

Master of Public Health
Integrative Learning Experience Report

***Evaluation of human and animal disease reporting to assess
knowledge, compliance, attitudes, and barriers
&
Analysis of access to essential public health services for
Spanish-speaking residents of Riley County***

by

Amanda S. Preczewski

MPH Candidate

submitted in partial fulfillment of the requirements for the degree

MASTER OF PUBLIC HEALTH

Graduate Committee:

Kate KuKanich, DVM, PhD, DACVIM (SAIM)
Ellyn Mulcahy, PhD, MPH
A. Paige Adams, DVM, PhD

Public Health Agency Site:

Riley County Health Department
Manhattan, Kansas
June-December 2020

Site Preceptor:

Edward Kalas, MPH, RS

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2021

Copyright

AMANDA S. PRECZEWSKI

2021

Disease Reporting Project Abstract

Whereas effective disease surveillance systems can protect the health of a community, ineffective systems—characterized by underreporting or delays in reporting—can make a community susceptible to dangerous outbreaks by masking disease spread throughout the population. The principles of disease reporting are consistent throughout the nation. Local and state health departments receive reports when healthcare providers diagnose or suspect certain diseases; the health departments then may conduct investigations or take other appropriate measures to mitigate disease spread. Though the principles are similar between states, each state and local health department may have slightly different disease reporting regulations, methods, and timelines and may designate different diseases as reportable. The Riley County Health department in the state of Kansas was receiving a very low number of disease reports in the spring of 2020 and suspected that local healthcare providers may be underreporting diseases. This project assessed disease reporting among human healthcare providers and veterinarians through written surveys. The surveys evaluated the knowledge of Kansas reporting regulations, measured attitudes toward reporting, identified barriers in the reporting process, and assessed self-reported compliance with existing regulation. Survey results suggested that a knowledge gap exists among human healthcare providers regarding disease reporting regulations. Additionally, results indicated a generally positive attitude toward reporting and a desire for more streamlined reporting procedures. Overall, this project's small sample size and response rate limit its external validity. However, there are many ways to improve future research into Riley County disease reporting, including changing the target population to account for different practices' reporting systems, changing the survey methodology from written surveys to in-person interviews, and using records from medical facilities and the health department to assess actual reporting compliance.

Hispanic Outreach Project Abstract

A person's health is influenced by the accessibility of quality healthcare services and public health education in the community. When COVID-19 began to spread through Kansas in spring 2020, most of the messaging about COVID-19 and public health measures aimed at stopping disease spread was presented in English. The population of limited-English speakers in Kansas needed the same lifesaving messaging in their primary languages but often were not receiving it to the same degree that English speakers were. The Riley County Health Department wanted to improve outreach to the Spanish-speaking community members in order to improve the community's overall access to essential public health services. This project surveyed Spanish-speaking/limited-English speaking community members throughout Riley County to identify their public health-related needs, barriers to accessing healthcare, attitudes toward Riley County Health Department, and awareness of Riley County Health Department services.

Subject Keywords: Kansas, disease surveillance, health department, language, survey

Table of Contents

Abstracts.....	iii
List of Figures	2
List of Tables	2
<u>Part 1: Disease Reporting Project</u>	
Chapter 1 - Literature Review and Project Background.....	4
Chapter 2 - Learning Objectives and Project Description	8
Chapter 3 - Results	12
Chapter 4 - Discussion.....	17
<u>Part 2: Hispanic Outreach Project</u>	
Chapter 5 - Project Background	23
Chapter 6 - Learning Objectives and Activities Performed	24
<u>Part 3: Attainment of MPH Competencies</u>	
Chapter 7 - Competencies	28
Student Attainment of MPH Foundational Competencies	28
Student Attainment of MPH Emphasis Area Competencies.....	34
Bibliography	40
Appendices	
Appendix A – Disease Reporting Surveys	
Appendix B – Written Report of Disease Reporting Project Findings	
Appendix C – Hispanic Outreach Surveys	
Appendix D – Flint Hills Wellness Coalition Hispanic Outreach Presentation	
Appendix E – Hispanic Outreach Project Presentation (Ramirez & Scavone)	
Appendix F – Essential Veterinary Outreach Risk Assessment	

List of Figures

Figure 6.1 Planning and Execution Timeline	28
---	-----------

List of Tables

Table 7.1 Summary of MPH Foundational Competencies.....	28
Table 7.2 Summary of MPH Emphasis Area Competencies	34

Part One: Disease Reporting Project

Chapter 1 - Literature Review and Project Background

Kansas Disease Reporting Procedures

Disease reporting systems depend on epidemiological principles of surveillance. In Kansas, surveillance is primarily passive—health department personnel receive disease reports from designated medical professionals who shoulder the burden of identifying and reporting conditions. In contrast, an active surveillance system would rely on health department personnel to actively solicit reports from the medical professionals (Van Beneden, Arvay, Thamthitiwat, & Lynfield, 2013). While combining of the two types of surveillance may seem like a simple way to maximize a community's health, each type has its own strengths and weaknesses and requires different resources and training. The ultimate goals of disease surveillance include preventing disease spread and decreasing disease-related death and disability (Janati, Hosseiny, Gouya, Moradi, & Ghaderi, 2015).

In Kansas, the Secretary of State has published the state's disease reporting requirements as administrative regulations and statutes ("KAR 28-1-2," 2018). These legal documents direct certain licensed healthcare professionals, designated as "mandated reporters," to notify local or state health departments whenever they suspect or diagnose a specified disease ("KAR 28-1-2," 2018). The Kansas Department of Health and Environment (KDHE) maintains that comprehensive list of notifiable diseases and conditions on their website. In legal documents and on official websites, state officials outline notifiable diseases and conditions and, in general terms, who bears the legal responsibility to report. The list of diseases and conditions is lengthy—more than 60 diseases and conditions as of July 2020 (Environment, 2018)—and the responsibilities of each type of reporter (i.e., physician vs. diagnostic laboratory) sometimes overlap in confusing ways ("KAR 28-1-2," 2018). The regulations do not specify ways in which a medical practice manages their reporting. For example, their physicians may not be responsible for submitting reports and may depend completely on the nursing staff. Moreover, reporting timelines and methods vary by health department. All of these factors contribute to potential breakdowns in reporting.

Barriers to Effective Disease Reporting

When an infectious disease outbreak occurs, epidemiologists investigate in order to identify how systems may have failed. While the public may be likely to blame an individual physician or laboratory for missing a diagnosis or failing to report the disease, one must realize

that the physician or laboratory is just one player in the overall disease surveillance system. A productive response to minimize similar events in the future is to identify barriers in the disease reporting system and ways to overcome those barriers.

Throughout the United States, underreporting and delays in reporting are widely recognized problems; however, few studies specifically examine Kansas disease reporting. In a 2013 Kansas State University Master of Public Health report, Asha Abu-Ali analyzed human disease reporting in Johnson County, Kansas (Abu-Ali, 2013). Abu-Ali reported that although healthcare providers stated that they were reporting diseases as required, many were not familiar with the list of reportable diseases. Similarly, many desired a more streamlined reporting process and were interested in a web-based option. Broadening the scope from Kansas, a 2017 cross-sectional study of Vanderbilt Medical Center physicians by Fill et al. (2017) identified barriers similar to Johnson County, KS in Tennessee. Numerous literature reviews and epidemiology texts have also sought to address the seemingly nationwide failures in disease reporting processes. The complex factors involved in investigating potential failures in reporting—such as scouring medical records, communicating with multiple levels of health departments, and tracking multiple formats of diseases reports—make it difficult to quantify the problem accurately. This report identifies some of the barriers to reporting in Riley County, Kansas and proposes recommendations for improving disease reporting procedures and research.

In general, barriers to effective disease reporting fit into three broad categories: reporter-level problems, recipient-level problems, and procedural problems (Janati et al., 2015). Problems at any of these levels can negatively affect a community's health. Further analysis of these categories can help a health department identify the most effective method of intervention.

Reporter-level barriers exist in health clinics, hospitals, medical centers, and diagnostic laboratories. One significant reporter-level barrier is a provider's general lack of awareness of notifiable diseases. The Vanderbilt Medical Center study cited a "lack of knowledge about which diseases are reportable" as the most significant barrier among survey participants (Fill et al., 2017). In addition to lack of awareness about the requirements, many reporters claim unfamiliarity with reporting procedures and timelines (Janati et al., 2015). Reporting methods vary by county; some require reporting by fax, telephone, or mail. Other counties have adopted secure online reporting methods (Janati et al., 2015). Personnel shortages within a healthcare facility are also reporter-level barriers that may result in insufficient or delayed reporting. Finally,

in facilities where staff are not aware of reporting procedures, reports are more likely to be lost or improperly submitted.

Recipient-level barriers occur at the health department level and are defined as lack of action by health department personnel. First, lack of enforcement of reporting regulations is common. Even though underreporting is a widely known problem throughout the United States, violators are rarely, if ever, punished (Gakh, Labus, & Walker, 2018). Similarly, health departments often do not provide regular feedback to healthcare providers. This lack of two-way communication decreases the incentive to report in the first place and prevents providers from seeing the positive effects of their actions on public health. Finally, although many health department personnel recognize that reporters lack knowledge of notifiable diseases and reporting procedures, education for these reporters may be lacking in certain communities.

Procedural barriers describe challenges with the reporting process itself. Many healthcare providers complain that the reporting process in their counties is too complicated. Abu-Ali cited numerous complaints about the complexity of the Johnson County reporting process (Abu-Ali, 2013). Reporting may also be too time consuming for a clinician who must decide how to prioritize patient care and administrative requirements. Lastly, procedures that use mail, fax, or telephone may increase the likelihood of a report getting lost somewhere in the process.

Failures in the reporting system threaten the health of a community. A community that reports diseases only 25% of the time may look healthy on paper; however, the lack of reporting the other 75% of diseases cripples the local health department's ability to target education, resources, and therapies towards those specific diseases. A lack of reporting also does not stop affected patients from sharing information with the media. The media may find out about a public health emergency before the health departments when reporting is weak (Southwell, Reynolds, & Fowlie, 2013). To prevent unchecked disease spread and maintain positive public relations, all community members should support timely and accurate disease reporting.

Applied Practical Experience Site (Riley County Health Department)

From June through December 2020, I conducted the majority of my Applied Practice Experience (APE) as an intern for the Riley County Health Department (RCHD). Located in Manhattan, Kansas, this local health department serves Manhattan and the surrounding cities of Ogden, Leonardville, Randolph, and Riley by providing essential public health services to community members. As stated on the official Riley County Website, the health department's mission is "to promote and protect the health and safety of our community through evidence-

based practices, prevention, and education” (Riley County, 2021). In addition to offering health-focused services and education to the community, a primary function of the health department is to protect the health of the public by controlling the spread of communicable diseases. To accomplish this function, RCHD works closely with local healthcare providers to identify, respond to, and investigate disease outbreaks. Per Kansas regulations, healthcare providers and other designated “mandated reporters” are responsible for notifying either RCHD or Kansas Department of Health and Environment (KDHE) upon diagnosing or suspecting a reportable disease. These mandated reporters can submit their reports via phone, mail, or fax. When RCHD receives reports, they forward them to KDHE, located in Topeka, Kansas.

Mr. Edward Kalas, MPH, RS served as my preceptor from June through December and assigned me to two projects that supported the health department’s goals. My primary responsibility as a health department intern was to conduct research into the status of disease reporting in Riley, identify strengths and weaknesses, and formulate evidence-based recommendations to improve the county’s reporting process. The health department had been receiving fewer reports of disease from local healthcare providers than expected; therefore, staff suspected that either underreporting or a breakdown in the reporting system was occurring. This perception of underreporting came from general comparisons to disease reporting in similar Kansas counties. For the initial phases of this project, I collaborated with a fellow DVM/MPH student—Anna Kucera—to develop surveys focused on animal and human disease reporting behaviors. In August, Anna transitioned from this project. I completed the remaining phases, which included identification of target population, distribution of surveys, collection and analysis of response data, and compilation of a written report. My report to the Riley County Health Department contains much overlap with this current Integrative Learning Experience Report (Preczewski, 2021).

I also spent the first two months working on a team focused on increasing RCHD’s outreach to Spanish-speaking community members; however, I focused the majority of my Applied Practice Experience on this disease reporting project. I have summarized my work on the Hispanic outreach team in Part Two of this report.

Chapter 2 - Learning Objectives and Project Description

Learning Objectives (Disease Reporting)

Learning objectives for the disease reporting portion of my Applied Practice Experience included the following:

- Compare mandatory disease reporting between human and veterinary healthcare providers in Kansas.
- Create surveys that yield measurable, relevant, useful data about disease reporting attitudes and behaviors.
- Plan and conduct surveys of populations within Riley County.
- Generate evidence-based recommendations based on data gained through research and surveys.

Project Description and Responsibilities

Prior to this project and before the COVID-19 pandemic began, the Riley County Health Department had been receiving fewer reports of reportable diseases than expected (compared to other Kansas counties) considering the size and demographics of Riley County. This perceived underreporting prompted my preceptor, Mr. Edward Kalas, to assign us this project. Initially, he assigned us to identify healthcare providers' attitudes about disease reporting and compliance with Kansas regulations. Since neither Anna nor I had access to medical facilities' records and were therefore not able to measure true compliance, we opted to conduct survey-based research using a target population of Riley County healthcare providers.

Since I was also interested in comparing disease reporting behaviors of human healthcare providers to those of veterinarians and gaining a broader, One Health perspective, I proposed to Mr. Kalas that we also survey Kansas veterinarians. By comparing the responses of veterinarians to those of human healthcare providers, I hoped that our team would identify similarities and differences between the professions that could help us develop recommendations for RCHD. Mr. Kalas granted us permission to expand the project's scope and conduct an additional survey of Kansas veterinarians that asked generally the same questions as the human healthcare provider survey.

I performed the following activities in support of this project:

- Designed and managed the project timeline (in collaboration with Anna Kucera)
- Conducted background research about disease reporting regulations and procedures in Kansas

- Created written surveys for Riley County human healthcare providers and veterinarians
- Applied for and was granted IRB approval from the Kansas State University Research Compliance Office since the project involved surveying human participants
- Distributed surveys via Qualtrics
- Analyzed survey results and generated a written report of evidence-based recommendations for RCHD

After working with our preceptor to define the problem statement for this project, Anna and I developed a timeline for survey creation, survey distribution, collection of data, and analysis. We thought that the timeline would allow us to provide the health department with an accurate snapshot of disease reporting in Riley County and recommendations by mid-August. However, we ended up modifying the timeline significantly. Refer to Appendix 1 for the Disease Reporting planning slides that I created to help us analyze the problem and develop our methodology and timeline.

Once we had defined the problem statement and key tasks, Anna and I conducted background research about disease reporting regulations and procedures and looked for results from any studies that were similar to ours, that would help us to write effective survey questions. Refer to Appendix 1 for the surveys that we created for human healthcare providers and veterinarians. After creating the surveys, I transferred the questions to Qualtrics, for ease of survey distribution and data analysis. Each survey focused on either human or animal disease, but both contained questions within the following categories:

- Demographics (medical/veterinary school graduation year, specialty, type of practice)
- Awareness of Kansas disease reporting requirements
- Attitudes/motivation toward disease reporting
- Disease reporting compliance (self-assessed)
- Barriers to reporting (self-assessed)
- Preferred reporting methods

After choosing our project methodology, I suspected that we might actually need IRB approval/exemption and sought guidance from my major professor, Dr. Kate KuKanich. Dr.

KuKanich helped me complete and submit the required forms, and the project was ultimately granted exemption under criteria established in the Federal Policy for the Protection of Human Subjects, 45 CFR §104(d), category 2, subsection ii. While we were awaiting IRB approval, my fellow intern Anna concluded her work with the health department. With continued guidance from Mr. Kalas and Dr. KuKanich, I worked as the only intern assigned for the remainder of the project.

While awaiting IRB approval, I worked with Mr. Kalas to obtain contact information for our target population (Riley County licensed healthcare providers) from the Kansas Board of Healing Arts. The Board of Healing Arts provided a directory containing contact information for physicians (MD/DO) and physician assistants (PA) but did not contain nurses (RN) or other administrative personnel. Nurses or administrative personnel can be designated as disease reporters for their practices, so using this directory limited our target population and may have influenced survey results. I filtered the directory to exclude medical specialty providers who were not likely to encounter any of the Kansas reportable diseases (orthopedic surgeons, psychiatrists, etc.). We chose to survey only Riley County healthcare providers, rather than expand the survey to all Kansas providers. By limiting our scope to Riley County, we hoped to obtain responses that could be used to develop focused recommendations for RCHD. Expanding the survey to all Kansas providers did not seem feasible for this project due to the small project team and limited timeframe. We hoped, however, that our project conclusions might inspire future researchers to examine that broader population.

With the help of Dr. KuKanich, I requested assistance from the Kansas Veterinary Medical Association (KVMA), and they distributed the veterinarian survey through their member listserv, which contains most (but not all) licensed veterinarians in Kansas. Additionally, Dr. KuKanich distributed the survey to faculty at the Kansas State University Veterinary Health Center, since many faculty veterinarians are not KVMA members. We chose not to limit our veterinary survey population to just Riley County, because we feared that such results could be largely influenced by vets at Kansas State Veterinary Health Center. Additionally, veterinarians in Kansas report directly to Kansas Department of Agriculture and not to a local county agency.

I distributed the surveys to the target populations via Qualtrics in October 2020, sent multiple reminders during the survey window, and closed the survey in November 2020 after I stopped receiving responses. I began analysis of survey data in November 2020 and submitted the written report of findings and recommendations to Mr. Kalas in January 2021.

