



# Barriers to Disease Reporting in Johnson County, Kansas

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*A Survey of Healthcare Professionals*

Johnson County Department of Health and Environment

## Table of Contents

|   |                   |
|---|-------------------|
| <b>Background .....</b>                             | <b>2</b>          |
| <b>Survey Goals .....</b>                           | <b>4</b>          |
| <b>Key Concepts.....</b>                            | <b>4</b>          |
| <b>Survey Design.....</b>                           | <b>4</b>          |
| <b>Response Rate.....</b>                           | <b>6</b>          |
| <b>Data Analysis.....</b>                           | <b>7</b>          |
| <b>Results .....</b>                                | <b>7</b>          |
| <b>Discussion .....</b>                             | <b>8</b>          |
| <b>Recommendations .....</b>                        | <b>9</b>          |
| <b>Personal Thoughts During The Internship.....</b> | <b>10</b>         |
| <b>Works Cited.....</b>                             | <b>11</b>         |
| <br>  |                   |
| <b>Recruitment Letter .....</b>                     | <b>Appendix 1</b> |
| <b>Questionnaire (Paper and Pencil).....</b>        | <b>Appendix 2</b> |
| <b>Kansas Notifiable Disease List.....</b>          | <b>Appendix 3</b> |
| <b>Postcard .....</b>                               | <b>Appendix 4</b> |
| <b>Statistical Tables.....</b>                      | <b>Appendix 5</b> |
| <b>Responses to Open Ended Questions .....</b>      | <b>Appendix 6</b> |

## Background

### *Practice of Communicable Disease Reporting in the US*

“Surveillance is the systematic and continuous collection, analysis interpretation and dissemination of health related data (Porta, 2008).” By providing timely information, surveillance empowers public health officials to make evidence based decisions (Stephen Thacker, 2012). Communicable disease surveillance and reporting is an important piece of the broader public health surveillance system. This started in 1878 when the Public Health Service was authorized by congress to collect morbidity information for smallpox, yellow fever, cholera, and the plague. (Emily Sickbert-Bennett, 2011). Since then, public health officials have been authorized to conduct much broader surveillance for a series of communicable and non-communicable diseases and conditions (Division of Notifiable Diseases and Healthcare Information, 2012). Historically, states have mandated the diseases that are reportable to public health officials. In Kansas, public health officials conduct surveillance for 56 communicable diseases and conditions (Appendix 3 – Reportable Diseases in Kansas).

Communicable disease surveillance can be broken into three levels, based on the level of government that performs the duties. Local health departments are the first line of defense against communicable diseases. Local health care providers and laboratories are mandated by law to report certain diseases to these agencies. Local health departments then work to assure that the correct diagnosis, treatment and isolation of cases is accomplished as well as prophylaxis and quarantine of susceptible contacts (Lisa Lee, 2010). State health departments provide the next level of protection. State health departments have three primary duties: 1) to monitor, assist and ensure an adequate level of surveillance at the local level; 2) to identify inter-jurisdictional clusters and coordinate response; and 3) to obtain necessary resources to ensure for disease control and prevention activities throughout the state, including immunization programs (Lisa Lee, 2010). The final level of surveillance takes place at the national or federal level of government, primarily through the Centers of Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists (CSTE). These agencies work to track disease nationwide and coordinate response to multistate outbreaks (Lisa Lee, 2010). These agencies also characterize the epidemiology of disease; conduct vaccine efficacy studies and work to develop national policy with regard to communicable disease control (Lisa Lee, 2010).

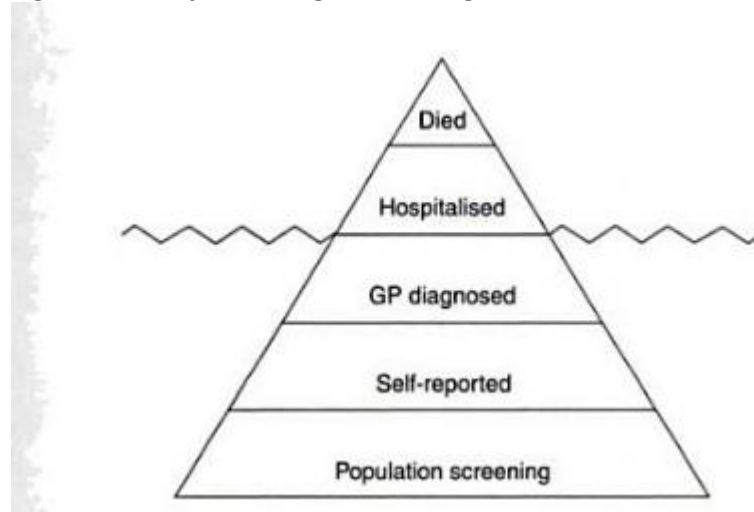
### *Challenges and Opportunities to Communicable Disease Reporting*

Surveillance is strongest when information is disseminated effectively and efficiently throughout the public health system (Irene Hall, 2012). Surveillance systems must be flexible, so to handle the breadth of health information that is reported. Reporting too late or not at all can lead to outbreaks that go unnoticed, can spread to multiple regions and even to new or

emerging diseases entering the United States from foreign countries. All of these consequences can impede the ability of public health officials to control outbreaks when they are identified.

