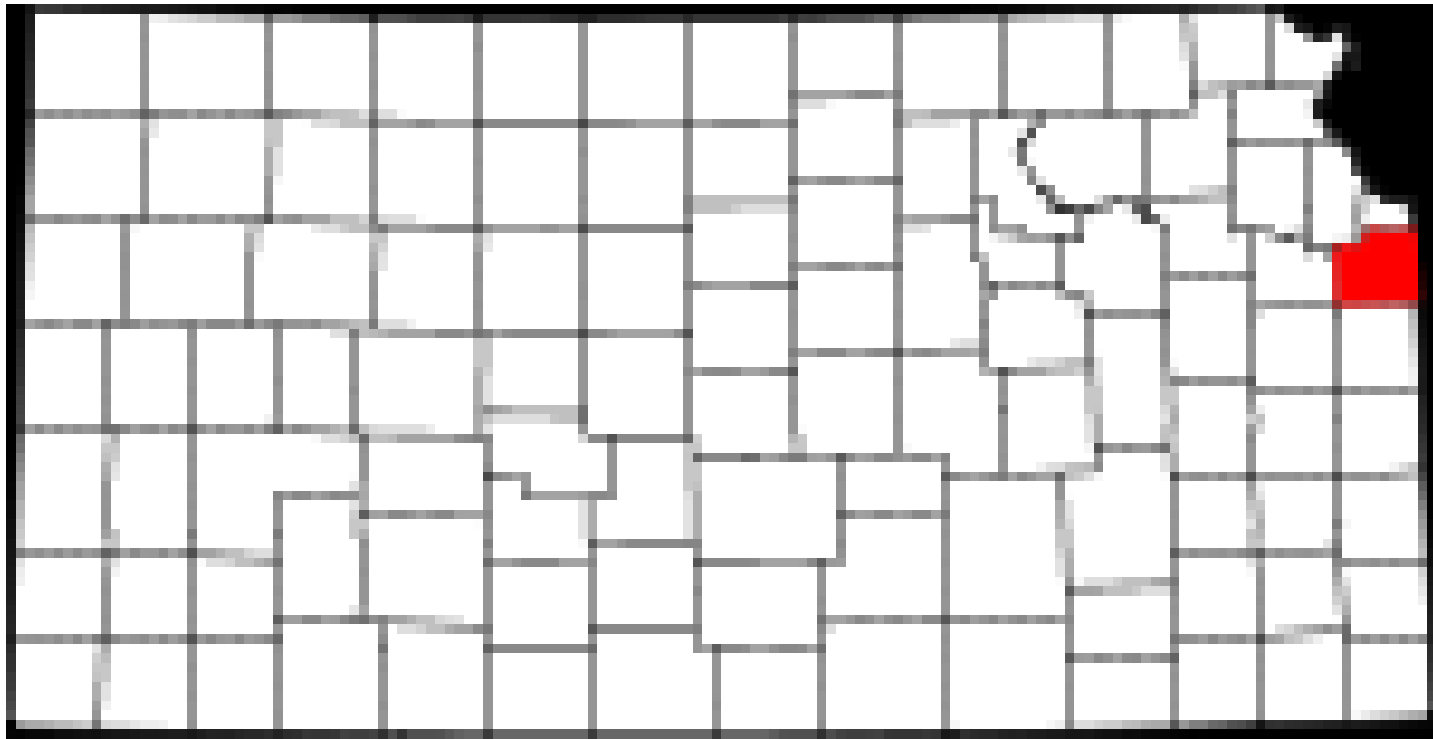# Johnson County Department of Health and Environment

By, Ahsha Abu-Ali

Johnson County, KS

Johnson County, KS

- Population 544,179
(2010 Census Data)

- Largest KS county
 in terms of Population
(2010 Census Data)

- Has 2 of the top 5
populated cities in KS
(Overland Park & Olathe)

- 480 Sq. Miles

Structure of The Johnson County Department of Health and Environment

- Board of Health (Johnson County Commissioners)
- Director
- Deputy Director
- Has 6 Divisions
  - Environmental Division
  - Adult and Childcare Facilities Divisions
  - Administration Division
  - Family Health Services Division
  - Health Education Division
  - Disease Containment Division

Structure of The Johnson County Department of Health and Environment

- Board of Health (Johnson County Commissioners)
  - Responsible for setting county policies and serves as the Board of Health.
- Director and Deputy Director
  - Responsible for strategic planning, setting agency policies, ensuring service delivery and allocating resources.

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A Glance at The Divisions

- Administration Division
  - Responsible for the general financial management and procurement procedures for the JCDHE.
- Environmental Division
  - Responsible for general environmental protection, including the air quality, hazardous waste, regulation of septic systems and pools and solid waste disposal
- Adult and Childcare Facilities Division
  - Responsible for the regulation and quality assurance of child care facilities.
- The Deputy Director focuses on these 3 divisions

A Glance at The Divisions

- Family Health Services Division
  - Responsible for individual level prevention programs, including screening and diagnostic tests, nutritional support for pregnant women and children and other clinical services.
- Health Education Division
  - Responsible for population based community health improvement – especially regarding chronic disease and wellbeing.
- Disease Containment Division
  - Responsible for communicable disease control and emergency preparedness. This includes communicable disease surveillance, investigation, response and immunization.
- The Director tends to focus on these more