Chapter 3 - Results

The data received from the human and animal disease reporting surveys indicated positive attitudes toward reporting. However, the human disease reporting survey identified knowledge gaps regarding which diseases are reportable and reporting procedures. Overall, external validity of the human disease reporting survey results is limited due to a small sample size.

One hundred forty-five licensed healthcare providers from Riley County were invited to participate in the human disease reporting survey; however, only 28 respondents completed the survey. This 19.1% response rate (28/145) and small sample size suggests that further research is needed in order to accurately represent the target population of disease reporters in Riley County. It was estimated that the survey was sent to 1050 veterinarians in Kansas via the KVMA listserv and was completed by 79 veterinarians, for a response rate of 8%. It was difficult to get a large response rate to either survey, possibly because we used an electronic survey platform and a rather passive method of distributing survey invitations. Perhaps many human providers and veterinarians overlooked the survey invitation in their email inbox because it was sent via a distribution list. Perhaps we would have received a larger number of responses if we have addressed emails to each individual provider and veterinarian.

All survey results were collected anonymously via the Qualtrics platform, and respondents were categorized by demographics. The remainder of this chapter is an excerpt from the results section of the report that I wrote and submitted to my preceptor at RCHD in January 2021 (refer to Appendix 2 for the complete report).

Human Disease Survey Demographics

Of the respondents, 27 were licensed medical providers (M.D., D.O., or P.A.) and one was a Registered Nurse (R.N.). Differences in experience among survey participants ranged 32 years. The earliest medical school graduation year was 1984, the most recent was 2016, and the median was 2005.

Medical specialties ranged from family practice (21%), pediatric medicine (14%), internal medicine (11%), emergency medicine (11%), to other (43%). Specialties listed as “other” included surgery, urology, pathology, dermatology, cardiology, occupational health, pulmonology, nephrology, urgent care, and oncology. This wide range of “other” specialties further supports the need for additional research, as many of these specialty providers are not

as likely to see patients with reportable diseases as are primary care physicians and may have influenced survey results by increasing the amount of systematic error due to selection bias..

Private and group practices were the most common type among respondents (79%), with others classifying hospital-based practices (11%), or student health clinics (4%).

Demographics of participants – Animal Health Survey

Seventy-nine respondents met inclusion criteria for the animal disease reporting survey—licensed veterinarian in the State of Kansas. Veterinary school graduation years ranged from 1984 to 2019, with a median graduation year of 1991.

Surveyed veterinarians reported a variety of animal species diagnosed/treated in their current jobs; 77% worked with small animals, 39% worked with large animals/food animals, and 34% worked with equine. Smaller percentages worked with exotic pets (18%), birds (15%), and wildlife/zoo species (4%). Practice types of those surveyed included private practice (68%), academia (17%), government/military (5%), and “other” (10%).

Results- Presented by Project Goal

Goal 1: Estimate level of compliance of Riley County healthcare providers/nurses with Kansas disease reporting regulations (human disease reporting)

Since it was beyond the scope of this project to directly examine patient medical records and compare them to reporting data from medical facilities, survey questions Q12 and Q7 served to estimate the level of reporting compliance.

Q12: How frequently do you report when you diagnose a reportable disease?

Respondents stated that they reported an average of 79.5% of the time that they diagnosed reportable diseases and 51% of the time that they suspected reportable disease (but may have been pending confirmatory lab work or other diagnostics).

Q7: According to Kansas statutes and regulations K.S.A. 65-118, 65-128, 65-6001 - 65-6007, K.A.R. 28-1-2, 28-1-4, and 28-1-18), please indicate whether the following diseases are reportable or not and select the appropriate reporting timeline. Do not use resources to complete this portion of the survey.

Based on respondents’ performance on an eleven-question, closed-resource quiz included in the survey, a knowledge gap exists about Kansas disease reporting regulations. The quiz presented a list of eleven diseases/conditions and asked respondents to categorize each

as 1) reportable within 4 hours, 2) reportable within 24 hours, or 3) not reportable. Respondents could also select “I don’t know” as an option for each disease/condition.

Of the diseases/conditions listed, anthrax, tetanus, and SARS-CoV are reportable within 4 hours in Kansas. Only 64% correctly categorized anthrax, and less than 33% correctly categorized tetanus or SARS-CoV. Diseases reportable within 24 hours were correctly categorized by the following percentages of respondents: gonorrhea (68%), elevated blood lead levels in a child (54%), influenza death in a child less than or equal to 18 years of age (39%), varicella (36%), carbon monoxide poisoning (30%), leptospirosis (29%), and non-elevated (but detectable) blood lead levels in a child (11%). Finally, only half of respondents correctly identified *Escherichia coli* as non-reportable.

The high percentage of incorrect responses suggests that participants lacked of knowledge regarding Kansas reporting regulations. Limitations of this project—specifically, sample size—make it difficult to infer a knowledge gap among the target population as a whole. Still, there is much room for improvement in disease reporting training/education. Additionally, incorrect responses to this quiz suggest that surveyed healthcare providers were less likely to have previously reported when they suspected/diagnosed one of the reportable diseases on the quiz.

Goal 2: Assess Riley County healthcare providers/nurses’ knowledge of notifiable disease reporting requirements in Kansas

To assess knowledge of reporting requirements, questions Q7, Q8, Q9, and Q16 were analyzed:

Q7: According to Kansas statutes and regulations K.S.A. 65-118, 65-128, 65-6001 – 5-6007, K.A.R. 28-1-2, 28-1-4, and 28-1-18), please indicate whether the following diseases are reportable or not and select the appropriate reporting timeline. Do not use resources to complete this portion of the survey.

Refer to the discussion of this question above.

Q8: To the best of your knowledge, is disease reporting mandated by law or is it just good medical practice?

85% (24/28) of respondents correctly identified that disease reporting is legally mandated.

Q9: Are you familiar with the list of notifiable diseases in Kansas?

Only 25% of respondents rated themselves as “familiar” with the list of Kansas notifiable diseases. Conversely, approximately 20% admitted to not being familiar, while the majority (53%) claimed to be “familiar with some, but not all” diseases.

Q16: What are common barriers or challenges that prevent you from reporting diseases?

The most commonly cited barrier to reporting was a self-reported lack of knowledge of Kansas reportable/notifiable diseases (39%). The next most common reasons were that “the process for reporting is inefficient or time consuming” (29%) or that they were unsure where to send reports (29%). Respondents also cited “lack of time” to report (25%). Responses to this question supported goal 2 and goal 3, because the most commonly cited barrier to reporting was a lack of knowledge, supporting the claim that a knowledge gap exists among disease reporters.

Goal 3: Identify potential barriers to accurate, timely reporting of human diseases and compare those barriers to those reported by Kansas veterinarians regarding animal diseases

In order to identify barriers to accurate and timely reporting, responses to Q16, B14, Q15, and B13 were analyzed.

Q16/B14: What are common barriers or challenges that prevent you from reporting diseases?

As described above, the most common barrier to reporting among human providers was a self-reported lack of knowledge of Kansas reportable/notifiable diseases. The next most common reason is that the process for reporting is inefficient or time consuming. Other responses included lack of time or unsure where to send report.

Among Kansas veterinarians, the most commonly reported barrier was lack of knowledge of Kansas reportable diseases (38%, 30/79), followed by uncertainty about who/what agency to send report to (29%, 23/79), “other” (20%, 16/79), “lack of time” or “process for reporting is inefficient/time consuming” (14%, 11/79). While human healthcare providers did not cite “fear of negative public opinion” as a barrier to reporting, 7% of veterinarians did.

Q15/B13: Why do you feel that it is important to report notifiable disease when suspected/diagnosed?

Respondents could choose multiple options for this question. None of the human healthcare respondents believed that “it is not important to report”; however, motivations for reporting varied. Only 20% believed that reporting is important because “it is legally mandated,” while 70% felt that disease reporting was important “to prevent further disease spread,” and 47% felt that it was important to report because of human health implications.

Among veterinary respondents, the most common motivations to report were “I have a legal obligation to report” and because “reporting can protect human health in the event of a zoonotic disease” (85%, 67/79). The next most popular motivation was that “reporting is important to prevent disease outbreaks/continued disease spread (83%, 65/79). A small percentage cited “other” or that “it is not important to report.” One notable free-text response to B11 described how past reporting experiences did not result in expected/desired action by the report recipient.

Goal 4: Identify and compare preferred methods of reporting among Riley County human healthcare providers/nurses and Kansas veterinarians

Q19 and B14 asked participants about preferred reporting methods.

Q19/B14: What would be your preferred method of reporting notifiable diseases?

The most preferred method of reporting among Riley County human healthcare respondents was via online form (64%, 18/28). This option is currently not available through Riley County Health Department or KDHE. The next most preferred reporting method was fax (19%, 5/28), followed by phone (18%, 4/28).

While 49% (36/73) of veterinary respondents stated that they would prefer an online form for reporting, 37% (27/73) would prefer to “phone an individual” and 10% (7/73) would prefer email.

Chapter 4 - Discussion

Sample size and low response rate limited our ability to draw statistical associations from the survey data. Still, responses provided valuable insight regarding compliance, knowledge, attitudes, and barriers related to disease reporting in Riley County. These responses largely aligned with published disease reporting studies by revealing a knowledge gap regarding disease reporting regulations. Additionally, respondents cited inefficiencies in reporting procedures that could prevent accurate, timely reporting. These major findings informed two practical recommendations for the Riley County Health Department—invest in educational resources for mandated reporters that introduce them to KDHE reporting regulations and streamline local reporting procedures by offering a secure, web-based reporting method.

First, survey respondents highlighted a general lack of knowledge/awareness of Kansas disease reporting regulations. Performance on the knowledge section of the survey by human healthcare providers and veterinarians alike demonstrated this knowledge gap, as a large percentage of respondents failed to correctly identify reportable diseases when provided a list of diseases. The majority of human providers also admitted to being either “familiar with some, but not all” (53%) or not familiar at all (21%) with the list of reportable/notifiable diseases in Kansas. Nearly forty percent of both human healthcare providers (39%) and veterinarians (38%) cited a lack of knowledge of reportable diseases as a self-perceived barrier to reporting. The presence of a knowledge gap regarding reporting was the most consistent finding among all survey respondents, and this gap bridged human and veterinary medicine.

Findings of a knowledge gap were not surprising, as similar findings have been consistently cited by studies of human disease reporting throughout the United States. Namely, a 2017 Vanderbilt Medical Center Study from Tennessee recognized a knowledge gap as the most significant barrier to reporting among surveyed physicians (Fill et al, 2017). A 2013 Johnson County Health Department study from Kansas drew similar conclusions among physicians (Abu-Ali, 2013). In this way, Riley County Health Department’s small disease reporting study strengthens the case that investments in additional disease reporting education for healthcare providers are warranted.

Aside from a lack of knowledge about disease reporting, common barriers cited by human healthcare providers included an inefficient/time consuming reporting process (29%) and lack of time (25%.) These barriers may be attributed to the currently available reporting methods. Riley County Health Department provides a 24/7 disease reporting phone number that

one can call with disease reports or with other public health emergencies. KDHE also provides a phone number and actually mandates that certain diseases be reported via phone due to reporting timelines. Reports of certain diseases also must be accompanied by laboratory specimens/results. In addition to telephone numbers, the RCHD and KDHE websites provides links to the same downloadable disease reporting form, which can be mailed or faxed to either RCHD or KDHE. Currently though, there is not an option for reporters to submit disease reports via a secure, web-based form. When given the option of multiple reporting methods, 81% of human providers chose an online form as their preferred method of reporting. Providing a streamlined reporting method, such as a web-based form, may save time and improve the efficiency of the reporting process.

Findings that highlighted inefficiencies in the reporting process were not unique to this study. The 2013 Johnson County study also identified that current reporting methods were time-consuming and complex, likely decreasing overall reporting compliance (Abu-Ali, 2013). Moreover, inefficient reporting procedures have been identified as significant barriers to reporting worldwide. A 2015 systematic review published by Janati et. al (2015) in the *Iran Journal of Public Health* identified “lack of standard for reporting diseases,” “difficult and complex process for reporting diseases,” and “tardiness of non-electronic reporting system” as some of the many barriers reported throughout the world. Overall, evidence from this project and other published research supports that Riley County Health Department could potentially improve reporting compliance by offering a web-based reporting option.

Among surveyed veterinarians, the most significant barrier was a lack of knowledge about reportable diseases (38%), being “unsure who/what agency to send report to” (29%), and other (20%). A smaller percentage of surveyed veterinarians identified “lack of time” or that the “process for reporting is inefficient/time consuming” (13%).

When given a list of reporting options, approximately half (49%) of surveyed veterinarians selected an online form as their preferred reporting option, while 37% of respondents preferred to report via phone. This discrepancy between human providers and veterinarians may reflect the demographic of the survey population, as the median graduation year for surveyed veterinarians was 1991. Additional surveys of younger veterinarians is needed to determine whether this preference for telephone reporting is affected by age. Additional research could also explore whether this preference for phone reporting may be more specific to field service veterinarians that have easier access to their phone than to a web-based platform when diagnosing cases on the farm. If a large animal veterinarian suspects a reportable disease (especially a foreign animal disease) during a farm call, he or she may have

to stay on the farm to initiate biosecurity measures and therefore, may need to speak to someone via phone quickly to make the report and request support.

Practical Recommendations for RCHD

Riley County Health Department could attempt to improve reporting by creating more opportunities to increase healthcare providers' awareness of Kansas disease reporting regulations. By facilitating training, in the form of continuing education, the health department could directly increase the disease reporting knowledge of Riley County providers. Perhaps as an initial effort, RCHD could offer virtual seminars to local practices. If not many people attend though, they could deliver printed material for the practices to display, such as posters listing the reportable diseases and reporting methods. If they opt to deliver printed material instead of conducting virtual training, it would be critical that the health department personnel actually meet and establish a relationship with the practice manager or disease reporters for each practice. This relationship would make it more likely for a practice to contact the health department with questions or feedback. Educational training would also give RCHD a platform to address any other pertinent issues with healthcare providers and could improve professional relationships and trust. Trust fosters teambuilding, and if the health department and healthcare providers could work as a team, effective communication and improved disease reporting would likely follow.

In addition to improving disease-reporting education, RCHD could approach the perceived underreporting problem by streamlining the reporting process. The addition of a secure, web-based reporting form on the Riley County Health Department website would increase reporting efficiency, decrease the amount of time reporters spend faxing/mailing reports or making phone calls, and decrease the chances of any information being lost in the process. In addition, a web-based reporting form could provide reporters with immediate acknowledgement that their report was received. It is worth mentioning that some respondents did prefer telephone-based reporting, so it would be wise to allow multiple methods of reporting but encourage web-based reporting, when feasible.

Study Limitations and Recommendations for Future Studies

Although I identified general trends in the survey responses and obtained interesting qualitative data, this project did not result in a large amount of relevant data that accurately reflects the state of disease reporting in Riley County. Anonymity of survey responses also precluded the health department from contacting individual respondents to discuss their responses in detail. In these ways, the project did not completely meet the original goals.

However, in completing this project, I identified numerous ways in which future researchers could improve project design and methodology to obtain relevant data from a more appropriate target population. Primary limitations of this project included sample size, survey methodology, target population identification methods, and significant timeline delays.

Sample size limited the external validity of the survey results and hindered useful statistical analysis of the human disease survey responses. My team designed and conducted this project from June through December 2020, amid the COVID-19 pandemic. Many potential survey respondents may have been extraordinarily busy during that time and may not have participated in the survey for that reason. Perhaps if future researchers wait until the pandemic and vaccination campaign have slowed significantly, they will receive a larger number of survey responses.

Additionally, survey methodology should be improved for future projects if a goal is to actually assess reporting compliance. A survey-based approach like ours does not directly measure compliance. Since no one on the project team had access to medical records, we opted for this survey approach and accepted that our results would reflect self-reported compliance. However, the accuracy of self-reported compliance depends on the honesty (and memory) of the respondent as well as their awareness of disease reporting regulations. Even if a physician, for example, were honest, well intentioned, and reported every case of tuberculosis because he knew it was reportable, he may have never reported *Campylobacter* infections, because he was unaware that they were on the list of Kansas reportable diseases. In this example, he may have rated his self-reported compliance as 100%, when in fact it was much lower due to the unreported *Campylobacter* infections. If future projects could compare medical facility records to the list of reports received by the health department, compliance could be more accurately determined. Of course, this methodology would be more time-consuming and require additional resources.

In-person interviews could have yielded much more valuable responses than an electronic survey. However, COVID-19 restrictions and time constraint limited our team's ability to conduct in-person interviews. For a future project, I recommend that the project team identifies all healthcare facilities within Riley County, contacts practice managers of those facilities, and determines who is responsible for disease reporting at that practice. Then, the team should request consent and schedule an in-person (or Zoom/telephone) interview with the designated reporters from each practice. This in-person interaction would allow the project team to ask for more details and gain a better impression of the respondent's attitude toward the

disease reporting process. This interaction could also improve the practice's communication with the health department and may help overcome that barrier to reporting.

Identification of the proper target population would also improve future research. Although a physician may be the one to diagnose and treat multiple cases of a reportable disease in a practice, he/she may not be the one responsible for filling out the correct paperwork and reporting the disease to the health department. Therefore, his/her survey responses are less useful than would be responses from that clinic's designated reporters.