Technology can and should be used to ensure that the right information is quickly, easily and completely reported to public health officials and to help store, manage and analyze the vast amount of data that is reported (Irene Hall, 2012). This technology can help identify, respond to and halt outbreaks before they become widespread. However, technology is not a panacea. Gaps in the system as well as human error can lead to diseases remaining unreported and prevention measures not being implemented. Epidemiologists call this concept the “iceberg effect” where only the most severe cases become apparent, are reported and responded to by public health officials (Figure 1) (Woodward, 2005). Communicable disease reporting is also reliant on astute and knowledgeable clinicians identifying and reporting diseases to public health officials. Surveillance systems and technology should enhance reporting, not act as a barrier. Information needs to be easy to report, access, store and transfer between health departments, hospitals and others that need the information to make public health decisions (Stephen Thacker, 2012).

**Figure 1: The Epidemiological “Iceberg Effect”**



### *Communicable Disease Reporting at the Johnson County Department of Health and Environment*

Health care providers in Kansas are mandated to report any suspect, probable and confirmed cases of reportable diseases within the required time frame to the local or state health department (KAR 28-1-2). This can be done by faxing a reportable disease form or by making a phone call to either agency. The state health department will notify the local health department if they receive a report. Once notified, disease investigation specialists enter the report into an online disease surveillance system called EpiTrax. The disease investigation

specialists then collect additional information from the health care providers and patients, as necessary, so to inform decisions about disease control efforts. This information is collected from medical charts and laboratory tests, as well as interviews with clinicians and patients. After the information has been collected and disease control measures implemented, the local health department closes the case and the Kansas Department of Health and Environment (KDHE) can finalize the work and submit it to CDC.

## Survey Goals

Public health officials for the Johnson County Department of Health and Environment (JCDHE) believe that diseases are going unreported or that there is a lag time in reporting diseases. The JCDHE decided to investigate this phenomenon using a survey of health care providers in the county to identify barriers to reporting and ways to help improve the quality of the program.

The primary focus of this survey

- Was to ascertain the knowledge, attitudes and behaviors of the healthcare community in Johnson County, Kansas with respect to communicable disease reporting.
- This was done to evaluate current practice as well as opportunities for improvement, from the perspective of healthcare providers and other communicable disease reporting system partners.
- The JCDHE is dedicated to improving the quality of all practices and programs. Participatory systems based approaches, such as this survey, are key components for managing change and improving quality.
- The survey provides a baseline of information with which the JCDHE can use to identify strategic opportunities for improvement.

## Key Concepts

This study examined two key concepts: 1) how healthcare providers view the current communicable disease reporting system and how this affects the frequency of reporting and 2) what healthcare providers believe the JCDHE could do to improve the quality and value of the communicable disease reporting system.

## Survey Design

### *Target Population and Sampling*

The target population was made up of all physicians, hospital infection control specialists, laboratories, retail clinics and jails residing within Johnson County, Kansas. A random sample was used to select physicians (Figure 2: Sample Size Determination); a census was used for all

other categories (Table 1: Sampling Methods and Sample Size). Sampling frames came from one of two sources that were based on the category. Physicians were identified through the website - <http://kcdocs.com/> and selecting the physicians residing in Johnson County, Kansas. Sampling frames for the other categories were based from the JCDHE’s contact lists that are routinely updated.

**Figure 2: Sample Size Determination**

|   |   |
|---|---|
| <p><b>Step 1: Parameters</b></p> <ul style="list-style-type: none"> <li>- Total Number of Physicians = 785</li> <li>- Confidence Level = 80%</li> <li>- Precision = ±5%</li> <li>- Degree of Variability = 50%</li> </ul> | <p><b>Step 2: Sample Size Calculation</b></p> $n_0 = \frac{(1.282^2) * (0.5 * 0.5)}{0.05^2} = 165 \text{ physicians}$ |
| <p><b>Step 3: Finite Sample Size Correction</b></p> $n = 165 / (1 + \frac{165 - 1}{785}) = 136 \text{ Physicians}$  | <p><b>Step 4: Correction for 90% Response Rate</b></p> $136 * 1.1 = 150 \text{ physicians}$                           |

**Table 1: Sampling Methods and Sample Size**

| Category                      | Sampling Method | Total Population | Sample Size |
|-------------------------------|-----------------|------------------|-------------|
| Physicians                    | Random Sample   | 785              | 150         |
| Infection Control Specialists | Census          | 17               | 17          |
| Laboratories                  | Census          | 15               | 15          |
| Detention Centers             | Census          | 1                | 1           |
| Retail Clinics                | Census          | 13               | 13          |

*Data Collection Modes*

Three data collection modes were used and were implemented through a three step process.

First, all potential respondents were sent a recruitment letter, a paper questionnaire, the Kansas Notifiable Disease List and a self-addressed stamped envelope in the mail (Appendix 1 – 3). A link to a web-based survey was also included in the letter. Potential respondents were asked to complete the survey online or to complete the paper version and mail or fax it back to the JCDHE. Respondents were tracked using a unique access code that was provided on both the recruitment letter and questionnaire.

