figure 8 Pet owners at present Community Veterinary Outreach clinic that have a local medical provider for their own health services. Street Medicine Kansas City (SMKC), 07/10/2021, n=10. Metro Lutheran Ministries Kansas City (MLMKC), 08/14/2021, n=13.**

# CVO Utilization and Accessibility Survey Results



**Figure 9** Human medical services requested by pet owners for future Community Veterinary Outreach clinics. Street Medicine Kansas City (SMKC), 07/10/2021, n=10.



**Figure 10** Human medical services requested by pet owners for future Community Veterinary Outreach clinics. Metro Lutheran Ministries Kansas City (MLMKC), 08/14/2021, n=13.

# Educational Handouts Learning Objective

- Create effective educational handouts describing medical conditions and needs

- CVO team expressed a need for educational handouts for pet owners
- Conditions:
  - Arthritis in dogs and cats
  - Vaccines and vaccine reactions
  - GI upset in dogs and cats
  - Diabetes in dogs and cats

# Arthritis in Dogs and Cats



Arthritis is a disease present in dogs and cats, just as it occurs in humans. It is a gradual worsening of joints including the knees, hips, and elbows. However, there are some key differences in the causes, clinical signs, and management plans of the condition.



60%  
of dogs demonstrate  
evidence of arthritis on  
x-rays



91%  
of cats ages 0.5-20  
years demonstrate  
evidence of arthritis  
on x-rays

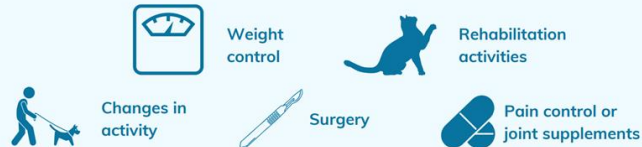
## Causes of arthritis in dogs and cats:

- |                           |                                |
|---------------------------|--------------------------------|
| High impact activities    | Large breed dogs               |
| Hip dysplasia as a baby   | Poor nutrition                 |
| Elbow dysplasia as a baby | Fractures or ligament injuries |
| Genetics                  | Obesity                        |

While arthritis is usually diagnosed in older dogs and cats, like in people, it can also happen in younger animals that have an underlying cause that puts them at risk for arthritis.

- |                                |  |                                       |                                |
|--------------------------------|--|---------------------------------------|--------------------------------|
| Challenges getting up and down | Loss of endurance or a stiff gait        | Does not want to jump up or down      | Stiff, swollen, or sore joints |
| Lameness in one or more legs   | Does not want to be touched or socialize | Does not want to go up or down stairs | Sudden aggression              |

## Management Options



If you have questions, please ask a CVO team member for more information.

# Vaccines and Vaccine Reactions



**Vaccines are a valuable part of your pet's preventive veterinary care. Vaccination protects your pet from infectious diseases through stimulating the immune system.**

Vaccinations recommended by the American Animal Hospital Association

Rabies Virus

Canine Distemper  
Virus

Canine Adenovirus

Canine Parvovirus

Canine  
Parainfluenza Virus

Feline Herpes  
Virus

Feline Calicivirus

Feline  
Panleukopenia

Feline Leukemia  
Virus

**While vaccines are important to your pet's health, they can be associated with adverse effects.**

Vaccines are an important part of keeping your pet healthy. After vaccinating your pet, we expect to see some mild changes that show the shot is doing its job of stimulating the immune system. These common reactions may only last a few days.

Keeping your pet up to date on vaccines protects them from serious illness, and outweighs the rare risk of your pet having a concerning reaction. If these more serious reactions are seen, you should call your veterinarian as soon as possible.