Finally, avoidable timeline delays limited my efficiency during this project. Planning for these delays would help future researchers. The Institutional Review Board (IRB) Approval and all associated training should have been completed during the initial planning phase of this project. However, only after developing the project's timeline, conducting background research, and beginning to write survey questions did I suspect that IRB approval might be necessary. The IRB process is quite efficient, and my major professor, Dr. Kate KuKanich was instrumental in mentoring me through the process. Still, it took about a month to receive exemption. We could have more efficiently used this time conducting the survey had we applied sooner, and this delay extended my work on this project through the end of the fall semester.

With the proposed improvements to project design and execution, future researchers may obtain results that better represent the target population and accurately measure reporting compliance in Riley County.

Part Two: Hispanic Outreach Project

Chapter 5 - Project Background

As an intern for the Riley County Health Department, I was fortunate to participate in the initial phases of a project aimed at increasing the health department's outreach to Spanish-speaking community members. Mr. Edward Kalas served as the preceptor for this project, and team members included Melitza Ramirez and Sofía Scavone—fellow Kansas State University Master of Public Health students. Melitza was pursuing her degree with an emphasis area in physical activity, while Sofía's emphasis area was Infectious Diseases and Zoonoses.

The long-term goal of this project was to increase the health department's outreach to Spanish-speaking/limited-English speaking (LES) community members. We sought to accomplish this goal through four major efforts:

- I. Conduct a survey of the LES population within Riley county to determine needs, barriers to access, and awareness of health department-related services as well as other essential services
- II. Identify key Riley County essential services and evaluate their websites, marketing, educational material, etc. for Spanish accessibility
- III. Identify evidence-based practices for effective communication with non-English speaking populations within the United States (through journal articles, publications, contacting other health departments)
- IV. Use survey data and evidence-based practices to develop recommendations for Riley County Health Department to improve communications with LES populations.

Chapter 6 - Learning Objectives and Activities Performed

Learning Objectives

Learning Objectives for this project included the following:

- Evaluate the accessibility of public health services within Riley County to limited English-speaking (LES) personnel.
- Create effective surveys that yield measurable, relevant, useful data.
- Plan and conduct surveys of populations within Riley County.
- Identify services provided by and capabilities of RCHD in order to better inform the population about public health.
- Generate evidence-based recommendations based on data gained through research and surveys.

Activities Performed

In support of the project's goals, our team divided responsibilities among the three of us and met twice each week to assess progress, identify next steps, and reassign tasks as needed.

My major contributions to the project included creation and maintenance of a set of PowerPoint slides tracking our progress, development of our planning and execution timeline, and organization of shared documents on our Google Drive. Refer to figure 6.1 for an example of our project planning timeline.

PLANNING AND EXECUTION TIMELINE

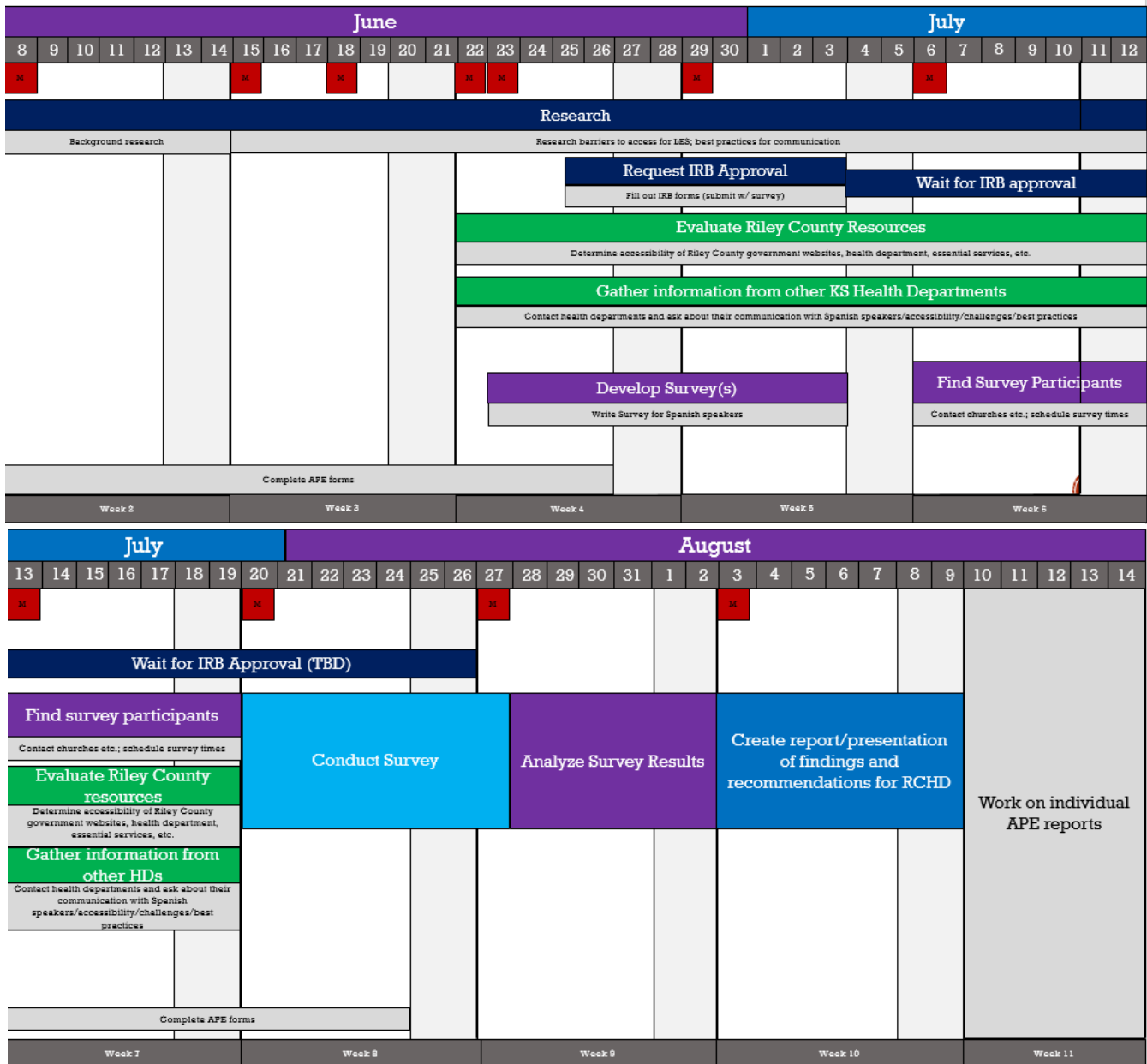


Figure 6.1 Planning and Execution Timeline

Additionally, I collaborated with Melitza and Sofia to create a survey in both Spanish and English. Refer to Appendix 3 for the Hispanic Outreach Surveys (in English and Spanish).

Categories of survey questions included:

- Needs of the LES population
- Barriers to accessing RCHD and other essential services in Riley County
- Attitudes toward RCHD services
- Awareness of/Interest in RCHD services
- Experiences with RCHD

During survey creation, we also submitted the IRB forms and received exemption. My major professor, Dr. Kate KuKanich mentored me through the application process.

While waiting for IRB approval/exemption, our team presented at a monthly Flint Hills Wellness Coalition (FHWC) meeting in order to introduce our project to the coalition and gain assistance with survey distribution. Refer to Appendix 4 for the slides that we presented to the coalition.

Shortly after presenting to the coalition, my preceptor directed me to shift focus away from this project and to dedicate the remainder of my Applied Practice Experience to the disease reporting project since I was the only remaining student working on that project. Melitza and Sofia continued work on this project and successfully conducted the Hispanic Outreach survey, analyzed responses, and produced a report for the health department and infographics for all survey participants that summarized the findings, see Appendix 5 (Ramirez & Scavone).

Part Three: Attainment of MPH Competencies

Chapter 7 - Competencies

Student Attainment of MPH Foundational Competencies

Table 7.1 Summary of MPH Foundational Competencies

Number and Competency		Description
4	Interpret results of data analysis for public health research, policy or practice	By designing and conducting surveys of human healthcare providers and veterinarians, I gathered data for analysis and development of evidence-based recommendation for the Riley County Health Department's disease reporting procedures.
8	Apply awareness of cultural values and practices to the design or implementation of public health policies or programs	When designing the Hispanic Outreach project, my team carefully considered cultural values and practices, writing our survey questions and selecting locations for survey promotion with an awareness and respect toward our participants' values.
19	Communicate audience-appropriate public health content, both in writing and through oral presentation	I wrote and submitted a report of findings to my preceptor as part of the disease reporting project and presented orally to the Flint Hills Wellness Coalition as part of the Hispanic Outreach team. In addition, I served as a temporary COVID-19 contact tracer for KDHS for a few months during summer 2020, where I communicated public health guidance to a diverse population of Kansans with varying degrees of public health knowledge. I also collaborated with DVM/MPH classmate Ron Orchard to present risk mitigation strategies to a local veterinary outreach organization.
21	Perform effectively on interprofessional teams	As an intern for the Riley County Health Department, I worked for Mr. Edward Kalas, the former RCHD Health Educator, who has a very diverse background in public health. Additionally, I had the opportunity to work on a team for the Hispanic Outreach project that was composed of fellow KSU students with different educational backgrounds, areas of emphasis, and career aspirations.
22	Apply systems thinking tools to a public health issue	In order to design the disease reporting project, I used process mapping, incorporated knowledge of system foundations, and explored how the Social Ecological Framework influences disease reporting in Riley County.

Competency 4: Interpret results of data analysis for public health research, policy, or practice

The RCHD disease reporting project challenged me to attain and demonstrate foundational competency 4. By examining disease reporting from the perspective of human healthcare providers and veterinarians, I sought to analyze the data in order to develop evidence-based recommendations for RCHD to improve reporting compliance. In order to design the disease reporting project to gain useful information about human healthcare providers and veterinarians, I conducted background research to understand existing Kansas public health regulations and policies and analyzed relevant disease reporting studies from throughout the United States. This research informed the creation of survey questions aimed at answering questions about awareness, compliance, barriers, and suggestions for improvement of reporting procedures. We tried to determine whether the problems that plague disease reporting in Riley County are similar to those that plague disease reporting throughout the world. Throughout my time as a health department intern though, I discovered weaknesses in our project design and have included those weaknesses in the Part One of this report so that future projects can overcome these limitations.

In the earliest stages of the project design, the problem statement focused on determining whether Riley County Healthcare providers were accurately reporting to the local health department. After conducting background research into policies and reporting regulations, I realized that compliance was only part of a more complex issue and that, in order to obtain useful data, the project should expand to focus on potential gaps in awareness about regulations, attitudes toward reporting, and perceived barriers to reporting.

By creating of a written report for the RCHD, I summarized the background research and survey methodology and presented results and conclusions based on survey responses. The surveys were distributed to Riley County human healthcare workers and Kansas veterinarians, so in the report, I compared responses between professions in order to frame the conclusions and recommendations from a One Health perspective.

Competency 8: Apply awareness of cultural values and practices to the design or implementation of public health policies or programs

In part, the lack of accurate, timely messaging about COVID-19 in Spanish inspired the Hispanic Outreach project. In the early months of the pandemic, it became obvious that certain cultural groups in the United States were not receiving the same level of public health information as were English-speaking residents. Part of this project analyzed the ways in which

Spanish-speaking residents currently received and preferred to receive their health information in order to determine potential gaps in the system.

When designing the Hispanic Outreach project, our team thoroughly analyzed ways in which cultural differences could help or hinder our project. We determined immediately that our survey and advertisements posted around the community should be in Spanish. Fortunately, two team members were native Spanish speakers, and Mr. Kalas and I could speak and understand Spanish as well. We scrutinized the written surveys in order to remove any style or terminology that may be unclear to people from different Spanish-speaking countries or regions throughout the U.S.

Although COVID-19 limited our ability to conduct in-person surveys, as we had originally hoped, we examined cultural differences in order to determine the best way to reach our target population and gain survey participants. We planned to reach out through places of worship, schools, Hispanic-owned businesses, Kansas State University's international student programs, and other community organizations that welcome and provide services to non-English speakers. We also appealed to Spanish-speaking health department clients through the Facebook group "Nuestra Salud," in which the health department translated and published relevant COVID-19 information in Spanish.

In addition to participating in the disease reporting and Hispanic outreach projects as a RCHD intern, I served as a volunteer COVID-19 contact tracer for KDHE during summer 2020, before many public health agencies had hired a staff of paid contact tracers. This job provided excellent training and placed emphasis on the importance of cultural competency, but no amount of training could have prepared me for the first time that I called a COVID-19 contact to inform him of potential exposure to COVID-19 and quickly realized that he did not speak any English. Although I understood what he was saying in Spanish, not being able to communicate important medical information and having to refer to the language line for interpreter assistance was a very humbling experience. If I, a trained contact tracer, could not even communicate to this client in own language, how much public health information was he receiving in his daily workplace environment. This phone call (and other similar calls that followed) have humbled me and made me realize how important it is that public health education is accessible and culturally competent.

Competency 19: Communicate audience-appropriate public health content, both in writing and through oral presentation

The major output of the disease reporting project for my preceptor at the Riley County Health Department was a written report (refer to Appendix 2). I wrote this report for my preceptor, who has a Master of Public health degree, experience working for a local health department, and a background in epidemiology and disease surveillance. Therefore, I tailored the language of the report accordingly and used appropriate, technical terminology that someone with his educational background would understand. While I could have provided the same information in an oral presentation, I opted to create a written report as a more lasting product that could more effectively inform future research efforts.

Designing written surveys for three unique populations (Riley County human healthcare workers, Kansas veterinarians, and Riley County Hispanic community members) also allowed me to improve my ability to communicate audience-appropriate public health content through writing.

As a member of the Hispanic Outreach project team, I helped prepare an oral presentation for the Flint Hills Wellness Coalition. We recognized that our project focus might not have been a familiar topic for some of the audience members to whom we would be presenting. During this presentation, we thoroughly explained the impetus for our project and the significance of this survey data to public health. Throughout the presentation, we created many opportunities for the audience to ask us questions about the project. The presentation was received well by the coalition, and we received buy-in from many coalition members who offered to assist with survey distribution. Had we assumed that our audience was familiar with our topic and not spent as much time as we did explaining why this topic was so important to public health, we might not have received buy-in and offers to help.

In collaboration with DVM/MPH classmate Ron Orchard, I designed a PowerPoint presentation for Community Veterinary Outreach (CVO), a local veterinary organization that was seeking risk mitigation strategies that would allow them to safely resume services amid the COVID-19 pandemic. We chose to create a PowerPoint presentation (Appendix 6) for CVO, and we presented it during a Zoom meeting in order to facilitate an open discussion with the organization. This presentation format allowed us to build trust with CVO while also providing them with published resources that they could reference later when deciding on their own risk mitigation strategies.

Competency 21: Perform effectively on interprofessional teams

The opportunity to work on interprofessional teams as part of my RCHD internship allowed me to attain this competency. As a health department intern, my preceptor had a Master of Public Health degree and years of epidemiological, educational, and health-department experience. He continuously challenged my team with thought-provoking questions during the initial phases of project design, and his guidance diversified my experience working with a local health departments.

In addition, my project team for the Hispanic Outreach project consisted of a group of students with varying educational backgrounds, areas of emphasis, and career aspirations. We approached each problem during our project with a different perspective, and our collaborative solutions were better than anything one of us could have come up with on our own. We depended on each other and learned from our differing cultural backgrounds, values, language skills, and approaches to this project. I was the only non-Native Spanish speaker on the team, so this project was a wonderful and challenging opportunity. I am comfortable with conversational Spanish but this project challenged me to focus on Spanish as a way to communicate public health information to a community. I identified just how much I do not know. This has inspired me to focus more on learning how to communicate in Spanish to veterinary clients.

Working on interprofessional teams reinforced the importance of clear communication, setting common goals, conducting frequent check-ins, and always being open to learning from others.

Competency 22: Apply systems thinking tools to a public health issue

In order to frame the problem for the Riley County Health Department disease reporting project, I applied systems thinking. I used process mapping to design a set of planning slides (Heher & Chen, 2017). During initial planning meetings, our team used charts on the slides to gauge our progress, divide responsibilities, and maintain focus on the problem statement. Since the project had multiple goals and a few key lines of effort, process mapping helped us organize inputs and outputs to ensure that we were not neglecting any important components.

When developing the survey questions and deciding upon a survey platform, we incorporated knowledge of system foundations. We intentionally worded the survey questions to appeal to our target audience's beliefs and values. Even though our preceptor's original goal in assigning this disease reporting project was to determine whether healthcare providers were actually reporting when they should, we realized that we would be much more effective in

connecting with our target audience if we appealed to their professional values of helping patients and contributing to the health of society. Before writing survey questions, we adopted a systems approach by dissecting possible reasons for underreporting or inaccurate reporting. By focusing on knowledge, attitudes, self-reported compliance, and barriers to reporting, we designed our survey so that respondents would never feel like we were accusing them of failing to report. Instead, we asked them to share their beliefs, values, knowledge, and suggestions.

Finally, the disease reporting project explored the Sociological Ecological Framework for each public health issue involved in reporting a disease (McLeroy, Bibeau, Steckler, & Glans, 1988). The disease reporting project identified how individual factors (such as regulatory knowledge and personal beliefs) interacted with interpersonal factors (workplace climate and policies), institutional factors (procedures for reporting), and societal factors (importance of preventing disease outbreaks) to influence overall disease reporting compliance.