After two weeks, a postcard was sent to all non-respondents to prompt them to complete the survey (Appendix 4). Finally, a week after sending the postcard a JCDHE staff member began following up with all non-respondents via telephone and a telephone interview was conducted.

Telephone interviews took place over a two week period and all non-respondents were followed up with twice, or until an expressed refusal was given.

All data was entered into the web based system for storage and management regardless of the data collection mode.

## Response Rate

Disposition codes were assigned to respondents after follow-up was completed (Table 2). Two response rate calculations were used. The first (Response Rate 1) refers to the proportion of respondents that completed the survey, divided by all individuals recruited; stratified by category. The second (Response Rate 2) refers to the proportion of respondents that completed the survey, divided by all eligible respondents (i.e. those that practiced in Johnson County); stratified by category.

The difference between response rate 1 and 2 can be conceptualized as the level of performance improvement possible if the sampling frame was 100% accurate.

**Table 2: Disposition Codes**

| Category               | Code | Description                             |
|------------------------|------|---|
| Eligible, Returned     | 1    | Complete                                |
| Eligible, Not Returned | 2    | Refused to complete                     |
| Ineligible             | 3    | Does not practice in Johnson County     |
| Unknown Eligibility    | 4    | No response and could not be contacted. |

**Table 3: Response Rate Calculations**

| Category                      | Eligible, Returned | Eligible, not returned | Ineligible | Unknown Eligibility | Response Rate 1* | Response Rate 2 <sup>‡</sup> |
|-------------------------------|--------------------|------------------------|------------|---------------------|------------------|------------------------------|
| Physicians                    | 74                 | 42                     | 33         | 1                   | 49.3%            | 63.3%                        |
| Infection Control Specialists | 15                 | 2                      | 0          | 0                   | 88.2%            | 88.2%                        |
| Laboratories                  | 4                  | 3                      | 6          | 2                   | 26.7%            | 44.4%                        |
| Detention Centers             | 1                  | 0                      | 0          | 0                   | 100.0%           | 100.0%                       |
| Retail Clinics                | 3                  | 10                     | 0          | 0                   | 23.1%            | 23.1%                        |

\* Response Rate 1 =  $1 \div (1 + 2 + 3 + 4)$ <sup>‡</sup> Response Rate 2 =  $1 \div (1 + 2)$

## Data Analysis

Data was exported from the online survey tool into a Microsoft Excel spreadsheet, and then into Stata version 11 statistical software where all data management and analysis was completed (StataCorp, 2009). Data was set as survey data using the `svyset` command because sampling was done without replacement (Table 4: Data for `svyset` command).

Proportions and 80% confidence intervals were calculated for each answer by physicians and hospital infection control specialists. Confidence intervals were not calculated for the other categories. A frequency table was constructed showing how physicians that answered “yes” or “no” to selected questions differed with regard to reporting frequency. Reporting frequency was reduced to “physicians that report all or most of the time” and those that report less frequently than that. Statistically significant differences were determined by examining confidence intervals for overlap.

**Table 4: Data for `svyset` command**

| Category          | Population | Sample Size<br>(Returned Surveys) | Probability<br>Weight | Finite Population<br>Correction |
|-------------------|------------|-----------------------------------|-----------------------|---------------------------------|
| Physicians        | 785        | 74                                | 0.09                  | 0.95                            |
| Retail Clinics    | 13         | 3                                 | 0.23                  | 0.91                            |
| Hospitals         | 17         | 15                                | 0.88                  | 0.35                            |
| Detention Centers | 1          | 1                                 | 1.00                  | N/A                             |
| Labs              | 6          | 4                                 | 0.67                  | 0.63                            |

## Results

Results are presented in Appendix 5 through 7. Appendix 5 presents the proportion answering “yes” for each question, stratified by the category of the respondent. Appendix 6 presents the proportion of physicians that report all or most diseases based on their answer to selected questions. Eighty Percent confidence intervals were calculated for all measures. Appendix 7 presents textual answers to open ended questions.

A majority of the respondents reported seeing at least one reportable disease case. Thirteen percent of physicians that responded stated that they had never had a patient with a reportable disease – most were pulmonary doctors. Eighty-seven percent of physicians and 100% of hospital infection control specialists, jail staff and laboratory staff state reporting all or most of the time; two of the three retail clinics stated this. Most respondents stated that lab confirmation would make them more likely to report a disease – answering yes to this question



was associated with a greater degree of reporting. More respondents report to the local health department compared to the state health department. More physicians stated reporting to the local health department by phone than by fax. More infection control specialists stated faxing reports to the local health department compared to using the phone. Most hospital infection control specialists report to the state health department as well. Laboratories stated that they report to the state health department, not the local health department. Open ended remarks stated that there is confusion with which agency to report communicable diseases to.

Most respondents did not report a barrier to disease reporting, however the most frequently cited barriers were: 1) they do not know what diseases to report, 2) reporting is too time consuming, and 3) it is too much work. Doctors that stated “yes” to these questions were significantly less likely to report diseases all or most of the time compared to those without these views. Only half of the physicians thought the process was convenient, compared to 73% of infection control specialists. One complaint cited was “being on hold” and “playing phone tag.”