## Common Reactions

- Decreased activity
- Decreased appetite
- Mild discomfort
- Mild cough
- Mild fever
- Sneezing
- Swelling at injection site lasting less than 3 weeks

## Concerning Reactions

- Collapse
- Difficulty breathing
- Itchy skin with hives
- Swelling of the muzzle, neck, face, or eyes
- Persistent cough
- Persistent diarrhea
- Persistent vomiting
- Persistent pain or swelling

**If you have questions, please ask a CVO team member for more information.**

# GI UPSET IN DOGS AND CATS

A healthy gastrointestinal (GI) tract is central to your pet's health. The GI tract has many functions which must be properly performed to ensure your pet's proper nutrition.

## WHAT IS GI UPSET?

GI upset is a change in your pet's natural processing of food. Your pet's

GI tract has many pieces, and a change anywhere in the system can impact your pet's health.

## COMMON CAUSES

- Inconsistent diet or a new change in diet
- Ingestion of foreign objects
- Intestinal parasites
- Food allergies or sensitivities
- Inflammatory bowel disease
- Stress

## OTHER CAUSES

- Stomach ulcers or bloating
- Infection from bacteria or a virus
- Ingestion of a toxin or poison
- Reaction to a medication
- Pancreatitis

## SIGNS

- Vomiting
- Diarrhea
- Constipation
- Loss of appetite
- Stomach pain
- Dehydration
- Rectal bleeding
- Straining to defecate
- Excess drooling
- Stomach bloat
- Shock

## WHEN TO CALL A VETERINARIAN?

When deciding to contact your veterinarian, consider the severity and frequency of your pet's signs, their behavior, and any recent changes in their diet or the household. If your pet has vomited more than once, or have more than one sign of GI upset, it is a good idea to call your veterinarian. You should always call your veterinarian if you think your pet ate a foreign object and is vomiting; has stomach bloat and is retching; or if you are concerned.

**IF YOU HAVE QUESTIONS, PLEASE ASK A CVO TEAM MEMBER FOR MORE INFORMATION.**

Sources: Hudson, J. (2020). Gastrointestinal Disease. Feline Diagnostic Imaging.

Lenox, C. (2021). Nutritional Management for Dogs and Cats With Gastrointestinal Diseases. Veterinary Clinics of North America: Small Animal Practice.

Pilla, R. (2020). The Role of the Canine Gut Microbiome and Metabolome in Health and Gastrointestinal Disease. Frontiers in Veterinary Science.



# Diabetes in Dogs and Cats

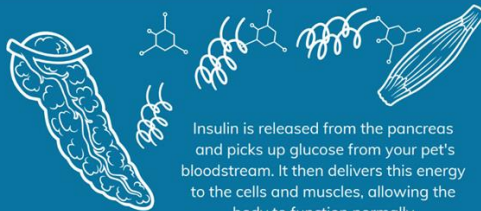
Diabetes is a chronic condition present in dogs and cats, just as it occurs in humans.



Your pet needs glucose, a form of sugar, to provide energy for their body.



In health, glucose is delivered to the body's cells through the hormone insulin.



Insulin is released from the pancreas and picks up glucose from your pet's bloodstream. It then delivers this energy to the cells and muscles, allowing the body to function normally.

In a pet with diabetes, the function of insulin is disrupted, and the animal cannot use glucose normally. This means that the body will not have enough energy to carry out daily functions in health.

## Signs that your pet may have Diabetes

- Drinking lots of water
- Increased urination
- Changes in appetite
- Weight loss
- Changes in attitude
- Changes in hair coat
- Vomiting
- Cataracts
- Recurring infections

## Risk factors for dogs and cats



- Age 6 or older
- Castrated males
- Physical inactivity
- Obesity
- Pancreatitis
- Acromegaly

- Age 5 or older
- Intact females
- Cushing's Disease

- Pancreatitis
- Long-term use of corticosteroids



## Management Options

Diabetes is a chronic condition and will require life-long management to support your pet's health.

Management options look different for every pet. Each plan is designed to fit the needs of the pet and the owner.

Management plans can include:

- Insulin injections
- Dietary changes
- Regular examinations
- Regular blood tests
- Regular urine tests

While there is no cure for Diabetes, dogs and cats can live relatively normal lives with an adequate management plan. If you see these signs in your pet, it is important to talk to your veterinarian and get a diagnosis.