Student Attainment of MPH Emphasis Area Competencies

Table 7.2 Summary of MPH Emphasis Area Competencies

MPH Emphasis Area: Infectious Diseases and Zoonoses		
Number and Competency		Description
1	Pathogens/Pathogenic mechanisms	Evaluate modes of disease causation of infectious agents.
2	Host responses to pathogens/immunity	Investigate the host response to infection.
3	Environmental/ecological influences	Examine the influence of environmental and ecological forces on infectious diseases.
4	Disease surveillance	Analyze disease risk factors and select appropriate surveillance.
5	Disease vectors	Investigate the role of vectors, toxic plants and other toxins in infectious disease.

Throughout my veterinary and public health coursework and during my Applied Practice Experience, I have attained the five aforementioned competencies pertaining to the study of Infectious Diseases and Zoonoses.

Competency 1: Pathogens/Pathogenic mechanisms

The first competency involves evaluating modes of disease causation of infectious agents and therefore understanding pathogenic mechanisms. Infectious agents cause the majority of reportable human and animal diseases, and although the disease reporting project did not directly explore the relationships between specific pathogens and diseases that they cause, many courses in my program of study did detail these relationships. First, in DMP812 Veterinary Bacteriology and Mycology, we learned the characteristics of animal disease pathogens and the diseases or clinical syndromes that they can cause in different species. Though the focus of this course was animal diseases, we also always noted whether a disease was zoonotic and discussed appropriate biosecurity measures when handling infected animals. DMP822 Veterinary Virology focused on viral diseases of animals. This course approached diseases from a more clinical perspective than DMP812 and focused more heavily on disease prevention, population medicine, and how to recognize viral diseases in animals. DMP854 Intermediate Epidemiology and MPH802 Environmental Health also explored the pathogen/disease relationship from a slightly different perspective. In DMP854, we examined the ways in which we can measure disease by recognizing the components of the host-pathogen-environment relationships, or “disease triad.” In MPH802, we evaluated how the

environment can affect the prevalence of certain infectious diseases, like how climate change is influencing the spread of many vector-borne diseases into climates where the vector had not previously been able to survive.

Competency 2: Host responses to pathogens/immunity

The second competency involves investigation of the host immune response to infection in order to gain the foundational knowledge of immunology. I attained the foundations of this competency in DMP705 Principles of Veterinary Immunology. During this course, we learned about the components of the immune system, how it functions to protect from disease, and how response to invasion can dysregulate the immune response. We also identified the many ways that pathogens evade the host immune response to cause disease. In addition to attaining this competency through many academic courses, I also got to put it into practice as a contact tracer. Each day, I completed a number of phone calls to people who had been close contacts of COVID-19 cases during which I asked them if they were experiencing any symptoms (by reading through a list) or had any concerns. I also encouraged them to monitor their symptoms and temperature and notify me if they began to experience any symptoms during their 14-day quarantine period. This practical experience forced me to continuously assess the host response to potential COVID-19 infection during a time in which we did not know as much about the virus and its transmission, incubation period, and clinical signs as we do today.

Competency 3: Environmental/ecological influences

The third competency requires examination of environmental and ecological influences on infectious diseases, which I studied, in detail, during many veterinary and public health courses, but most specifically in MPH802 Environmental Health and DMP854 Intermediate Epidemiology. MPH802 introduced and reinforced specific environmental influences on diseases, including concepts such as airborne health hazards, water pollution, vector-borne diseases, and environmental toxins. DMP854 Intermediate Epidemiology built upon the foundations of earlier courses and challenged me to critically analyze journal articles that described epidemiological studies. Through critical analysis, I learned to identify bias and confounding, assess validity, evaluate the use of statistical methods, and analyze study design. I was able to do these things because I understood the effects that ecology and the environment have and the challenges that they pose for epidemiological studies. One of the most significant and memorable concepts that I learned during DMP854 is that association does not mean the

same thing as causation, and that the criteria that one must satisfy to prove causation are challenging, complex, and heavily affected by ecological environmental factors.

Outside of traditional coursework, I also attained this competency by experiencing the COVID-19 pandemic firsthand (as we all have) and making an effort to stay informed but remain critical of scientific development and published research about disease transmission and immunity. As the world's top infectious disease researchers learned more about COVID-19 and the potential ways in which ecology and the environment influenced disease transmission, I adhered to the public health guidelines. These guidelines, which began as social distancing and increased handwashing, eventually progressed to advising the widespread use of facemasks. Although specific public health guidance seemed to change frequently during the early months of the pandemic (such as guidance about whether the public should wear cloth masks or N-95 masks), those changes reflected the scientific community's growing knowledge of how human behavior and different environments were influencing the virus. We initially hoped that warmer summer months would cause the virus to transmit less effectively, but when the outbreak did not end when the weather got warmer, we had to further analyze how our complex societal behaviors were affecting disease transmission. The intertwined effects of the environment and human behavior on pathogens and immunity are complex and continue to challenge the scientific community as infectious diseases emerge and reemerge throughout the world. Though the COVID-19 pandemic has brought enormous suffering to the world over the past year, it has challenged me personally and professionally and has made me a more passionate, skeptical—and overall more competent—public health professional.

Competency 4: Disease Surveillance

The fourth competency requires analysis of disease risk factors and selection of appropriate surveillance. Though I learned these concepts in academic courses, such as DMP854 Intermediate Epidemiology, DMP710 Introduction to One Health, and MPH 802 Environmental Health, I demonstrated this competency during my Applied Practice Experience for the Riley County Health Department and during my experience as a contact tracer for KDHE.

The disease reporting project for the Riley County Health Department essentially analyzed the success of a major component of disease surveillance in Kansas—human disease reporting. Through background research, I learned the regulation and basic structure of the disease reporting system in Kansas and discovered that the Riley County Health Department was largely relying on a passive surveillance system.

Though passive, the system qualifies as surveillance, not monitoring, because disease reports from healthcare providers do prompt action by health department officials. Sometimes, that action may be simply to forward the reports to KDHE if the reported disease does not warrant an immediate response. Other times, the health department may initiate an investigation or recommend public health guidelines to protect the health of community members. Still, the disease reporting system in Kansas is largely passive because it relies on physicians to provide reports. In most cases, the health department does not directly solicit reports. COVID-19 has certainly influenced this reporting system though, and current surveillance efforts have become increasingly active.

When developing questions for the disease reporting project survey, I adopted a systems approach and attempted to identify the many factors that could influence a physician's disease reporting compliance. One important factor that I identified was the physician's motivation to report. In many cases, that motivation came from realizing that by properly reporting a disease and advising the patient of proper biosecurity measures, such as quarantine or isolation in the case of COVID-19, the physician could effectively protect the health of many other community members.

I also attained this competency while serving as a contact tracer for KDHE. As a contact tracer, I was effectively performing active surveillance every time I made a phone call. My major duty as a contact tracer was to call a list of people (designated as contacts) who had potentially been in close contact with a COVID-19 positive individual (designated as a case). I notified those contacts of their potential exposure, advised them of the current public health guidance regarding quarantine, and asked whether they had sufficient resources to quarantine and a thermometer to monitor their temperature. I then followed-up with each contact throughout their quarantine period to determine whether they were experiencing any COVID-19 symptoms. If they did develop symptoms during their quarantine period, I notified KDHE, who coordinated COVID-19 testing for the individual. In concept, contact tracing is simple. In practice, it is quite complicated. One of the most challenging situations that I experienced as a contact tracer was informing a contact that they were to quarantine for 14 more days when I knew that they had already been quarantining for over a month due to a sick family member in their household. Though they complied with the guidance, I could sense the emotional and economic toll that quarantine had on their family. Fortunately, they understood that their risk of developing and transmitting COVID-19 was high during that time and that quarantining was the best measure to reduce their risk of transmitting the disease to other families.

Overall, the COVID-19 pandemic has made the world more aware of the importance of communicating disease risk and conducting proper surveillance. My experience as a contact tracer allowed me to experience this increased awareness firsthand and helped me improve my ability to communicate that risk in various situations.

Competency 5: Disease Vectors

Finally, the fifth competency requires the investigation of the role of vectors, toxic plants, and other toxins in infectious diseases. Nearly every course in my veterinary curriculum addressed this concept in some way, but the courses from my Master of Public Health program of study that addressed them in the greatest detail included DMP812 Bacteriology and Mycology, DMP851 Virology, DMP710 Introduction to One Health, and MPH 802 Environmental Health.

My Applied Practice Experience did not specifically address vector-borne diseases. However, my experiences in the Army prior to veterinary school directly exposed me to the risks of many vector-borne diseases and toxins, and my public health and veterinary education allowed me to thoroughly understand and clearly articulate those risks.

For example, when preparing for deployments to Afghanistan and Liberia, I received vaccinations for many diseases (such as Anthrax, Yellow Fever and Smallpox) and received education about the threats of leishmaniosis, malaria, and food-borne diseases. While deployed, we took many protective public health measures, such as disinfecting and regularly testing our water for toxins. During our deployment to Liberia in 2014, the preventative medicine inspectors actually detected high levels of *E. coli* in our water supply when we first arrived. Due to the risks of becoming sick, we had to avoid the shower facilities and only use bottled water until the water supply was decontaminated.

My experience in the Army also helped me understand the challenges of controlling vector-borne diseases. When deployed to Liberia during the Ebola outbreak in 2014, I was surprised to learn that I actually had a much higher risk of contracting malaria from mosquitoes than I did of contracting Ebola from other humans. Even though public health measures eventually stopped the spread of Ebola, there is still a high prevalence of malaria. As a vector-borne disease, malaria is difficult to control due to our limited ability to control the mosquito vectors. Army leaders focused instead on preventing exposure by enforcing our use of permethrin-treated uniforms and mosquito nets.

I am fortunate to have life experiences such as those gained in the Army that have helped me understand and apply concepts that I have learned in public health courses. I am

also confident that my public health education and veterinary coursework at Kansas State University has equipped me with the competencies that I need to graduate and contribute to the field of public health. However, the one competency that I have attained that I feel should not go unmentioned is that of approaching the world as a lifelong learner. I will build upon the foundations that I have gained during the Master of Public Health program here at Kansas State University for the rest of my life by continuing to pursue educational experiences, whether those are continuing education courses, professional conferences, research, or daily experiences as a practicing shelter veterinarian.

Bibliography

- Abu-Ali, A. (2013). *Barriers to Disease Reporting in Johnson County, Kansas*. Retrieved from Manhattan, Kansas: <https://krex.k-state.edu/dspace/handle/2097/15794>
- Alba, A. D. B., Denise H. ; Lyden, Elizabeth; Johansson, Patrik. (2016). "Assessing health literacy levels of Spanish-speaking Hispanic patients in Spanish at federally qualified health centers (FQHCs) in the Midwest.". *Journal of Health Care for the Poor and Underserved*, 27, 1726-1732.
- Allen, E. M., Call, K. T., Beebe, T. J., McAlpine, D. D., & Johnson, P. J. (2017). Barriers to Care and Health Care Utilization Among the Publicly Insured. *Medical care*, 55(3), 207-214. doi:10.1097/MLR.0000000000000644
- Ali, P. A., & Watson, R. (2018). Language barriers and their impact on provision of care to patients with limited English proficiency: Nurses' perspectives. *Journal of Clinical Nursing*, 27(5-6), e1152-e1160. doi:10.1111/jocn.14204
- Cersosimo, E., & Musi, N. (2011). Improving treatment in Hispanic/Latino patients. *Am J Med*, 124(10 Suppl), S16-21. doi:10.1016/j.amjmed.2011.07.019
- DuBard, C. A., & Gizlice, Z. (2008). Language Spoken and Differences in Health Status, Access to Care, and Receipt of Preventive Services Among US Hispanics. *American Journal of Public Health*, 98(11), 2021-2028. doi:10.2105/ajph.2007.119008
- Fill, M. A., Murphree, R., & Pettit, A. C. (2017). Health Care Provider Knowledge and Attitudes Regarding Reporting Diseases and Events to Public Health Authorities in Tennessee. *Journal of Public Health Management Pract*, 23(6), 581-588. doi:10.1097/phh.0000000000000492
- Gakh, M., Labus, B., & Walker, B. (2018). Characteristics of Laws Requiring Physicians to Report Patient Information for Public Health Surveillance: Notable Patterns from a Nevada Case Study. *J Community Health*, 43(2), 328-337. doi:10.1007/s10900-017-0426-4
- Harari, N. D., Matthew; Heisler, Michele. (2008). Strangers in a Strange Land: Health Care Experiences for Recent Latino Immigrants in Midwest Communities *Journal of Health Care for the Poor and Underserved*, 19(4), 1350-1367.
- Heher, Y. K., & Chen, Y. (2017). Process mapping: A cornerstone of quality improvement. *Cancer Cytopathology*, 125(12), 887-890. doi: <https://doi.org/10.1002/cncy.21946>
- Janati, A., Hosseiny, M., Gouya, M. M., Moradi, G., & Ghaderi, E. (2015). Communicable Disease Reporting Systems in the World: A Systematic Review Article. *Iranian journal of public health*, 44(11), 1453-1465. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/26744702>
- Kansas Administrative Regulation 28-1-2. Reporting Requirements for infectious or contagious diseases and conditions, 28-1-2 C.F.R. (2018).

Kansas Department of Agriculture (2020). Animal Reportable Disease Poster

Kansas Department of Health and Environment. (2018). Disease Reporting for Health Professionals Retrieved from https://www.kdheks.gov/epi/disease_reporting.html#requirements

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Educ Q*, 15(4), 351-377. doi:10.1177/109019818801500401

Preczewski A. Disease Reporting in Riley County. Written Report. on file, Riley County Health Department, Jan 2021.

Riley County. (2021). Riley County Official Website. Retrieved from <https://www.rileycountyks.gov/286/Health-Department>

Samoff, E., Fangman, M. T., Fleischauer, A. T., Waller, A. E., & Macdonald, P. D. M. (2013). Improvements in timeliness resulting from implementation of electronic laboratory reporting and an electronic disease surveillance system. *Public health reports (Washington, D.C. : 1974)*, 128(5), 393-398. doi:10.1177/003335491312800510

Southwell, B. G., Reynolds, B. J., & Fowlie, K. (2013). Communication in Infectious Disease Surveillance In *Infectious Disease Surveillance* Retrieved from <http://ebookcentral.proquest.com/lib/ksu/detail.action?docID=1154369>

Van Beneden, C. A., Arvay, M., Thamthitiwat, S., & Lynfield, R. (2013). Active, population-based surveillance for infectious diseases. In *Infectious Disease Surveillance*. Hoboken, United Kingdom John Wiley & Sons, Incorporated.

Appendix A - Disease Reporting Surveys

Compliance, Knowledge, and Attitudes toward Human Disease Reporting in Kansas

Prepared by: Anna Kucera and Amanda Preczewski

July 2020

Survey Questions for Human Disease Reporters

The survey will be administered using Qualtrics, so the format of the questions will be different from this version. This survey will take approximately 20 minutes to complete. Participation is voluntary, and you may leave any question(s) blank that you do not want to answer. Please do not use any outside references for completion of the knowledge questions, as your answers will inform research into improvement of disease reporting in Kansas.

Demographics

Q1. Are you a licensed, human healthcare provider who currently practice medicine in Kansas?

- ☐ Yes
- ☐ No

Q2. Is this your first time completing this survey.

- ☐ Yes
- ☐ No

Are you a nurse (RN, LPN), hospital administrator, or other individual responsible for reporting diseases at your practice?

- ☐ Yes
- ☐ No

Q3. What year did you graduate from medical/PA school (if applicable)?

Q4. Where do you currently practice medicine?

- ☐ City: _____
- ☐ County: _____

Q5. What is your medical specialty?

- ☐ Family practice
- ☐ Internal medicine
- ☐ General practice
- ☐ Pediatric medicine
- ☐ Emergency Medicine
- ☐ Obstetrics/Gynecology
- ☐ Infectious disease
- ☐ Other _____

Q6. What category best describes your current practice?

- ☐ Private practice
- ☐ Group practice
- ☐ Health Maintenance Organization (HMO)
- ☐ Hospital-based
- ☐ Other _____

Knowledge-Based Questions

Q7- According to Kansas statutes and regulations (K.S.A. 65-118, 65-128, 65-6001 - 65-6007, K.A.R. 28-1-2, 28-1-4, and 28-1-18), please indicate whether the following diseases are reportable or not and select the appropriate reporting timeline. Do not use resources to complete this portion of the survey. Results will remain anonymous and will help inform future disease reporting training.

1- Anthrax

___ Reportable (within 4 hours) ___ Reportable (within 24 hours)
___ Not reportable ___ I do not know

2- Blood lead levels

___ Reportable (within 4 hours) ___ Reportable (within 24 hours)
___ Not reportable ___ I do not know

3- Influenza deaths in children <18 years of age

___ Reportable (within 4 hours) ___ Reportable (within 24 hours)
___ Not reportable ___ I do not know

4- Tetanus

___ Reportable (within 4 hours) ___ Reportable (within 24 hours)
___ Not reportable ___ I do not know

5- Varicella

___ Reportable (within 4 hours) ___ Reportable (within 24 hours)
___ Not reportable ___ I do not know

6- Leptospirosis

___ Reportable (within 4 hours) ___ Reportable (within 24 hours)
___ Not reportable ___ I do not know

7- Carbon monoxide poisoning

___ Reportable (within 4 hours) ___ Reportable (within 24 hours)
___ Not reportable ___ I do not know

8- Severe Acute Respiratory Syndrome-associated coronavirus (SARS-CoV)

___ Reportable (within 4 hours) ___ Reportable (within 24 hours)
___ Not reportable ___ I do not know

9- Gonorrhea

☐ Reportable (within 4 hours) ☐ Reportable (within 24 hours)
☐ Not reportable ☐ I do not know

10- E. coli

☐ Reportable (within 4 hours) ☐ Reportable (within 24 hours)
☐ Not reportable ☐ I do not know

Awareness/Knowledge of Reporting Requirements

Q8. To your best of your knowledge, is disease reporting mandated by law or just good medical practice?