Most respondents cited the fax machine as their preferred method for reporting diseases. There was substantial interest in a web based reporting form from members of each category. About half of respondents would like the procedure simplified and some wanted multiple ways to report a disease. There was a substantial number that wanted education and feedback about disease reporting. Surprisingly, more respondents cited mail as a preferred way to receive information from the JCDHE. This was cited more frequently than email, the JCDHE website and social media. Nearly half of infection control specialists cited meetings as a way to receive information from the JCDHE.

## Discussion

This survey provides a base of information, with which the process of improving disease reporting in Johnson County can begin. A majority of healthcare providers stated that they do report communicable diseases all or most of the time. However, many stated that they do not know what diseases to report, when to report them and who to report them to. These statements are in obvious disagreement. Most healthcare providers stated that laboratory confirmation would make them more likely to report. Fewer healthcare providers were influenced to report diseases by characteristics of the disease or community spread. This may mean that confirmation is the biggest driver for reporting, but public health officials aim to address spread among suspect and probable cases. Reporting only confirmed cases limits the ability to do this.

Many healthcare providers stated that the reporting process was too complex, time consuming or hard. Some specifically stated how much time they have to spend on the phone, either from

being on hold or not being able to reach the correct public health official, except through voice mail as barriers to reporting. This is a problem that public health communicable disease investigators also experience. Developing a system that automates data collection and allows it to be done asynchronously may alleviate this. Care would have to be taken to assure confidentiality and continuity of communication.

Healthcare providers also reported confusion with how to report diseases and some stated wanting education and feedback about the disease reporting process, as well as about outbreaks occurring in the community. The need for education and information will only increase if the JCDHE implements changes to the local reporting procedure. More health care providers cited mail as the best way to receive information about communicable disease reporting and outbreaks. The JCDHE publishes a monthly newsletter, which may meet this need, but it is disseminated via the JCDHE website and email. Printing this and sending it throughout the healthcare system may be a good method to improve communications between the JCDHE and healthcare providers.

## Recommendations

There are four primary recommendations that can be made based, in part, from the results of this survey and the work done preparing the report. They all flow into or out of developing an online suite of tools for disease reporting, and include:

1. Develop a web-based tool for reporting communicable diseases. This could be modeled after the *Dispense Assist* system. The reporting tool should be more than just a web representation of the basic communicable disease form and should include a broader, disease specific list of questions, as well as a way for health care providers to provide additional information asynchronously.
2. Change communicable disease reporting materials (fact sheets, list of Notifiable diseases, etc.) to be JCDHE specific and more user friendly. This should be incorporated with the development of the website.
3. Identify all physicians in Johnson County and regularly ensure the accuracy of the list.
4. Develop training, education and informational materials for specific health care audiences. This may help build interest and buy-in from the health care community. According to this survey, a mailed newsletter may be appropriate, as well as meetings. YouTube videos may be a good tool to provide training for communicable disease reporting.
5. Identify performance measures and monitor them. It will not be possible to measure the ratio of reported diseases to all diseases – even though improving this is the goal of this project. Performance measures could be based on Healthy People 2020 goals and

objectives, under the auspice that improving reporting will improve disease control. Additional brainstorming is required for this recommendation.

## Personal Thoughts During The Internship

- In the real world everything does not work perfectly
  - You do not have all the information at your fingertips. There was not a contact book for the doctors to be able to get a hold of them. Then when you try to get a hold of them it becomes a game of being on hold.
- Surprised by the lack of knowledge of the reportable disease process from healthcare providers
  - Even though it is the healthcare professionals job most do not know it is the law to report all suspect cases and most do not know all the disease to report.
- The system needs a structure change, it should not be every county reporting but it should be regional reporting
  - Johnson County is the biggest and richest county in Kansas and they have trouble reporting all the diseases. How can a poor county with no money and part time works report any? It should be regional to make up for this.
- Only two – three people do most of the reporting for the county
  - The work force for the county is understaffed.
- The State and Counties need a system change. There's too much overlap and too many cases going unnoticed
  - Too many times each department is filling out the same report then to find out the other department has done it. Some reports are partially filled leaving the other department in the dark about the case.
- Finally, you cannot have people who do not know about public health (i.e. Congressmen) making the decisions or it does not run effectively.

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## Appendix 1: Recruitment Letter

Dear [Name]

Communicable disease reporting is vital for planning and evaluating disease prevention programs as well as ensuring that outbreaks are identified and contained. The agency you work for is a crucial stakeholder in this system.

Your organization is part of the communicable disease reporting system in Johnson County. The Johnson County Department of Health and Environment wants to know what you think about the disease reporting system in order to improve its performance and value. Hearing from you ensures that results are valid so it is vital that you complete the questionnaire.

The questionnaire can be accessed online at <http://tinyurl.com/JCDHE-DisRep1>. Another option is to complete the enclosed questionnaire and mail it back using the self-addressed, stamped envelope or fax it to us at (913) 826-1300.

Thank you for your participation in this project.

Sincerely,

Lougene Marsh  
Director  
Johnson County Department of Health and Environment

## Appendix 2: Questionnaire (Paper and Pencil & Link to Web)

### Communicable Disease Reporting Survey Johnson County Department of Health and Environment

#### Instructions

- To complete the survey online, go to <http://tinyurl.com/JCDHE-DisRep1> and enter your access code [Access Code].
- Please select only one answer unless otherwise instructed.
- Check the box to select your answer.
- Instructions are italicized and colored red.
- Questions and answers are in black.