**If you have questions, please ask a CVO team member for more information.**

Sources: AVMA (2021), Diabetic Pets.  
Kleinert, M. (2018). Animal Models of Obesity and Diabetes Mellitus. Nature Reviews Endocrinology.  
Rand, J. (2020). Diabetes Mellitus in Dogs and Cats. Small Animal Internal Medicine.

# Community Connections Learning Objective

- Construct relationships between like-minded community organizations

# Community Connections

- Overarching project of fostering community connections with like-minded organizations



Student-run free clinic at the  
University of Kansas Medical Center



Organization dedicated to providing  
medical care to individuals facing  
housing insecurity in KC

# MPH Foundational Competencies Achieved Part One

Competency Number and Description	Associated Product(s)
7: Assess population needs, assets, and capacities that affect communities' health	<b><u>Product 2:</u></b> Recidivism-Reduction Presentation for CHIP Criminal History Subcommittee <b><u>Product 3:</u></b> Justice-Involved Individuals Community Resources Survey <b>Product 4:</b> Infrastructure Action Team Complete Streets Resource Catalog <b>Product 7:</b> CVO Utilization and Accessibility Survey
11: Select methods to evaluate public health programs	<b><u>Product 5:</u></b> Infrastructure Action Team Complete Streets Performance Measures Flow Chart
13: Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes	<b>Product 3:</b> Justice-Involved Individuals Community Resources Survey <b><u>Product 6:</u></b> Infrastructure Action Team Complete Streets Model HI-C <b>Product 7:</b> CVO Utilization and Accessibility Survey

# MPH Foundational Competencies Achieved Part Two

Competency Number and Description	Associated Product(s)
18: Select communication strategies for different audiences and sectors	<b>Product 1:</b> Infographic for Youth Resist Coalition Sponsor Toolkit <b>Product 7:</b> CVO Utilization and Accessibility Survey <b>Products 8, 9, 10, 11:</b> Pet Owner Educational Handouts
19: Communicate audience-appropriate public health content, both in writing and through oral presentation	<b>Product 1:</b> Infographic for Youth Resist Coalition Sponsor Toolkit <b>Product 2:</b> Recidivism Reduction Presentation for CHIP Criminal History Subcommittee <b>Product 4:</b> Infrastructure Action Team Complete Streets Resource Catalog <b>Product 5:</b> Infrastructure Action Team Complete Streets Performance Measures Flow Chart <b>Products 8, 9, 10, 11:</b> Pet Owner Educational Handouts
21: Perform effectively on interprofessional teams	<b>Product 1:</b> Infographic for Youth Resist Coalition Sponsor Toolkit <b>Product 3:</b> Justice-Involved Individuals Community Resources Survey <b>Product 7:</b> CVO Utilization and Accessibility Survey

# Infectious Disease and Zoonoses Competencies

<i>IDZ Emphasis Area Competency</i>		<i>Description of Competency</i>
1	<i>Pathogens/pathogenic mechanisms</i>	Evaluate modes of disease causation of infectious agents.
2	<i>Host response to pathogens/immunology</i>	Investigate the host immune response to infection.
3	<i>Environmental/ecological influences</i>	Examine the influence of environmental and ecological forces on infectious diseases.
4	<i>Disease surveillance</i>	Analyze disease risk factors and select appropriate surveillance.
5	<i>Disease vectors</i>	Investigate the role of vectors, toxic plants and other toxins in infectious diseases.

Details for all listed emphasis area competencies can be found in Chapter 6 of ILE Report

# Acknowledgements



- Committee
  - Dr. Kate KuKanich
  - Dr. Brad Crauer
  - Dr. Justin Kastner
- Preceptor
  - Ms. Bianca Garcia
- MPH Office
  - Dr. Ellyn Mulcahy
  - Ms. Barta Stevenson
- CVO Team
  - Dr. Lara Plass
  - Ron Orchard
- Friends and Family

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