- ☐ Mandated by law
- ☐ Good medical practice, but not legally mandated
- ☐ I don't know

Q9. Are you familiar with the list of notifiable diseases in Kansas?

- ☐ Yes
- ☐ No
- ☐ Familiar with some but not all

For your benefit, this is the list of Kansas notifiable diseases.

https://www.kdheks.gov/epi/download/KANSAS_NOTIFIABLE_DISEASE_LIST.pdf

Attitudes/Compliance

Q10. Approximately how many times per month do you diagnose a reportable disease?

Q11. When you *suspect* a reportable disease, how frequently do you report it?

- ☐ Rarely
- ☐ 30-50% of the time
- ☐ 50-70% of the time
- ☐ 70-90% of the time
- ☐ All the time

Q12. When you *diagnose* a reportable disease, how frequently do you report it?

- ☐ Rarely
- ☐ 30-50% of the time
- ☐ 50-70% of the time
- ☐ 70-90% of the time
- ☐ All the time

Q13. When you suspect/diagnose a reportable disease, to whom do you typically report?

- ☐ Riley County Health Department (RCHD)
- ☐ Kansas Department of Health and Environment (KDHE)?

Appendix A

- Either RCHD or KDHE
- Neither RCHD or KDHE
- Other _____

Q14. How do you most frequently report notifiable diseases?

- Online form
- Phone an individual
- Email an individual
- Fax
- Other: _____

Q15. Why do you feel that it is important to report notifiable diseases when suspected/diagnosed? Please select all that apply.

- It's not important to report
- To prevent further spread
- Human health implications
- It's the law
- Other : _____

Barriers

Q16. What are common barriers or challenges that prevent you from reporting diseases? Please select all that apply.

- Lack of time
- Lack of knowledge of Kansas reportable diseases
- Process for reporting is inefficient/time consuming
- Begin report but cases are lost in administrative shuffling
- Unsure who/what agency to send report to
- Fear of negative public opinion
- Other: _____

Q17. When you diagnose a reportable disease, what are other steps you take to trace contacts of the patient? Please select all that apply.

- Instruct individual to inform those they've been in contact with
- Have your office contact the patient's contacts
- Remain in contact with the patient to see how the case progress
- Contact the health department
- No additional action
- Other: _____

Appendix A

Q18. In addition to diagnosis and treatment, do you provide any additional medical advice/support to those with diagnosed zoonotic diseases (i.e. salmonellosis, ringworm, parasitic diseases)?

☐ Yes

■ Please explain: _____

☐ No

Q19. What would be your preferred method of reporting notifiable diseases?

☐ Online form

☐ Individual to call

☐ Individual to email

☐ Fax

Q20. Have you practiced medicine in a state other than Kansas?

☐ Yes

☐ No

Q21. If you have practiced in another state, was that state's procedure for reporting diseases better than here in Kansas?

☐ Yes (please explain how the process differed)

☐ No

Do you have interest in participating in RCHD-led grand round table talks/focus groups to identify improved methods of disease reporting?

☐ Yes

■ Contact info : _____

☐ No

Compliance, Knowledge, and Attitudes toward Animal Disease Reporting in Kansas

Prepared by: Anna Kucera and Amanda Preczewski

July 2020

Survey Questions for Veterinarians

The survey will be administered using Qualtrics, so the format of the questions will be different from this version. This survey will take approximately 5-15 minutes to complete. Participation is voluntary, and you may leave any question(s) blank that you do not want to answer. Please do not use any outside references for completion of the knowledge questions, as your answers will inform research into improvement of disease reporting in Kansas.

Demographics

B1. What year did you graduate from veterinary school?

B2. What is your specialty (if applicable)?

B3. What category best describes your current practice?

- ☐ Private Practice
- ☐ Animal Shelter
- ☐ Government (Military, USDA, etc.)
- ☐ Academia
- ☐ Other: _____

B4. Which types of animals do you generally diagnose/treat (select all that apply)?

- ☐ Small Animal
- ☐ Large/Farm/Food Animal
- ☐ Avian
- ☐ Exotic Veterinary
- ☐ Wildlife
- ☐ Zoo
- ☐ Other: _____

Knowledge of Reporting Requirements

B5. According to regulations published by Kansas Department of Agriculture (KDA), please indicate whether the following diseases are reportable or not. Do not use resources to complete this portion of the survey. Results will remain anonymous and will help inform future disease reporting training. A link to a listing of reportable diseases will be provided immediately upon completion of this portion of the survey.

Appendix A

1- Vesicular Stomatitis

☐ Reportable ☐ Not reportable
☐ I do not know

2- Rabies

☐ Reportable ☐ Not reportable
☐ I do not know

3- West Nile Virus (WNV)

☐ Reportable ☐ Not reportable
☐ I do not know

4- Tetanus

☐ Reportable ☐ Not reportable
☐ I do not know

5- Brucellosis

☐ Reportable ☐ Not reportable
☐ I do not know

6- Avian Influenza

☐ Reportable ☐ Not reportable
☐ I do not know

7- Psittacosis

☐ Reportable ☐ Not reportable
☐ I do not know

8- Severe Acute Respiratory Syndrome-associated coronavirus (SARS-CoV)

☐ Reportable ☐ Not reportable
☐ I do not know

9- Tuberculosis

☐ Reportable ☐ Not reportable
☐ I do not know

10- E. coli

☐ Reportable ☐ Not reportable
☐ I do not know

Answer Key:

***Tetanus and E. coli are not reportable diseases

Awareness

B6. To your best of your knowledge, is disease reporting mandated by law or just good medical practice?

- Mandated by law
- Good medical practice, but not legally mandated
- I don't know

B7. Are you familiar with the list of reportable diseases in Kansas?

- Yes
- No
- Familiar with some but not all

B8. Are you aware of the timeline requirements for reportable diseases in Kansas?

- Yes
- No
- Familiar with some but not all

B9. Have you ever diagnosed a reportable disease?

- Yes
- No

B10. Approximately how many times per month do you diagnose a reportable disease?

For your benefit, this is the list of Kansas animal reportable diseases. [Link to KDA Website - Reportable Disease Information](#)

A poster can be found here: [Link to KDA Reportable Disease Poster](#)

Compliance

B11. When you *suspect* a reportable disease, how frequently do you report?

- Rarely
- 30-50% of the time
- 50-70% of the time
- 70-90% of the time
- All the time

B12. When you *diagnose* a reportable disease, how frequently do you report?

- Rarely
- 30-50% of the time
- 50-70% of the time
- 70-90% of the time
- All the time

Attitudes/ Barriers

B13. Why do you feel it is important to submit reports when diagnosing or suspecting a reportable disease? Please select all that apply.

- ☐ It is not important to report.
- ☐ To prevent further spread of disease.
- ☐ There are human health implications for zoonotic diseases.
- ☐ I have a legal obligation to report.
- ☐ Other : _____

B14. What are barriers that prevent you from reporting diseases? Please select all that apply.

- ☐ Lack of time
- ☐ Lack of knowledge of Kansas reportable diseases
- ☐ Process for reporting is inefficient/time consuming
- ☐ Begin report but cases are lost in administrative shuffling
- ☐ Unsure who/what agency to send report to
- ☐ Fear of negative public opinion or loss of client
- ☐ Other: _____

B15. Do you provide any additional support to owners/clients with animals that are diagnosed with zoonotic diseases? If so, what?

- ☐ Yes
 - Please Explain: _____
- ☐ No

B16. What would be your preferred method of reporting?

- ☐ Online form
- ☐ Individual to call
- ☐ Individual to email
- ☐ Fax
- ☐ Other: _____

B17. Have you practiced in a state other than Kansas?

- ☐ Yes
- ☐ No

B18. If you have practiced in another state, was that state's procedure for reporting diseases better than here in Kansas?

- ☐ Yes (please explain _____)
- ☐ No

Appendix B - Disease Reporting Report

Amanda S. Preczewski, DVM/MPH Student

Kansas State University CVM

Manhattan, Kansas 66502

Email: amandaspreczewski@vet.k-state.edu

January 26, 2021

Health Educator
Riley County Health Department
2303 Tecumseh Road
Manhattan, KS 66502

Dear Health Educator,

In response to your request for analysis of Riley County disease reporting as part of my Masters of Public Health Applied Practice Experience, I have compiled the attached report.

This report outlines Kansas's current reporting requirements and procedures for notifiable diseases and conditions. Furthermore, it summarizes the methodology and findings of a survey-based research project that was conducted from June to December 2020 to gather information human healthcare providers and veterinarians about attitudes about, barriers toward, and knowledge of disease reporting in Kansas.

Finally, the report identifies common trends in disease reporting, presents initial recommendations for improvement, and outlines steps for future research

I hope that the research and findings in this report will help the Riley County Health Department better understand current trends in disease reporting and may aid further research.

I appreciate the opportunity to research a topic with such relevance to the public health community, as we continue to face a global pandemic, and I greatly value your feedback.

Please contact me with any questions pertaining to this report; I would be happy to discuss this project further.

Sincerely,

Amanda Preczewski, DVM/MPH Student, Class of 2022

Attachment

Findings and Recommendations of Project Investigating compliance, knowledge,
attitudes, and barriers associated with mandatory disease reporting in Kansas

Prepared for

Riley County Health Department
Manhattan, Kansas

Presented by

Amanda Preczewski, DVM/MPH Student, Class of 2022
Kansas State University

January 26, 2021

TABLE OF CONTENTS

EXECUTIVE SUMMARY	iv
BACKGROUND RESEARCH	56
PROJECT OUTLINE	58
METHODOLOGY	59
SURVEY RESULTS AND DISCUSSION	61
CONCLUSIONS AND RECOMMENDATIONS	66
REFERENCE LIST	70
APPENDIX A: IRB DOCUMENTATION	
APPENDIX B: SURVEY FOR HUMAN HEALTHCARE PROFESSIONALS	
APPENDIX C: SURVEY FOR VETERINARIANS	
APPENDIX D: PRESENTATION OF SURVEY FINDINGS	

EXECUTIVE SUMMARY

Analysis of Disease Reporting among Kansas Healthcare Providers and Veterinarians

Kansas healthcare providers and veterinarians are legally mandated to report to Kansas Department of Health and Environment (KDHE) or their local health department when they suspect or diagnose certain diseases. However, prior to the COVID-19 pandemic, the Riley County Health Department was receiving fewer reports than expected (compared to counties of comparable size). Underreporting and delayed reporting by physicians are two common complaints from health department workers throughout the United States; Riley County is not immune to these shortfalls. To analyze disease reporting in Kansas (with an emphasis on Riley County), human healthcare providers and veterinarians were surveyed about their knowledge of, attitudes toward, compliance with, and barriers to disease reporting regulations. Additionally, a sample of Kansas veterinarians was surveyed, and results were analyzed to identify similarities and differences between human and animal disease reporting.

Kansas public health officials rely primarily on passive surveillance to gain valuable information about infectious and communicable diseases as well as about certain non-communicable conditions. Statutes and regulations outline reporting responsibilities and administrative requirements. Kansas Department of Health and Environment (KDHE) maintains the list of notifiable conditions. The success of the system depends on how well mandated reporters comply with their legal requirements. Through reports from physicians and other mandated disease reporters, state and local health departments learn of disease clusters and outbreaks.

Though small sample sizes limited the scope of this project, surveys results suggest that three actions could improve compliance with state and local regulations—better education of healthcare providers about reporting regulations, more streamlined reporting procedures, and additional research with an expanded survey population.

Ultimately, a larger sample size and additional research is needed to determine whether these survey findings reflect the target population—Riley County mandated disease reporters. This report outlines suggestions for continued research and ways to improve future survey methods.

January 26, 2021

Amanda Preczewski, DVM/MPH Student, Class of 2022
Kansas State University
Manhattan, KS 66502

Telephone: 414.793.7903
E-mail: amandaspreczewski@vet.k-state.edu

BACKGROUND RESEARCH

Disease reporting systems depend on epidemiological principles of surveillance. In Kansas, surveillance is primarily passive—health department personnel receive disease reports from designated medical professionals who shoulder the burden of identifying and reporting conditions. In contrast, an active surveillance system would rely on health department personnel to “actively solicit reports” from the medical professionals.¹ While combining of the two types of surveillance may seem like a simple way to maximize a community’s health, each type has its own strengths and weaknesses and requires different resources and training. The ultimate goals of disease surveillance include preventing disease spread and decreasing disease-related death and disability.²

In Kansas, the Secretary of State has published the state’s disease reporting requirements as administrative regulations and statutes³; these legal documents direct certain licensed healthcare professionals, named “mandated reporters”,³ to notify local or state health departments whenever they suspect or diagnose a specified disease. The Kansas Department of Health and Environment (KDHE) maintains that comprehensive list of notifiable diseases and conditions on their website. Through a combination of legal documents and official websites, state officials outline notifiable diseases and conditions and, in general terms, who bears the legal responsibility to report. The list of diseases and conditions is lengthy—more than 60 diseases and conditions as of July 2020⁴—and the responsibilities of each type of reporter (i.e. physician vs. diagnostic laboratory) sometimes overlap in confusing ways.³ Moreover, reporting timelines and methods vary by health department. All of these factors contribute to breakdowns in reporting.

Throughout the United States, underreporting and delays in reporting are widely recognized problems; however, few studies specifically examine Kansas disease reporting. In a

Appendix B

2013 Kansas State University Master of Public Health report, Asha Abu-Ali⁵ contributed to the small body of research by analyzing reporting in Johnson County, Kansas. A 2017 cross-sectional study of Vanderbilt Medical Center physicians by Fill et al⁶ identified almost identical barriers in Tennessee. Numerous literature reviews and epidemiology texts also seek to address the seemingly nationwide failures in disease reporting processes.

Barriers to effective disease reporting fit into three general categories: reporter-level problems, recipient-level problems, and procedural problems.² The presence of any of these barriers can negatively affect a community's health. Further analysis of these categories can help a health department identify the most effective method of intervention.

Reporter-level barriers exist in health clinics, hospitals, medical centers, and diagnostic laboratories. One significant reporter-level barrier is a provider's general lack of awareness of notifiable diseases. The Vanderbilt Medical Center study cited a "lack of knowledge about which diseases are reportable" as the most significant barrier⁶ among survey participants. In addition to lack of awareness about the requirements, many reporters claim unfamiliarity with reporting procedures and timelines.² Reporting methods vary by county; some require reporting by fax, telephone, or mail. Other counties have adopted secure online reporting methods.¹ Personnel shortages within a healthcare facility are also reporter-level barriers that may result in insufficient or delayed reporting. Finally, in facilities where staff are not aware of reporting procedures, reports are more likely to be lost or improperly submitted.

Recipient-level barriers occur at the health department level and are defined as lack of action by health department personnel. First, lack of enforcement of reporting regulations is common. Even though underreporting is a widely known problem throughout the United States, violators are rarely, if ever, punished.⁷ Similarly, health departments often do not provide regular feedback to healthcare providers; this lack of two-way communication decreases the incentive to report in the first place and prevents providers from seeing the positive effects of their actions

Appendix B

on public health. Finally, although many health department personnel recognize that reporters lack knowledge of notifiable diseases and reporting procedures, education for these reporters may be lacking in certain communities.

Procedural barriers describe challenges with the reporting process itself. Many healthcare providers complain that the reporting process in their counties is too complicated. Abu-Ali⁵ cited numerous complaints about the complexity of the Johnson County reporting process. Reporting may also be too time consuming for a clinician who must decide how to prioritize patient care and administrative requirements. Lastly, procedures that use mail, fax, or telephone may increase the likelihood of a report getting lost somewhere in the process.

Failures in the reporting system threaten the health of a community. A community that reports diseases only 25% of the time may look healthy on paper; however, the lack of reporting the other 75% of diseases cripples the local health department's ability to act. A lack of reporting also does not stop affected patients from sharing information with the media. The media may find out about a public health emergency before the health departments when reporting is weak.⁸ To prevent unchecked disease spread and publicity nightmares, all community members should support timely and accurate disease reporting.

PROJECT OUTLINE

In June 2020, the Riley County Health Department (RCHD) Health Educator and project team, consisting of Amanda Preczewski and Anna Kucera (DVM/MPH students from Kansas State University), designed a project to gather information about whether the infrequent reporting of Kansas notifiable diseases by Riley County healthcare workers was due to underreporting. The scope of this project did not include access to medical records. Since the team could not directly assess reporting compliance, they designed an indirect approach—one that surveyed medical professionals about their disease reporting behaviors. Additionally, the

Appendix B

project team identified Kansas veterinarians as a valuable source of information about animal disease reporting. By surveying both human healthcare workers and veterinarians, the team could compare and contrast the knowledge, motivation, compliance, and barriers to reporting. Conclusions informed by both populations could highlight areas for improvement and best practices regarding disease reporting in Riley County.

Goals of this project included the following:

- To estimate Riley County healthcare workers' compliance with Kansas disease reporting regulations
- To assess Riley County healthcare workers' knowledge of notifiable disease reporting requirements in Kansas
- To identify potential barriers to accurate, timely reporting of human and animal diseases
- To identify preferred methods of disease reporting among human Riley County healthcare workers and Kansas veterinarians

This report presents the findings, conclusions, and recommendations from the aforementioned human and animal disease reporting surveys and serves as initial research to improve disease reporting in Riley County.