1. Have you ever had a patient with a suspected reportable disease?

Yes.....

No.....  → *Skip to question 8*

2. When you suspect a reportable disease how often do you report to the health department?

I always report (≈100%).....

I report most of the time (≈75%).....

I report some of the time (≈50%).....

I almost never report (≈25%).....

I never report (≈0%).....

3. What makes you more likely to report a disease to the health department? (*Check all that apply*)

Lab confirmation.....

There is an outbreak occurring.....

It is highly communicable.....

It is severe in terms of morbidity.....

It is severe in terms of mortality.....

Other (*write in*) \_\_\_\_\_

4. How do you report diseases to the health department? (*Check all that apply*)

Phone call to the local health department.....

Fax to the local health department.....

Phone call to state health department.....

Fax to state health department.....

Other (*write in*) \_\_\_\_\_

5. What barriers are there to reporting diseases to the health department? *(Check all that apply)*

- Do not want to violate the patient's trust .....
- Too much work .....
- Too time consuming .....
- Do not know what diseases to report .....
- Do not know when to report diseases.....
- No reward or penalty for reporting .....
- I thought it was someone else's responsibility....
- Other *(write in)* \_\_\_\_\_

6. Is the current reporting system convenient?

- Yes.....
- No.....
- Don't know.....
- No Opinion.....

7. How would you prefer to report diseases to the health department? *(Check all that apply)*

- Phone call.....
- Fax.....
- Email .....
- Submit report via a web form.....
- Other *(write in)* \_\_\_\_\_

8. What would increase the likelihood that you would report diseases? *(Check all that apply)*

- Multiple reporting avenues .....
- Simplify reporting procedure.....
- Incentive for reporting.....
- Penalty for not reporting .....
- Education about disease reporting.....
- Feedback about disease reporting .....
- Report through the internet .....
- Other *(write in)* \_\_\_\_\_

9. How would you like to receive information from the Johnson County Department of Health and Environment? *(Check all that apply)*

JCDHE website .....

Social media .....

Mail .....

Fax .....

Presentations .....

Meetings .....

Email *(write in)* \_\_\_\_\_

10. How long have you been in practice?

1 – 2 years .....

3 – 5 years .....

6 – 10 years .....

More than 10 years .....

*Thank you for completing the survey. Please fax this to the Johnson County Department of Health and Environment at (913) 826-1300 – Attention Kevin Kovach. You can also mail it using the enclosed self-addressed stamped envelope.*

Follow this link to access the web based survey: <http://tinyurl.com/JCDHE-DisRep1>



## Appendix 3: Reportable Diseases in Kansas

REPORTABLE DISEASES IN KANSAS for health care providers, hospitals, and laboratories  
(K.S.A. 65-118, 65-128, 65-6001 - 65-6007, K.A.R. 28-1-2, 28-1-4, and 28-1-18. Changes effective as of 4/28/2006)

**☎** - Indicates that a telephone report is required by law within four hours of *suspect or confirmed* cases to KDHE toll-free at 877-427-7317

**①** - Indicates that an isolates must be sent to: Division of Health and Environmental Laboratories  
Forbes Field, Building #740, Topeka, KS 66620-0001  
Phone: (785) 296-1633

|  |  |
|--|--|
| Acquired Immune Deficiency Syndrome (AIDS)   | <i>Measles (rubeola)</i> ☎   |
| Amebiasis  | <i>Meningitis, bacterial</i> ☎   |
| <i>Anthrax</i> ☎   | <i>Meningococemia</i> ①☎   |
| Arboviral disease (including West Nile virus, Western Equine encephalitis (WEE) and St. Louis encephalitis (SLE)) - indicate virus whenever possible | <i>Mumps</i> ☎   |
| <i>Botulism</i> ☎  | <i>Pertussis (whooping cough)</i> ☎  |
| Brucellosis  | <i>Plague (Yersinia pestis)</i> ☎  |
| Campylobacter infections   | <i>Poliomyelitis</i> ☎   |
| Chancroid  | Psittacosis  |
| <i>Chlamydia trachomatis</i> genital infection   | <i>Q Fever (Coxiella burnetii)</i> ☎   |
| <i>Cholera</i> ☎   | <i>Rabies, human and animal</i> ☎  |
| Cryptosporidiosis  | Rocky Mountain Spotted Fever   |
| Cyclospora infection   | <i>Rubella, including congenital rubella syndrome</i> ☎  |
| Diphtheria   | Salmonellosis, including typhoid fever ①   |
| Ehrlichiosis   | <i>Severe Acute Respiratory Syndrome (SARS)</i> ①☎   |
| <i>Escherichia coli O157:H7</i> (and other shiga-toxin producing <i>E. coli</i> , also known as STEC) ①  | Shigellosis ①  |
| Giardiasis   | <i>Smallpox</i> ☎  |
| Gonorrhea  | Streptococcal invasive, <del>drug-resistant</del> disease from Group A <i>Streptococcus</i> or <i>Streptococcus pneumoniae</i> ① |
| <i>Haemophilus influenzae</i> , invasive disease   | Syphilis, including congenital syphilis  |
| Hantavirus Pulmonary Syndrome  | Tetanus  |
| Hemolytic uremic syndrome, postdiarrheal   | Toxic shock syndrome, streptococcal and staphylococcal   |
| Hepatitis, viral (acute and chronic)   | Transmissible Spongiform Encephalopathy (TSE) or prion disease (includes CJD)  |
| Hepatitis B during pregnancy   | Trichinosis  |
| Human Immunodeficiency Virus (HIV) (includes Viral Load Tests)   | <i>Tuberculosis, active disease</i> ①☎   |
| Influenza deaths in children <18 years of age  | Tuberculosis, latent infection   |
| Legionellosis  | Tularemia  |
| Leprosy (Hansen disease)   | Varicella (chickenpox)   |
| Listeriosis  | <i>Viral hemorrhagic fever</i> ☎   |
| Lyme disease   | Yellow fever   |
| Malaria  |  |