METHODOLOGY

The project team designed two surveys—one for Riley County human healthcare providers (doctors, physician assistants, nursing staff, etc.) and the other for licensed Kansas veterinarians. With mentorship and guidance from Dr. Kate KuKanich, the team submitted a research proposal (10214) to the Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University. The proposal received exemption from further IRB review under criteria established in the Federal Policy for the Protection of

Appendix B

Human Subjects, 45 CFR §104(d), category 2, subsection: ii. Refer to Appendix A for IRB documentation.

The source population for the human disease reporting survey included licensed medical professionals listed in the Kansas Board of Healing Arts (BHA) directory. The project team obtained a directory of licensed medical professionals from the BHA and filtered the list to include only those currently licensed and practicing in Riley County. The directory was further filtered to exclude medical specialties such as specialty surgeons or those unlikely to encounter patients with any of the Kansas notifiable/reportable diseases or conditions (ie. psychiatrists, surgical oncologists, orthopedic surgeons, etc).³

As requested by the project team, Riley County Health Department distributed a 21-question Qualtrics survey via email to the list of 145 licensed healthcare professionals from the BHA directory. Respondents were asked for informed consent, and survey responses were collected anonymously via Qualtrics. Refer to Appendix B for a copy of the human disease reporting survey. The survey was open from October-December 2020, and the response rate was 19.31% (28/145). The low response rate and small sample size strongly suggest the need for follow-up research.

The source population for the 18-question animal disease reporting survey included licensed Kansas veterinarians who were members of the Kansas Veterinary Medical Association (KVMA) and/or clinicians at Kansas State University College of Veterinary Medicine. Refer to Appendix C for the animal disease reporting survey questions. The KVMA assisted the project team by distributing the Qualtrics surveys via email to all member veterinarians. Due to the distribution method, the number of survey recipients and response rate is unknown. Seventy-nine veterinarians completed the survey between October and December 2020. Survey results were collected anonymously.

Both the human and animal disease-reporting surveys asked for information about the following categories:

- Demographics (medical/veterinary school graduation year, specialty, type of practice)
- Awareness of Kansas disease reporting requirements
- Attitudes/motivation toward disease reporting
- Disease reporting compliance (self-assessed)
- Barriers to reporting (self-assessed)
- Preferred reporting methods

SURVEY RESULTS AND DISCUSSION

Demographics of participants - Human Disease Reporting Survey

Twenty-eight respondents met inclusion criteria for the human disease reporting survey. Of those respondents, 27 were licensed medical providers (M.D., D.O., or P.A.) and one was a Registered Nurse (R.N.). Differences in experience among survey participants ranged 32 years. The earliest medical school graduation year was 1984, the most recent was 2016, and the median was 2005.

Medical specialties ranged from family practice (21%), pediatric medicine (14%), internal medicine (11%), emergency medicine (11%), to other (43%). Specialties listed as “other” included surgery, urology, pathology, dermatology, cardiology, occupational health, pulmonology, nephrology, urgent care, and oncology. This wide range of “other” specialties further supports the need for additional research, as many of these specialty providers are not likely to see patients with reportable diseases and may have biased survey results.

Appendix B

Private practice was the most common type among respondents (43%), with others classifying as group practices (36%), hospital-based practices (11%), or student health clinics (4%).

Demographics of participants – Animal Health Survey

Seventy-nine respondents met inclusion criteria for the animal disease reporting survey—licensed veterinarian in the State of Kansas. Veterinary school graduation years ranged from 1984 to 2019, with a median graduation year of 1991.

Surveyed veterinarians reported a variety of animal species diagnosed/treated in their current jobs; 77% worked with small animals, 39% worked with large animals/food animals, and 34% worked with equine. Smaller percentages worked with exotic pets (18%), birds (15%), and wildlife/zoo species (4%). Practice types of those surveyed included private practice (68%), academia (17%), government/military (5%), and “other” (10%).

Goal 1: Estimate level of compliance of Riley County healthcare providers/nurses with Kansas disease reporting regulations (human disease reporting)

Since it was beyond the scope of this project to directly examine patient medical records and compare them to reporting data from medical facilities, survey questions Q12 and Q7 served to estimate the level of reporting compliance.

- **Q12:** How frequently do you report when you diagnose a reportable disease?

Results: Respondents stated that they reported an average of 79.5% of the time that they diagnosed reportable diseases and 51% of the time that they suspected reportable disease (but may have been pending confirmatory lab work or other diagnostics).

- **Q7:** According to Kansas statutes and regulations K.S.A. 65-118, 65-128, 65-6001 - 65-6007, K.A.R. 28-1-2, 28-1-4, and 28-1-18), please indicate whether the following diseases are reportable or not and select the appropriate reporting timeline. Do not use resources to complete this portion of the survey.

Results: Based on respondents' performance on an eleven-question, closed-resource quiz included in the survey, a knowledge gap exists about Kansas disease reporting regulations. The quiz presented a list of eleven diseases/conditions and asked respondents to categorize each as 1) reportable within 4 hours, 2) reportable within 24 hours, or 3) not reportable. Respondents could also select "I don't know" as an option for each disease/condition.

Of the diseases/conditions listed, anthrax, tetanus, and SARS-CoV are reportable within 4 hours in Kansas.³ Only 64% correctly categorized Anthrax, and less than 33% correctly categorized Tetanus or SARS-CoV. Diseases reportable within 24 hours were correctly categorized by the following percentages of respondents: Gonorrhea (68%), Elevated blood lead levels in a child (54%), influenza death in a child 18 years of age (39%), varicella (36%), Carbon monoxide poisoning (30%), leptospirosis (29%), and non-elevated (but detectable) blood lead levels in a child (11%). Finally, only half of respondents correctly identified E. coli as non-reportable.

The high percentage of incorrect responses suggests that participants lacked of knowledge regarding Kansas reporting regulations. Limitations of this project—specifically, sample size—make it difficult to infer a knowledge gap among the target population as a whole. Still, there is much room for improvement in disease reporting training/education. Additionally, incorrect responses to this quiz suggest that surveyed healthcare providers were less likely to have previously reported when they suspected/diagnosed one of the reportable diseases on the quiz.

Goal 2: Assess Riley County healthcare providers/nurses' knowledge of notifiable disease reporting requirements in Kansas

To assess knowledge of reporting requirements, questions Q7, Q8, Q9, and Q16 were analyzed:

- **Q7:** According to Kansas statutes and regulations K.S.A. 65-118, 65-128, 65-6001 – 5-6007, K.A.R. 28-1-2, 28-1-4, and 28-1-18), please indicate whether the following diseases are reportable or not and select the appropriate reporting timeline. Do not use resources to complete this portion of the survey.

Results: Refer to the discussion above.

- **Q8:** To the best of your knowledge, is disease reporting mandated by law or is it just good medical practice?

Results: 85% (24/28) of respondents correctly identified that disease reporting is legally mandated.

- **Q9:** Are you familiar with the list of notifiable diseases in Kansas?

Results: Only 25% of respondents rated themselves as “familiar” with the list of Kansas notifiable diseases. Conversely, approximately 20% admitted to not being familiar, while the majority (53%) claimed to be “familiar with some, but not all” diseases.

- **Q16:** What are common barriers or challenges that prevent you from reporting diseases?

Results: The most commonly cited barrier to reporting was a self-reported lack of knowledge of Kansas reportable/notifiable diseases (39%). The next most common reasons

were that “the process for reporting is inefficient or time consuming” (29%) or that they were unsure where to send reports (29%). Respondents also cited “lack of time” to report (25%).

Goal 3: Identify potential barriers to accurate, timely reporting of human diseases and compare those barriers to those reported by Kansas veterinarians regarding animal diseases

In order to identify barriers to accurate and timely reporting, responses to Q16, B14, Q15, and B13 were analyzed.

- **Q16/B14:** What are common barriers of challenges that prevent you from reporting diseases?

Results: As described above, the most common barrier to reporting among human providers was a self-reported lack of knowledge of Kansas reportable/notifiable diseases. The next most common reason is that the process for reporting is inefficient or time consuming. Other responses included lack of time or unsure where to send report.

Among Kansas veterinarians, The most commonly reported barrier was lack of knowledge of Kansas reportable diseases (38%, 30/79), followed by uncertainty about who/what agency to send report to (29%, 23/79), “other” (20%, 16/79) , “lack of time” or “process for reporting is inefficient/time consuming” (14%, 11/79). While human healthcare providers did not cite “fear of negative public opinion” as a barrier to reporting, 7% of veterinarians did.

- **Q15/B13:** Why do you feel that it is important to report notifiable disease when suspected/diagnosed?

Results: None of the human healthcare respondents believed that “it is not important to report”; however, motivations for reporting varied. Only 20% believed that reporting is important because “it is legally mandated,” while 70% felt that disease reporting was important “to prevent further disease spread,” and 47% felt that it was important to report because of human health implications.

Among veterinary respondents, the most common motivations to report were “I have a legal obligation to report” and because “reporting can protect human health in the event of a zoonotic disease” (84%, 67/79). The next most popular motivation was that “reporting is important to prevent disease outbreaks/continued disease spread (83%, 65/79). A small percentage cited “other” or that “it is not important to report”. One notable free-text response to B11 described how past reporting experiences did not result in expected/desired action by the report recipient.

Goal 4: Identify and compare preferred methods of reporting among Riley County human healthcare providers/nurses and Kansas veterinarians

Q19 and B14 asked participants about preferred reporting methods.

- **Q19/B14:** What would be your preferred method of reporting notifiable diseases?

Results: The most preferred method of reporting among Riley County human healthcare respondents was via online form (64%, 18/28). This option is currently not available through Riley County Health Department or KDHE. The next most preferred reporting method was fax (19%, 5/28), followed by phone (18%, 4/28).

While 49% (36/73) of veterinary respondents stated that they would prefer an online form for reporting, 37% (27/73) would prefer to “phone and individual” and 10% (7/73) would prefer email.

CONCLUSIONS AND RECOMMENDATIONS

This project partially achieved its four goals—assessing compliance, knowledge attitudes, and barriers related to disease reporting in Riley County. The small response rate and timing of survey distribution hampered the team’s ability to draw useful statistical associations between survey respondents and the target population. However, the surveys yielded useful

Appendix B

responses that the project team analyzed to form initial recommendations to RCHD regarding disease reporting. Initial recommendations include the following: 1) conducting additional research in the form of interviews, focus groups, or roundtable discussions that expands the survey population to include nursing staff, practice managers, and other individuals designated as disease reporters, 2) increasing disease reporting education/training for Riley County healthcare workers, and 3) providing Riley County reporters with a web-based reporting method.

Future Research

Sample size and survey timing affected the project's ability to achieve its four goals. First, the small sample size of survey respondents severely limited the project team's ability to infer conclusions about the larger target population—Riley County disease reporters. A larger sample size was needed for meaningful statistical analysis. Perhaps, changing the survey methodology from electronic surveys to in-person/Zoom/phone interviews with nursing staff, practice managers, and other designated reporters would yield a larger response rate. Additionally, interviews could yield more comprehensive, qualitative feedback and suggestions for improving the system.

An expanded survey population would also improve our ability to assess a relationship between respondent knowledge of reportable diseases and the actual compliance of a medical facility. This project could only compare an individual respondent's knowledge to his/her self-reported compliance. In reality, a physician who lacks knowledge about disease reporting may not even be responsible for reporting at his/her practice. A knowledgeable nursing staff may handle all reporting. Interviewing these designated reporters (whose actual job title may vary by practice) would improve the ability to generate inferences about all personnel responsible for the success of Riley County disease reporting.

The timing of the project may also have limited survey responses. Survey distribution took place during the COVID-19 pandemic, when many healthcare workers were experiencing high caseloads. High caseloads may have decreased healthcare workers' ability or willingness to participate in the survey. Future research (after the COVID-19 pandemic is over) could overcome this limitation.

Increasing Training for Mandated Reporters

Limitations aside, this project identified a knowledge gap among survey participants regarding Kansas disease reporting requirements. Additional training, possibly in the form of Continuing Education, could greatly increase the disease reporting knowledge of Riley County Physicians. If Riley County Health Department could facilitate such training, this would also provide an opportunity for health department workers and physicians to develop better working relationships. Better relationships could result in more effective, two-way communication and, ultimately, increased and accurate disease reporting.

Improving Reporting Methods

RCHD provides a 24/7 phone number that disease reporters can use for reportable diseases or public health emergencies. Similarly, KDHE offers a toll-free epidemiology hotline for disease reporting, and mandates that certain diseases be reported via phone call to this hotline. In addition to an initial report, certain other diseases require submission of a laboratory specimen to the Division of Health and Environmental Laboratories. For all other diseases on the reportable disease list, KDHE instructs reporters to fax a Kansas reportable disease form to either KDHE or the local health department.³

Survey respondents indicated that barriers to reporting included inefficiencies in the reporting process and confusion about to whom they should submit reports. Perhaps, if Riley

Appendix B

County Health Department published a secure, online form for disease reporting, reporters could more easily overcome some of these barriers and report more accurately.

Lastly, these surveys highlighted an important finding—every surveyed healthcare provider/nurse acknowledged that they recognized the importance of disease reporting. This simple response suggests that within Riley County, many healthcare workers are receptive to improving the disease reporting process. Additional research, in the form of focus groups or roundtable discussions with willing participants, should be conducted to tailor these recommendations to fit Riley County's needs.

REFERENCE LIST

1. Van Beneden CA, Arvay M, Thamthitiwat S, Lynfield R. Active, population-based surveillance for infectious diseases. *Infectious Disease Surveillance*. Hoboken, United Kingdom John Wiley & Sons, Incorporated; 2013: 95-108.
2. Janati A, Hosseiny M, Gouya MM, Moradi G, Ghaderi E. Communicable Disease Reporting Systems in the World: A Systematic Review Article. *Iran J Public Health*. 2015;44(11):1453-65.
3. Kansas Administrative Regulation 28-1-2. Reporting Requirements for infectious or contagious diseases and conditions, 28-1-2 (2018).
4. Kansas Department of Health and Environment. Disease Reporting for Health Professionals 2018 [cited 2020 07/12/2020]; Available from: https://www.kdheks.gov/epi/disease_reporting.html#requirements.
5. Abu-Ali A. Barriers to Disease Reporting in Johnson County, Kansas. Master of Public Health Report. Manhattan, Kansas: Kansas State University 2013 2013.
6. Fill MA, Murphree R, Pettit AC. Health Care Provider Knowledge and Attitudes Regarding Reporting Diseases and Events to Public Health Authorities in Tennessee. *Journal of Public Health Management Pract*. 2017 Nov/Dec;23(6):581-8.
7. Gakh M, Labus B, Walker B. Characteristics of Laws Requiring Physicians to Report Patient Information for Public Health Surveillance: Notable Patterns from a Nevada Case Study. *J Community Health*. 2018 Apr;43(2):328-37.
8. Southwell BG, Reynolds BJ, Fowlie K. Communication in Infectious Disease Surveillance. *Infectious Disease Surveillance* Hoboken, United Kingdom John Wiley & Sons, Incorporated; 2013: 607-622.
9. Samoff E, Fangman MT, Fleischauer AT, Waller AE, Macdonald PDM. Improvements in timeliness resulting from implementation of electronic laboratory reporting and an electronic disease surveillance system. *Public Health Rep*. 2013 Sep-Oct;128(5):393-8.

○

Appendix C - Hispanic Outreach Surveys

Riley County Health Department (RCHD) Hispanic Outreach Survey
Prepared by: Melitza Ramirez, Sofia Scavone, Amanda Preczewski
July 2020

Survey for Spanish-speaking Population in Riley County

This survey contains questions about your awareness of Riley County Health Department (RCHD) services, your needs and interests related to RCHD, barriers that you may have experienced when accessing healthcare in Riley County, and your recommendations for improvements in how RCHD and other agencies communicate with Spanish-speakers. Estimated time to complete this survey is 15-25 minutes, depending on the level of detail that you wish to provide for the open-ended questions. This survey is voluntary, and you may leave any question(s) blank that you do not wish to answer. Your responses will remain anonymous, and any contact information that you provide for future focus groups will be kept separate from your survey responses.



☐ **Demographics**

(1) How do you identify yourself?

■ Gender

- ☐ Female
- ☐ Male
- ☐ Other

■ Race

- ☐ White
- ☐ Black/African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Multiracial
- ☐ Other: _____
- ☐ Prefer not to answer

■ Country of Origin

- ☐ Dominican Republic
- ☐ Puerto Rico
- ☐ Mexico
- ☐ Paraguay
- ☐ Cuba
- ☐ El Salvador
- ☐ Peru
- ☐ Other (please specify): _____

Appendix C

■ Ethnicity

- ☐ Hispanic
- ☐ Black Hispanic
- ☐ White Hispanic
- ☐ Not Hispanic

■ Language you are most comfortable speaking

- ☐ Spanish
- ☐ English
- ☐ Other (please specify): _____

(2) What is your age? _____

(3) What is the highest level of education that you have completed?

- ☐ Less than 9th grade
- ☐ Some high school education, no diploma
- ☐ High School Diploma (or GED/equivalent)
- ☐ Some college courses, no degree
- ☐ Associate's degree or vocational training
- ☐ Bachelor's Degree
- ☐ Graduate or professional degree
- ☐ Other: _____

(4) Are you currently employed?

- ☐ Yes
- ☐ No

(5) What is your occupation? _____

(6) Do you have health insurance?

- ☐ Yes
- ☐ No

(7) What type of health care coverage do you use to pay for most of your medical care?
Coverage through:

- ☐ Your employer
- ☐ Someone else's employer
- ☐ A plan that you or someone else buys on your own
- ☐ Medicare
- ☐ Medicaid or Medical Assistance

Appendix C

- ☐ The military, CHAMPUS, TriCare, or the VA
- ☐ Indian Health Service (or Alaska Native Health Service)
- ☐ Some other source
- ☐ None
- ☐ Do not know/not sure
- ☐ Prefer not to answer

☐ **Ways you get your health and healthcare information**

(8) Where do you get information about health and healthcare? (Check all that apply)

- ☐ Doctor/health professional
- ☐ Health Department (County _____)
- ☐ Family/friends
- ☐ TV
- ☐ Internet (websites)
- ☐ Social Media
- ☐ School
- ☐ Church
- ☐ Other _____

(9) Please rank (1-5) your top 5 trusted sources of health and healthcare information?

- ___ Doctor/health professional
- ___ Health Department (County _____)
- ___ Family/friends
- ___ TV
- ___ Internet (websites)
- ___ Social Media
- ___ School
- ___ Church
- ___ Other _____

(10) What is your preferred format/outlet for receiving health and healthcare information?

- ☐ In person
- ☐ Email
- ☐ Text messages
- ☐ Phone call
- ☐ Look it up on smartphone
- ☐ Social Media
- ☐ Mail
- ☐ Bulletin Board
- ☐ Gossip

(11) Which of the following ways of getting health and healthcare information will you not use? (Check all that apply)

- ☐ In person
- ☐ Email
- ☐ Text messages
- ☐ Phone call
- ☐ Look it up using smartphone
- ☐ Social Media
- ☐ Mail
- ☐ Bulletin Board
- ☐ Gossip

(12) Which of the following helps you understand and remember the health and healthcare information you receive the best?

- ☐ Hear it
- ☐ Read it
- ☐ Watch it
- ☐ Discuss it
- ☐ Other _____

☐ **Awareness of Riley County Health Department programs**

(13) How many times have you visited the Riley County Health Department (RCHD)?

(14) Do you know about what RCHD offers?

- ☐ Yes
- ☐ No

If so, what programs/services does the RCHD offer?

☐ **Improving Connections with RCHD**

(15) If you have visited the RCHD in the past, would you utilize their services again? If so, why? Please explain any of your answers above in as much detail as you are

willing to provide.

(16) What are your interests within the RCHD?

- ☐ Breast and Cervical Cancer Screening
- ☐ Childcare licensing
- ☐ Community Clinics: provide blood pressure checks, flu shots, and screening services to vulnerable populations by visiting clients in the community setting. Includes Infant and Toddler Vision Screening
- ☐ Health Education
- ☐ Immunizations
- ☐ Maternal and Child Health. Prenatal classes for healthy pregnancy and baby; maternal and infant health program (monthly visits, physical exams, breastfeeding guidance, education, referrals), Newborn home visits, home visiting programs. All provided at no costs, Spanish interpreting available
- ☐ Opioid prevention and response
- ☐ Other clinical services: B12 shots, head lice check, blood pressure checks, hemoglobin checks, titers for Hep B and chickenpox, school physicals (major insurances and KanCare accepted)
- ☐ Raising Riley: child care subsidies
- ☐ Raising Riley: literacy education, home visiting to support child development, parenting classes, outreach events
- ☐ Raising Riley: technical assistance and professional development for childcare providers
- ☐ Reproductive Health Services: well-woman exam, pap test, Vaginitis, yeast infections, and urinary tract infections (UTI) testing
 - Testing for STDs
 - HIV
 - Pregnancy testing, counseling and referral
 - New birth control starts
 - Health education and counseling for adolescents, women and men
 - Birth control problems
 - IUD insertion and removal
 - Nexplanon insertion and removal
 - Colposcopy
 - LEEP (Loop Electrical Excisional Procedure)
 - STD treatment only
 - Birth control refills or Depo-Provera injections
- ☐ Sharps disposal (insulin needles, lancets, etc.)
- ☐ Women, Infants, and Children (WIC) Nutrition Services

Appendix C

Please explain any of your answers above in as much detail as you are willing to provide:

(17) What are ways that can potentially help connect you to the RCHD? Please explain any of your answers above in as much detail as you are willing to provide.

(18) On a scale of 1 to 10 (1 being not interested at all and 10 being extremely interested), how interested are you in receiving health information from the RCHD?
_____ (please write a number from 1-10)

(19) On a scale of 1 to 10 (1 being not interested at all and 10 being extremely interested), how interested are you using the others services that the RCHD provides?
_____ (please write a number from 1-10)

☐ **Barriers to accessing the services and programs above**

(20) When is the last time that you visited a healthcare professional?

- ☐ Within the last month
- ☐ 1-6 months ago
- ☐ 7-12 months ago
- ☐ Greater than 1 year ago
- ☐ Greater than 5 years ago

(21) How would you describe your overall health?

- ☐ Excellent
- ☐ Very Good
- ☐ Good
- ☐ Fair
- ☐ Poor

(22) Have you postponed healthcare in the past 12 months?

- ☐ Yes
- ☐ No

(23) Have any of the following barriers ever prevented you from accessing healthcare services for yourself or a family member in Riley County? Select all that apply.

- ☐ Not having enough time to seek services
 - ☐ Not having options for childcare
 - ☐ Not being able to take time off from work due to concerns about losing pay/employment
 - ☐ Other personal reasons. Please explain.
-

(24) Have you experienced any of the following barriers/challenges when seeking healthcare for yourself or a family member in Riley County? Select more than one choice, if applicable.

- ☐ Provider did not speak Spanish (but interpreter was available)
- ☐ Provider did not speak Spanish (and no interpreter was available)
- ☐ I did not feel that I could trust my provider.
- ☐ Provider did not show awareness/respect toward my culture.
- ☐ Office was not accessible/welcoming and did not offer any information in Spanish.
- ☐ Office did not provide a Spanish language line or brochures/pamphlets translated in Spanish.

Please explain any of your answers above in as much detail as you are willing to provide. Do you have any suggestions for ways in which healthcare providers can improve your experience and access to care?

(25) Have you experienced any of the following types of discrimination when seeking healthcare or essential services in Riley County? Unequal treatment because of

- ☐ Race/ethnicity
- ☐ My language
- ☐ Lack of health insurance or because of the type of insurance that I have
- ☐ My budget or inability to pay for expensive procedures/services
- ☐ Other. Please explain. _____

(26) When seeking healthcare or essential services in Riley County, have you ever had to decline or postpone services for the following reasons?

- ☐ Services were too expensive
- ☐ Medications were too expensive
- ☐ Insurance did not cover the service

☐ Other. _____

(27) If you have experienced any of the following challenges when seeking healthcare in Riley County, please explain in as much detail as you are willing to provide:

- ☐ Lack of transportation/difficulty coordinating transportation
- ☐ Unable to make an appointment (online, by phone, in person, etc.)
- ☐ Unable to access a website or resource, because there is not a Spanish version available
- ☐ Unable to see my preferred healthcare provider

☐ **Willingness to participate in future focus groups (this section will be kept separate from the survey so that survey answers can remain anonymous)**

(28) Would you be willing to be part of a focus group in the future? During a focus group, you and other survey participants would meet and would be guided through a more detailed discussion about these survey topics. You would be given the chance to provide direct feedback to a moderator, and your answers would help to improve RCHD outreach to the Spanish-speaking population.

- ☐ Yes
- ☐ No

(29) If yes, please provide your preferred way of getting hold of you.

Phone: _____

Email: _____

Other: _____

Thank you for taking our survey

Cuestionario en Español

Departamento de Salud del Condado de Riley (DSCR)

Preparado por: Melitza Ramirez, Sofia Scavone, Amanda Preczewski

09 de Julio 2020

Preguntas para la Población Hispanohablante del Condado de Riley

El cuestionario contiene preguntas sobre tu conocimiento sobre los programas ofrecidos por el Departamento de Salud del Condado de Riley (DSCR), tus intereses con respecto al DSCR y barreras al acceso a servicios y programas. También, queremos tus sugerencias en lo que proveedores de servicios de salud pueden ayudar a mejorar tu experiencia y facilitar tu acceso a servicios de salud en el Condado de Riley. Pasarás entre 15 y 25 minutos para completar el cuestionario. Completar el cuestionario es opcional y puedes omitir algunas preguntas. Tus respuestas son anónimas. Gracias por su participación.

Información demográfica

(1) ¿Cómo te describirías?

■ Género

- ☐ Femenino
- ☐ Masculino
- ☐ Otro

■ Raza

- ☐ Dominicano/a
- ☐ Puertorriqueño/a
- ☐ Mexicano/a
- ☐ Paraguayo/a
- ☐ Cubano/a
- ☐ Salvadoreño/a
- ☐ Peruano/a
- ☐ Otro (especificar): _____

■ Etnicidad

- ☐ Hispánico/a mestizo/a
- ☐ Afrohispánico/a
- ☐ Hispánico/a blanco/a

■ Lenguaje con el cual te sientes más cómodo

- ☐ Español
- ☐ Inglés
- ☐ Otro (especificar): _____

(2) ¿Cuántos años tienes? _____

(3) ¿Cuál es el más alto nivel de educación que has completado?

- ☐ Menos que educación secundaria
- ☐ Una porción de educación secundaria
- ☐ Diploma de educación secundaria o G.E.D.
- ☐ Algunas clases de universidad
- ☐ Licenciatura
- ☐ Maestría/Especialidad
- ☐ Diploma profesional (Derecho, Medicina, etc.)
- ☐ Otro: _____

(4) ¿Estás empleado actualmente? o ¿Tienes un empleo actualmente?

- ☐ Sí
- ☐ No

(5) ¿Cuál es tu carrera u ocupación? _____

(6) ¿Tienes seguro de salud?

- ☐ Sí
- ☐ No

(7) ¿Qué tipo de seguro de salud usas para pagar por la mayoría de los servicios de salud? Por:

- ☐ Tu empleador/a
- ☐ Empleador/a de otra persona
- ☐ Un plan que tú o otra persona compra
- ☐ Medicare
- ☐ Medicaid o Medical Assistance
- ☐ Militar, CHAMPUS, TriCare, o VA
- ☐ Indian Health Service (or Alaska Native Health Service)
- ☐ Otro
- ☐ No tengo seguro de salud
- ☐ No sé
- ☐ No quiero responder

Maneras de recibir salud y información de salud

(8) ¿Qué fuentes usas y confías para informarte sobre asuntos/temas de salud?

- ☐ Doctor u otro profesional del área de salud
- ☐ Departamento de Salud (Condado _____)

Appendix C

- ☐ Familia y/o amigos
 - ☐ Televisión
 - ☐ Internet (sitios web)
 - ☐ Redes sociales
 - ☐ Instituciones educativas
 - ☐ Iglesia, templo, u otra institución religiosa
 - ☐ Otro:
-

(9) Por favor califique (1-5) sus 5 mejores fuentes de confianza donde recibe su información sobre salud. Por favor marque todas las opciones que apliquen.

- ☐ Doctor u otro profesional del área de salud
 - ☐ Departamento de Salud (Condado _____)
 - ☐ Familia y/o amigos
 - ☐ Televisión
 - ☐ Internet (sitios web)
 - ☐ Redes sociales
 - ☐ Instituciones educativas
 - ☐ Iglesia, templo, u otra institución religiosa
 - ☐ Otro:
-

(10) Formato o medio preferido para recibir información de el DSCR.

- ☐ En persona
- ☐ Correo Electrónico
- ☐ Text/Whatsapp/mensaje
- ☐ Llamando a alguien por teléfono
- ☐ Redes sociales
- ☐ El correo
- ☐ Tablón de anuncios
- ☐ Cotilleo/chisme

(11) ¿Cuáles de las siguientes maneras de recibir información de salud no usará? Por favor marque todas las opciones que apliquen.

- ☐ En persona
- ☐ Correo Electrónico
- ☐ Text/Whatsapp/mensaje
- ☐ Llamando a alguien por teléfono
- ☐ Redes sociales

Appendix C

- ☐ El correo
- ☐ Tablón de anuncios
- ☐ Cotilleo/chisme

(12) ¿Cuáles de las siguientes te ayuda a entender y recordar la información de salud que recibes mejor?

- ☐ Lo escuchas
- ☐ Lo lees
- ☐ Lo miras
- ☐ Lo discutes
- ☐ Otro _____

Conocimiento sobre los programas ofrecidos por el Departamento de Salud del Condado de Riley (DSCR)

(13) ¿Cuántas veces has visitado el Departamento de Salud del Condado de Riley (Riley County Health Department)? _____

(14) ¿Conoces los servicios que ofrece el Departamento de Salud del Condado de Riley?

- ☐ Sí
- ☐ No

Si tu respuesta fue “sí”, ¿qué servicios ofrecidos por el Departamento de Salud del Condado de Riley conoces?

Mejorando la conexión con el DSCR

(15) Si alguna vez has visitado el Departamento de Salud del Condado de Riley, ¿volverías a utilizar sus servicios? Si tu respuesta a la primera pregunta fue “sí”, ¿por qué? Favor explicar tus respuestas con el mayor nivel de detalle posible

(16) ¿Cuáles son tus intereses con respecto al DSCR?

- ☐ Examen para detectar cáncer de mamas y cáncer cervical
- ☐ Sondeo para cánceres
- ☐ Licencias para cuidado de niños
- ☐ Clínicas comunitarias: control de presión arterial, vacunas contra la gripe, y otros servicios de sondeos para poblaciones vulnerables en el contexto de sus comunidades, incluyendo sondeos de visión para bebés y niños pequeños.
- ☐ Educación sobre la salud
- ☐ Vacunaciones.
- ☐ Salud maternal e infantil. Clases prenatales para asegurar un embarazo y un bebé saludables; programa de salud maternal e infantil (visitas mensuales, exámenes físicos, ayuda con la lactancia, educación, recomendaciones/derivaciones); visitas a casas con recién nacidos; programas de visitas al hogar. (Todos estos servicios son proveídos gratuitamente. Hay acceso a intérpretes de español.)
- ☐ Prevención y respuesta al uso de opioides
- ☐ Otros servicios clínicos: inyecciones de vitamina B12, detección de piojos, chequeos de presión sanguínea, chequeos de niveles de hemoglobina, tests de anticuerpos para hepatitis B y varicela, exámenes físicos para alumnos (planes de seguros médicos son aceptados)
- ☐ Raising Riley (Criando a Riley): subsidios para el cuidado de niños
- ☐ Raising Riley (Criando a Riley): Alfabetización, visitas a domicilio para apoyar el desarrollo infantil, clases para ser padres, actividades de divulgación de información.
- ☐ Raising Riley (Criando a Riley): Asistencia técnica y desarrollo profesional para los proveedores de cuidado para niños.
- ☐ Servicios médicos reproductivos: Reproductive Health Services: exámenes a mujeres sanas, test de papanicolau, tratamiento para vaginitis, tratamiento para infecciones de levadura/Candida, tests para la detección de infecciones del tracto urinario.
 - Detección de enfermedades de transmisión sexual (ETS)
 - Detección de VIH
 - Tests de embarazo, asesoramiento y derivaciones
 - Nuevo anticonceptivos
 - Educación de salud para adolescentes
 - Ayuda con problemas relacionados con métodos anticonceptivos
 - Inserción y extracción del dispositivo intrauterino (DIU)
 - Inserción y extracción de Nexplanon
 - Colposcopia
 - Procedimiento de escisión electroquirúrgica
 - Tratamiento para enfermedades de transmisión sexual (ETS)
 - Reabastecimiento de píldoras anticonceptivas e inyecciones de Depo-Provera

Appendix C

- ☐ Eliminación de desechos afilados y puntiagudos (agujas de insulina, lancetas, etc.)
- ☐ Servicios de WIC

Por favor explica tu selección de las respuestas de arriba con el mayor detalle posible:

(17) ¿Cuáles son formas que podrían, potencialmente, ayudar a conectarte con el DSCR? Por favor explica tu respuesta con el mayor nivel de detalle posible:

(18) En una escala de 1 a 10 (1 siendo “para nada interesado/a” y 10 siendo “extremadamente interesado/a”), ¿cómo describirías tu nivel de interés para recibir información sobre temas de salud de parte del Departamento de Salud del Condado de Riley? _____(1-10)

(19) En una escala de 1 a 10 (1 siendo “para nada interesado/a” y 10 siendo “extremadamente interesado/a”), ¿cómo describirías tu nivel de interés para utilizar otros servicios de parte del Departamento de Salud del Condado de Riley?
_____(1-10)

Barreras al acceso a servicios y programas

(20) ¿Cuándo fue la última vez que acudiste a un profesional de la salud?

- ☐ Durante el último mes
- ☐ Hace 1-6 meses
- ☐ Hace 7-12 meses
- ☐ Hace más de 1 año
- ☐ Hace más de 5 años

(21) Cómo describes tu salud hoy?

- ☐ Excelente
- ☐ Muy buena
- ☐ Buena
- ☐ Decente
- ☐ Mala

(22) ¿Has pospuesto una visita a un centro de salud en los últimos meses?

- ☐ Sí
- ☐ No

(23) ¿Has experimentado alguna de las siguientes barreras al intentar acceder a servicios de salud para ti o tu familia en el Condado de Riley? Marca más de una opción, si se aplica a tu caso.

- ☐ Falta de tiempo
- ☐ No tener opciones para el cuidado de niños
- ☐ No poder pedir tiempo libre en el trabajo por miedo a pérdida de pago o pérdida de empleo.
- ☐ Otras razones personales. Favor detallar: _____

(24) ¿Has experimentado alguna de las siguientes barreras al intentar acceder a servicios de salud para ti o tu familia en el Condado de Riley? Marca más de una opción, si se aplica a tu caso.