**In addition, laboratories must report:**

- Viral load results of reportable diseases
- ALL blood lead levels, as of 12/2002 (KCLPPP/ABLES)
- CD4+ T-lymphocyte count < 500/ µl or CD4+ T-lymphocytes <29% of total lymphocytes

**Outbreaks, unusual occurrence of any disease, exotic or newly recognized diseases, and suspect acts of terrorism should be reported within 4 hours by telephone to the Epidemiology Hotline: 877-427-7317**

**Mail or fax reports to your local health department and/or to:**  
KDHE Office of Surveillance and Epidemiology, 1000 SW Jackson, Suite 210, Topeka, KS 66612-1274  
Fax: 877-427-7318 (toll-free)

# Appendix 4: Postcard Reminders

## Front

**We want to hear from you!**  
**Please complete the online survey by October 15th.**

Reporting communicable diseases to your local health department helps make Johnson County a healthier place to live. Here's your chance to tell us how we can make disease reporting easier for you. Only you and a few others were selected for this survey. Your opinion really matters!

Please take five minutes to complete the online survey using the link and access code listed on this card.

Please complete by October 15th.

### Questions?



Phone: 913-477-8368  
Fax: 913-826-1300  
E-mail: kevin.kovach@jocogov.org

 @JOCOHealth  
 www.facebook.com/jocohealthdept

**Reminder**

**Please complete the online survey by typing in this link:**  
<http://tinyurl.com/JCDHE-DisRep1>

**Your access code is: 1132**

## Back



11675 S. Sunset Drive, Suite 300  
Olathe, KS 66061  
Phone: 913-477-8368  
Fax: 913-826-1300  
Email: kevin.kovach@jocogov.org

PLEASE  
PLACE  
STAMP  
HERE

Address Information

**Reminder**

**Disease Reporting Survey due October 15th!**

## Appendix 5: Statistical Tables

|    | Questions                                       | Physicians          | Hospitals          | Retail Clinics | Labs  | Jail  |
|----|---|---------------------|--------------------|----------------|-------|-------|
|    |   | N = 74              | N = 15             | N = 3          | N = 4 | N = 1 |
| Q1 | Ever had a patient with a reportable disease?   | 87%<br>(82% - 91%)* | 100%               | 100%           | 100%  | 100%  |
| Q2 | How often do you report diseases?               | N = 64              | N = 15             | N=3            | N = 4 | N = 1 |
|    | <i>Always (~100%)</i>                           | 68%<br>(61 - 76%)   | 93%<br>(90% - 96%) | 33%            | 100%  | 100%  |
|    | <i>Most of the time (~75%)</i>                  | 19%<br>(13% - 25%)  | 7%<br>(4% - 10%)   | 33%            | 0%    | 0%    |
|    | <i>Some of the time (~50%)</i>                  | 3%<br>(0% - 6%)     | 0%                 | 0%             | 0%    | 0%    |
|    | <i>Almost never (~25%)</i>                      | 3%<br>(0% - 6%)     | 0%                 | 0%             | 0%    | 0%    |
|    | <i>Never (~0%)</i>                              | 6%<br>(3% - 10%)    | 0%                 | 33%            | 0%    | 0%    |
| Q3 | What makes you more likely to report a disease? | N = 64              | N = 15             | N = 3          | N = 4 | N = 1 |
|    | <i>Lab confirmation</i>                         | 84%<br>(79% - 90%)  | 80%<br>(75% - 85%) | 66.7%          | 100%  | 100%  |
|    | <i>Outbreak is occurring</i>                    | 52%<br>(44% - 59%)  | 60%<br>(54% - 66%) | 100%           | 0%    | 100%  |
|    | <i>Highly communicable</i>                      | 58%<br>(50% - 65%)  | 67%<br>(61% - 72%) | 66.7%          | 0%    | 0%    |
|    | <i>Severe in terms of morbidity</i>             | 53%<br>(45% - 61%)  | 40%<br>(34% - 46%) | 66.7%          | 0%    | 0%    |
|    | <i>Severe in terms of mortality</i>             | 47%<br>(39% - 55%)  | 40%<br>(34% - 46%) | 66.7%          | 0%    | 0%    |

\*80% Confidence Interval

|    | Questions   | Physicians         | Hospitals          | Retail Clinics | Labs  | Jail  |
|----|---|--------------------|--------------------|----------------|-------|-------|
| Q4 | How do you report diseases to the health department?  | N = 64             | N = 15             | N = 3          | N = 4 | N = 1 |
|    | <i>By phone to the local health department</i>        | 44%<br>(36% - 51%) | 67%<br>(61% - 72%) | 100%           | 0%    | 0%    |
|    | <i>By fax to the local health department</i>          | 33%<br>(26% - 40%) | 93%<br>(90% - 96%) | 67%            | 0%    | 100%  |
|    | <i>By phone to the state health department</i>        | 13%<br>(7% - 18%)  | 47%<br>(41% - 53%) | 100%           | 75%   | 0%    |
|    | <i>By fax to the state health department</i>          | 20%<br>(14% - 27%) | 67%<br>(61% - 72%) | 33%            | 25%   | 100%  |
| Q5 | What barriers are there to reporting diseases?        | N = 64             | N = 15             | N = 3          | N = 4 | N = 1 |
|    | <i>Don't want to violate patient's trust</i>          | 8%<br>(4% - 12%)   | 7%<br>(4% - 10%)   | 100%           | 0%    | 0%    |
|    | <i>Too much work</i>                                  | 16%<br>(10% - 21%) | 7%<br>(4% - 10%)   | 100%           | 0%    | 0%    |
|    | <i>Too time consuming</i>                             | 22%<br>(15% - 28%) | 20%<br>(15% - 25%) | 33%            | 50%   | 100%  |
|    | <i>Do not know what diseases to report</i>            | 23%<br>(17% - 30%) | 7%<br>(4% - 10%)   | 33%            | 0%    | 0%    |
|    | <i>Do not know when to report diseases</i>            | 13%<br>(7% - 18%)  | 0%                 | 33%            | 0%    | 0%    |
|    | <i>No reward or penalty for reporting</i>             | 0%                 | 0%                 | 0%             | 0%    | 0%    |
|    | <i>I thought it was someone else's responsibility</i> | 8%<br>(4% - 12%)   | 0%                 | 33%            | 0%    | 0%    |

\*80% Confidence Interval

|    | Questions   | Physicians         | Hospitals          | Retail Clinics | Labs  | Jail  |
|----|---|--------------------|--------------------|----------------|-------|-------|
|    |   | N = 64             | N = 15             | N = 3          | N = 4 | N = 1 |
| Q6 | Is the current reporting system convenient?               | 49%<br>(41% - 57%) | 73%<br>(68% - 79%) | 67%            | 50%   | 0%    |
|    |   |                    |                    |                |       |       |
| Q7 | How would you prefer to report diseases?                  | N = 74             | N = 15             | N = 3          | N = 4 | N = 1 |
|    | <i>Phone</i>  | 43%<br>(36% - 50%) | 20%<br>(15% - 25%) | 100%           | 25%   | 0%    |
|    | <i>Fax</i>  | 54%<br>(47% - 61%) | 67%<br>(61% - 72%) | 67%            | 50%   | 0%    |
|    | <i>Email</i>  | 12%<br>(8% - 17%)  | 27%<br>(21% - 32%) | 67%            | 25%   | 0%    |
|    | <i>Submit report via a web form</i>                       | 35%<br>(28% - 42%) | 53%<br>(47% - 59%) | 33%            | 25%   | 100%  |
|    |   |                    |                    |                |       |       |
| Q8 | What would increase the likelihood that you would report? | N = 74             | N = 15             | N = 3          | N = 4 | N = 1 |
|    | <i>Multiple reporting avenues</i>                         | 37%<br>(30% - 43%) | 20%<br>(15% - 25%) | 67%            | 25%   | 100%  |
|    | <i>Simplify the reporting procedure</i>                   | 49%<br>(41% - 56%) | 53%<br>(47% - 59%) | 100%           | 25%   | 0%    |
|    | <i>Incentive for reporting</i>                            | 10%<br>(5% - 14%)  | 7%<br>(4% - 10%)   | 100%           | 0%    | 0%    |
|    | <i>Penalty for not reporting</i>                          | 5%<br>(2% - 9%)    | 0%                 | 0%             | 0%    | 0%    |
|    | <i>Education about disease reporting</i>                  | 32%<br>(26% - 39%) | 100%               | 100%           | 0%    | 0%    |
|    | <i>Feedback about disease reporting</i>                   | 31%<br>(24% - 38%) | 7%<br>(4% - 10%)   | 67%            | 25%   | 0%    |