- ☐ El proveedor de servicios de salud no hablaba español (pero había un intérprete disponible).
- ☐ El proveedor de servicios de salud no hablaba español (y no había un intérprete disponible).
- ☐ No sentí que podía confiar en el proveedor de servicios de salud.
- ☐ El proveedor no demostró conocimiento y/o respeto hacia mi cultura.
- ☐ La oficina no era accesible y/o afable/acogedora.
- ☐ La oficina no proveía información (como carteles y panfletos) en español.

Por favor explica con el mayor nivel de detalle tus respuestas de arriba, si puedes. ¿Tienes algunas sugerencias en la que proveedores de servicios de salud pueden ayudar a mejorar tu experiencia y facilitar tu acceso a servicios de salud?

(25) ¿Alguna vez has experimentado alguno de estos tipos de discriminación al intentar acceder a servicios esenciales en el condado de Riley?

Trato discriminatorio por:

- ☐ Raza/etnicidad
- ☐ Mi lenguaje
- ☐ Falta de seguro médico o por el tipo de seguro médico que tengo
- ☐ Inhabilidad de pagar por procedimientos o servicios costosos
- ☐ Otra razón. Favor detallar: _____

(26) Al buscar acceder a servicios de salud u otro servicio esencial en el condado de Riley, ¿has tenido que rechazar o posponer servicios por alguna de estas razones?

- ☐ Los servicios eran demasiado costosos.
- ☐ Los medicamentos eran demasiado caros.
- ☐ El seguro médico no cubría los servicios.
- ☐ Otra razón: _____

(27) Si has experimentado alguna de las dificultades detalladas en la siguiente lista al buscar acceder a servicios de salud en el estado de Riley, favor explicar con el mayor detalle posible

- ☐ Falta de transporte o dificultad para coordinar medio de transporte.
- ☐ Inhabilidad de agendar una cita (ya sea online/por el Internet, al teléfono, en persona, etc.)
- ☐ Inhabilidad de acceder al sitio web u otros recursos porque no existía una versión en español.
- ☐ Inhabilidad de visitar al proveedor de servicios de salud de mi preferencia.

Disposición de participar en grupos focales en el futuro (esta sección se mantendrá separado de la encuesta para que las repuestas de la encuesta puede permanecer anónimas)

(28) ¿Estás dispuesto a participar un grupo focal en el futuro? (1) (Un grupo focal es un grupo de discusión)

- ☐ Sí
- ☐ No

(29) Si tu respuesta fue “sí”, ¿Cuál es la mejor forma para contactarnos contigo?

- ☐ Por teléfono: _____
- ☐ Correo Electrónico: _____
- ☐ Otra forma: _____

Gracias por participar en nuestra encuesta.

Appendix D - Flint Hills Wellness Coalition Hispanic Outreach Presentation

Riley County Hispanic Outreach Survey



Agenda

- Introduce our **team members**.
- Talk about our four **project goals**.
- Summarize the content of the **survey**.
- Show the **survey flyer**.
- Explain **ways in which coalition members can help**.

Team members

Melitza Ramirez
MPH- Emphasis in Physical Activity
Class of 2021

Edward Kalas, MPH, RS
Riley County Health Department
Preceptor

Amanda Preczewski
DVM/MPH- Infectious Diseases and Zoonoses
Class of 2022

Sofia Scavone
MPH - Infectious Diseases and Zoonoses
Class of 2020

Project Goals

- **SURVEY A SAMPLE OF THE RILEY COUNTY SPANISH-SPEAKING POPULATION**
to determine needs, barriers to access, and awareness of health department-related services as well as other essential services.
- **IDENTIFY KEY RESOURCES IN RILEY COUNTY**
as well as evaluate websites for Spanish accessibility.
- **IDENTIFY EVIDENCE-BASED PRACTICES FOR EFFECTIVE COMMUNICATION WITH NON-ENGLISH SPEAKING POPULATIONS**
by reading journal articles and contacting other health departments in Kansas.
- **DEVELOP RECOMMENDATIONS TO IMPROVE COMMUNICATION WITH LIMITED-ENGLISH PROFICIENCY (LES) POPULATIONS**
by using survey data and information regarding evidence-based practices.

Survey in Spanish

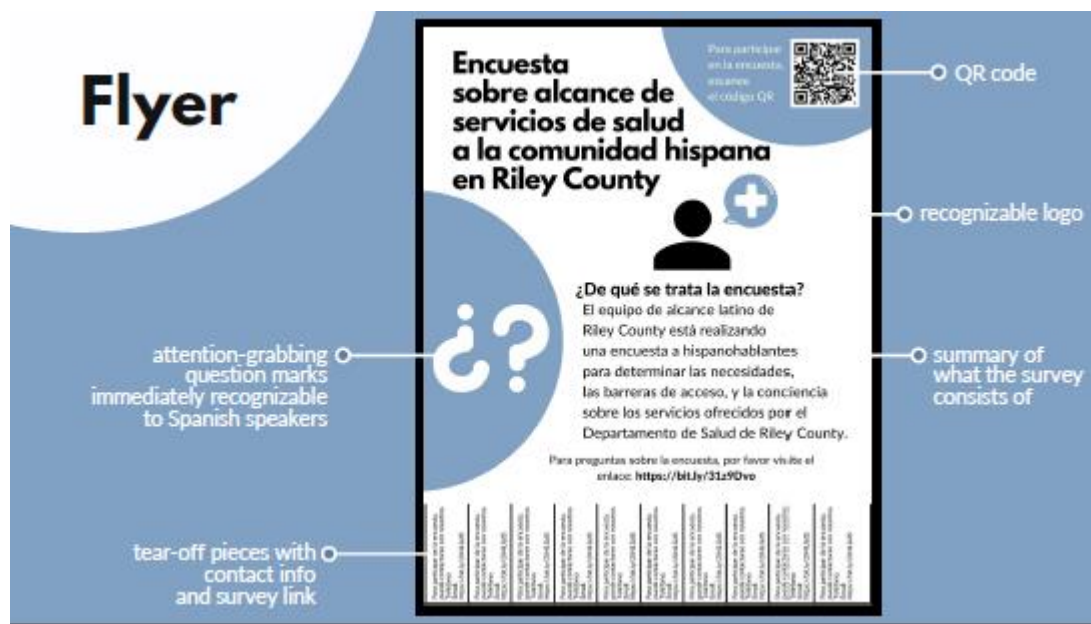
CONTENT:

- Needs
- Barriers
- Past experiences
- Awareness of services

FORMAT:

- Online via Qualtrics
- By telephone
- (Potentially) in person





How you can help

- Take the survey.
- Distribute our physical or virtual flyers.
- Spread awareness about our project.

We would love to hear from you!
Email: scavones@ksu.edu

Appendix E - Hispanic Outreach Project Presentation (created by Ramirez and Scavone)

Riley County Hispanic Outreach Survey

**RESULTS and
TAKEAWAYS**



An overview of the survey

- **SURVEY OPENED ON AUGUST 26 AND CLOSED ON OCTOBER 19**
allowing for a total of 54 days to complete it
- **TOTAL NUMBER OF QUESTIONS = 33**
- **WE INFORMED POTENTIAL PARTICIPANTS VIA**
physical flyers in various Manhattan locations and social media posts

Survey results (part 1 of 4)

DEMOGRAPHICS

- Countries of origin of most participants: Mexico (20), Paraguay (7), and Puerto Rico (3)
- 46 participants in total, of which 16 filled the survey in its entirety.
- Among the 16 participants who finished completing the survey:
 - the age average was 30 years old.
 - there were 13 women and 3 men.
 - 8 were students, 8 were not students.
 - the average time it took to fill out the whole survey was 22.5 minutes.
 - the shortest time to complete the survey was 5 minutes, while
 - the longest time was 80 minutes.

Survey results (part 2 of 4)

AWARENESS OF RCHD PROGRAMS

The RCHD services that participants were most familiar with were:

- vaccinations
- and
- dental care



Survey results (part 3 of 4)

IMPROVING RELATIONSHIP WITH THE RCHD

The best ways to improve the relationship between the RCHD and the Hispanic community in Riley County, according to survey takers:

- more **RCHD promotion** around town
- hosting **virtual events**
- more **information in Spanish** about services



Survey results (part 4 of 4)

BARRIERS TO SEEKING HEALTH CARE

Main barriers cited by survey takers:

- lack of child care options
- lack of money
- health insurance which didn't cover medication/procedure



Appendix F - Essential Veterinary Outreach Risk Assessment

PROVIDING ESSENTIAL VETERINARY OUTREACH AMID A PANDEMIC

A QUALITATIVE RISK ANALYSIS



GOAL

- To assess the likelihood and severity of infectious disease-related risks associated with providing veterinary care in a community outreach setting and develop mitigation strategies that align with current public health guidance

WHY THIS MATTERS

- Veterinary care is essential to public health
- How is this population also impacted by the ongoing pandemic? Possibly less income, fewer options for affordable vet care, reprioritizing budgets
- Evictions are increasing at this time.

WHY THIS MATTERS

According to the [U.S. Census](#), 25.86% of the adult renters in Missouri have no or slight confidence in their ability to make next month's rent payment.

Since the CDC eviction moratorium was enacted, there has been an average of **75 filings every week** in Kansas City, Missouri, according to Princeton University's [Eviction Lab](#).

According to the [U.S. Census](#), 26.52% of the adult renters in Kansas have no or slight confidence in their ability to make next month's rent payment.

According to the [U.S. Census](#), 10% of adults in Kansas either missed last month's housing payment or have little to no confidence that they can pay next month's housing payment.

Source: <https://nlhc.org/coronavirus-and-housing-homelessness/eviction-update>

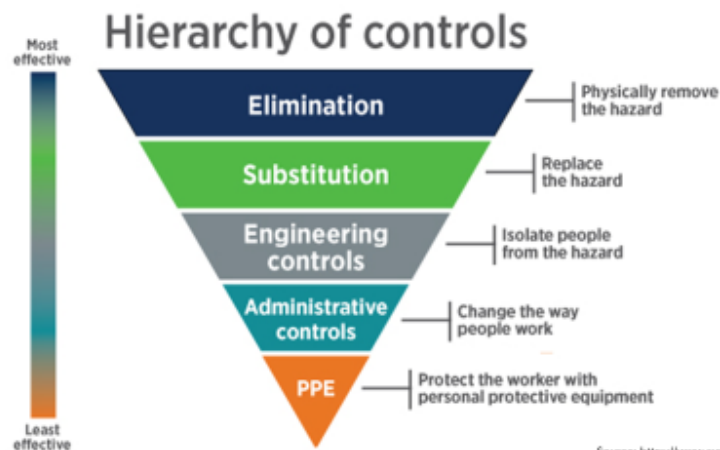
RISK MANAGEMENT FRAMEWORK

- Risk Assessment
- Risk Mitigation
- Risk Communication

RISK ASSESSMENT: HAZARD IDENTIFICATION

- 1- Staff member contracts COVID-19 from exposure to client
- 2- Staff member contracts COVID-19 from exposure to coworker
- 3- Staff contracts COVID-19 from exposure to pet
- 4- Client contracts COVID-19 from exposure to staff
- 5- Client contracts COVID-19 from exposure to other clients/facility

RISK MITIGATION: AVMA RISK MANAGEMENT GUIDANCE



RISK MITIGATION: PRACTICAL WORKPLACE EXAMPLES TO REDUCE EXPOSURE (AVMA)

- **Medium Risk of Exposure:** close contact with people who may be infected but are not known or suspected to have COVID-19 (AVMA, 2020)
 - Describes the majority of veterinary operations
- **Controls for Risk Mitigation**
 - **Engineering Controls:** physical barriers
 - **Administrative Controls:** PPE, minimize contact between staff and with clients, restrict client access to the treatment area, concierge service to minimize face to face contact, telemedicine (ipads?) for client/vet communication, leash exchange,
 - **PPE:** gloves, mask, face shield, +/- gown

Source: <https://ebusiness.avma.org/files/coronavirus/COVID-19-Resuming-Practice-Operations-Booklet.pdf>

RISK MITIGATION-ENGINEERING CONTROLS



Physical Barriers

- Designated check-in area and waiting area → Separation between clients and veterinary personnel
- Use of a table for pet handoff area → establishes area that can and should be frequently disinfected
- Shelter Medicine mobile unit for all patient exams → physical separation of staff from public; can be disinfected between patients

Source: <https://ebusiness.avma.org/files/coronavirus/COVID-19-Resuming-Practice-Operations-Booklet.pdf>

RISK MITIGATION-ADMINISTRATIVE CONTROLS



Administrative Controls

- Screening questions for staff and clients – +/- temperature checks
- Managing flow of clients – schedule appointments in advance, Sign in and receive a time to come back for walk-ins, hand out numbered tickets so that patients don't wait in a line
- Designated waiting area for clients
- Minimize contact between staff and with clients (one or two designated check-in volunteers with contact with public)
- Concierge service to minimize face to face contact
- Leash exchange at check-in
- Restrict client access to the treatment area
- Telemedicine (ipads?) for essential client/vet communication

Source: <https://ebusiness.avma.org/files/coronavirus/COVID-19-Resuming-Practice-Operations-Booklet.pdf>

RISK MITIGATION – PPE /BIOSECURITY



- **PPE: required for staff and clients**
 - Staff - gloves, mask, face shield, +/- gown
 - Clients – mask
 - Require frequent handwashing
 - Disinfect equipment and surfaces between clients
 - Disinfect client waiting area between clients

Source: <https://ebusiness.avma.org/files/coronavirus/COVID-19-Resuming-Practice-Operations-Booklet.pdf>

RISK COMMUNICATION

- Advertise COVID protocols on event flyers/communication
- Post signage for clients and staff during event
 - Occupancy limits
 - Social distancing markers
 - Cleaning procedures/ reminders
 - PPE requirements
 - Screening questions/instructions for clients with symptoms

CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Shelter Medicine Clinical Rotation
- Prairie Paws Microchip Clinic

CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Shelter Medicine Clinical Rotation
 - 3-6 students at a time
 - More than 20 partnerships across region
 - Staff team of 6
 - New Vehicle!



CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Shelter Medicine Clinical Rotation
 - Suspended services in March 2020
 - Resumed in June 2020 with protocols
 - Eliminate student contact w/shelter
 - Eliminate lunches
 - Eliminate out of state trips
 - Pre-work day screening
 - PPE



CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Shelter Medicine Clinical Rotation
 - Suspended services in March 2020
 - Resumed in June 2020 with protocols
 - Have had 2 isolated positive cases since resumption
 - No spread during either event.



CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Prairie Paws Microchip Clinic
 - October 2020, Ottawa, KS
 - Clients served: 175
 - Preventative Measures/Impact/Lessons Learned
 - Drive Thru/Walk up



CURRENT EXAMPLES - KSU SHELTER MEDICINE RISK MITIGATION STRATEGIES

- Prairie Paws Microchip Clinic
 - October 2020, Ottawa, KS
 - Clients served: 175
 - Preventative Measures/Impact/Lessons Learned
 - Drive Thru/Walk up

Personnel:

2-3 Prairie Paws staff/volunteers (1-2 Reception, 1 Chip registration)

8-10 KSU representatives (3-4 Administration pairs, 1-2 Floaters)

Chipping Stations: 2 per trailer (if needed), and 2 per tent.

Supplies needed: Tent (x2), scanners, clipboards, pens.

Protocol-

1. All staff & volunteers will wear masks and gloves. Gloves will be changed between patients/clients.
2. Clients will pull into parking spot.
3. Reception will approach vehicle and give client paperwork to fill out.
4. When administration pair is ready for a patient they will inform reception.
5. Once paperwork is complete, reception will escort pet from vehicle to available administration pair. Client will remain in vehicle.
6. Once chip is implanted, preventative can then be given to patient based on species, size and acceptable product.
7. Once medication is administered, remainder of product package and microchip paperwork along with animal will be given back to reception.
8. Reception will return animal to vehicle with waiting client.
9. Reception will deliver paperwork to registration.
10. Administration pairs will sanitize pens and clipboards between clients.

CVO EXAMPLES

- Suggestions for veterinary services:
 - Minimize Volunteers
 - PPE
 - Minimize client contact
 - Designated reception
 - Only pet travels through service stations
 - Ipad for client communication
- Can aid in tailoring a specific protocol
- Suggestions for other services:
 - Individualized for each service

COVID GUIDANCE/RESOURCES

- <https://www.cdc.gov/coronavirus/2019-ncov/community/veterinarians.html>
- <https://www.maddiesfund.org/assets/webcasts/covid-control-strategies-presentation-slides.pdf>
- <https://www.avma.org/resources-tools/animal-health-and-welfare/covid-19/mobile-house-call-veterinarians-covid19-pandemic>
- <https://www.maddiesfund.org/mcc-covid-control-strategies-maintaining-safety.htm>
- <https://www.ontariosheltermedicine.org/covid-19-recovery-toolkit/>
- <https://sheltermedicine.vetmed.ufl.edu/covid-19-resources/covid-19-management-animal-shelters/>
- <https://www.maddiesfund.org/covid-19-emergency-foster-care-resources.htm>
- <https://ebusiness.avma.org/files/coronavirus/COVID-19-Resuming-Practice-Operations-Booklet.pdf>
- <https://www.avma.org/resources-tools/animal-health-and-welfare/covid-19/protecting-your-veterinary-team-during-pandemic>