\*80% Confidence Interval

|     | <b>Questions</b>                                      | <b>Physicians</b>  | <b>Hospitals</b>   | <b>Retail Clinics</b> | <b>Labs</b> | <b>Jail</b> |
|-----|---|--------------------|--------------------|-----------------------|-------------|-------------|
| Q9  | How would you like to receive information from JCDHE? | N = 74             | N = 15             | N = 3                 | N = 4       | N = 1       |
|     | <i>Email</i>  | 24%<br>(18% - 31%) | 26%<br>(21% - 32%) | 67%                   | 0%          | 0%          |
|     | <i>JCDHE website</i>                                  | 30%<br>(23% - 36%) | 13%<br>(9% - 18%)  | 100%                  | 25%         | 0%          |
|     | <i>Social media</i>                                   | 5%<br>(2% - 9%)    | 33%<br>(28% - 39%) | 67%                   | 0%          | 100%        |
|     | <i>Mail</i>   | 43%<br>(36% - 50%) | 33%<br>(28% - 39%) | 100%                  | 25%         | 0%          |
|     | <i>Fax</i>  | 39%<br>(32% - 46%) | 20%<br>(15% - 25%) | 33%                   | 25%         | 0%          |
|     | <i>Presentations</i>                                  | 4%<br>(1% - 7%)    | 20%<br>(15% - 25%) | 67%                   | 0%          | 0%          |
|     | <i>Meetings</i>                                       | 4%<br>(1% - 7%)    | 47%<br>(41% - 53%) | 33%                   | 0%          | 0%          |
|     |   |                    |                    |                       |             |             |
| Q10 | How long have you been in practice?                   | N = 74             | N = 15             | N = 3                 | N = 4       | N = 1       |
|     | <i>1 - 2 years</i>                                    | 7%<br>(3% - 11%)   | 7%<br>(4% - 10%)   | 33%                   | 25%         | 0%          |
|     | <i>3 - 5 years</i>                                    | 8%<br>(4% - 12%)   | 20%<br>(15% - 25%) | 0%                    | 0%          | 100%        |
|     | <i>6 - 10 years</i>                                   | 11%<br>(6% - 15%)  | 7%<br>(4% - 10%)   | 0%                    | 0%          | 0%          |
|     | <i>More than 10 years</i>                             | 74%<br>(68% - 80%) | 67%<br>(61% - 72%) | 67%                   | 75%         | 0%          |

\*80% Confidence Interval

## Appendix 6: Reporting Frequency by Selected Physician Characteristics

| Physician Characteristics<br>N = 64                   | Report All or most of the Time<br>Proportion (80% Confidence Interval) | Statistically Significant Difference* |
|---|--|---------------------------------------|
| <b>Makes you more likely to report diseases?</b>      |  |                                       |
| <b>Lab confirmation</b>                               |  |                                       |
| Yes   | 81% (74% - 86%)  | Yes                                   |
| No  | 6% (3% - 11%)  |                                       |
| <b>Outbreak is occurring</b>                          |  |                                       |
| Yes   | 44% (37% - 52%)  | No                                    |
| No  | 43% (35% - 51%)  |                                       |
| <b>Disease is highly communicable</b>                 |  |                                       |
| Yes   | 49% (41% - 57%)  | No                                    |
| No  | 38% (31% - 46%)  |                                       |
| <b>Disease is severe (morbidity)</b>                  |  |                                       |
| Yes   | 44% (37% - 52%)  | No                                    |
| No  | 43% (35% - 51%)  |                                       |
| <b>Disease is severe (mortality)</b>                  |  |                                       |
| Yes   | 41% (34% - 49%)  | No                                    |
| No  | 46% (38% - 54%)  |                                       |
| <b>What barriers are there to reporting diseases?</b> |  |                                       |
| <b>Violating patient's trust</b>                      |  |                                       |
| Yes   | 8% (5% - 13%)  | Yes                                   |
| No  | 79% (72% - 85%)  |                                       |
| <b>Too much work</b>                                  |  |                                       |
| Yes   | 14% (10% - 21%)  | Yes                                   |
| No  | 73% (65% - 79%)  |                                       |
| <b>Too time Consuming</b>                             |  |                                       |
| Yes   | 19% (14% - 26%)  | Yes                                   |
| No  | 68% (61% - 75%)  |                                       |
| <b>Do not know what diseases to report</b>            |  |                                       |
| Yes   | 17% (12% - 24%)  | Yes                                   |
| No  | 70% (62% - 77%)  |                                       |
| <b>Do not know when to report diseases</b>            |  |                                       |
| Yes   | 11% (7% - 17%)   | Yes                                   |
| No  | 76% (69% - 82%)  |                                       |
| <b>I thought it was someone else's responsibility</b> |  |                                       |
| Yes   | 5% (2% - 10%)  | Yes                                   |
| No  | 83% (76% - 88%)  |                                       |

\*Based on differences in confidence intervals

## Appendix 7: Open Ended Comments

### Question 3: What makes you more likely to report a disease to the health department?

- New/emerging disease (2)
- Required by law; state or federal mandate (4)

### Question 4: How do you report diseases to the health department?

- Lab reports for me (7)
- Infection control specialists report for me (2)

### Question 5: What barriers are there to reporting diseases to the health department?

- Four hour reporting timeframe is hard to meet over the weekend (1)
- Getting the patient's background information is hard when it is not in the medical record (1)
- We do not receive feedback from the health department on the number of cases (1)
- I tend to overlook this (1)
- It is time consuming to be on hold or play "phone tag" – frustrating

### Question 7: How would you prefer to report diseases to the health department?

- Submit the information electronically (3)
- The form needs to be easier to use (1)
- There needs to be a central number to call/fax information too

### Question 8: What would increase the likelihood that you would report diseases?

- Submit the information electronically (1)
- An up-to-date list of who to contact for information (at the health department)

### Question 9: How would you like to receive information from the JCDHE?

- No response