Closer Look at Disease Containment
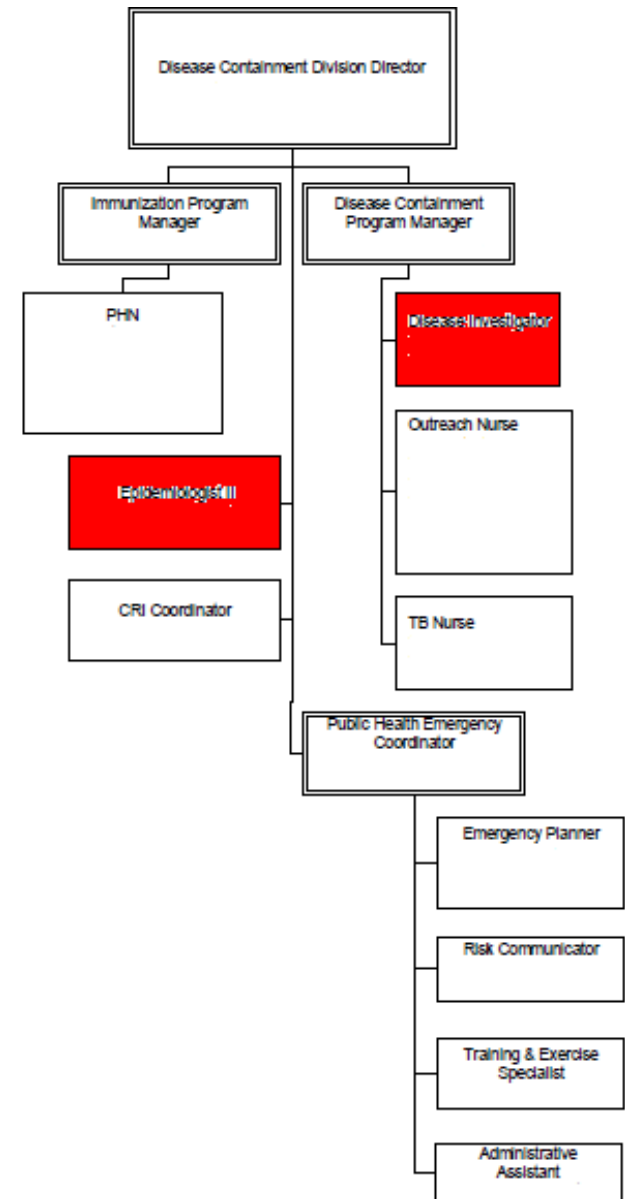
Disease Reporting in Johnson County

KS reportable diseases.pdf
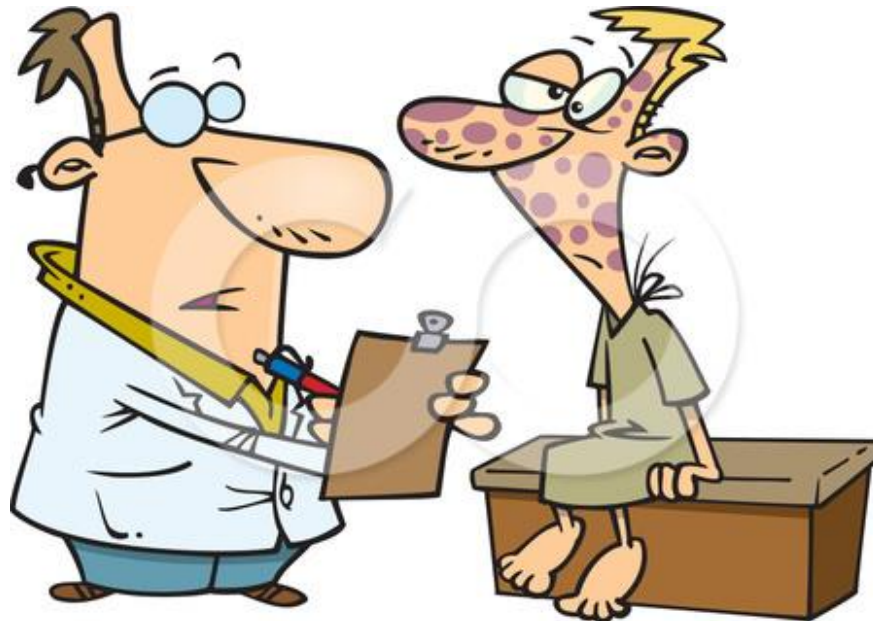
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How Diseases Are Reported

- By Who?
  - Physicians
  - Hospital Infection Control Nurses
  - Jails
  - Retail Clinics
  - School Nurses
  - Self Reported(rarely)

- How?
  - Phone
  - Fax

KANSAS NOTIFIABLE DISEASE FORM

Today's Date: ____ / ____ /____

Patient's Name: _____
           Last   First   Middle

Day Phone: _____   Evening Phone: _____

Residential Address: _____

City: _____   Zip: _____   County: _____

Ethnicity: Hispanic or Latino   Not Hispanic or Latino   Unknown

Race: *(Circle all that apply)*

       American Indian/Alaska Native   Asian   Black or African American

       Native Hawaiian or Other Pacific Islander   White   Unknown

Sex: M   F   Date of Birth: ____ / ____ / _____   Age if DOB unknown: _____

Disease Name: _____

Symptoms: Onset: ___ / ___ /____   List the 3 most prominent symptoms:

Symptom 1: _____   Symptom 2: _____   Symptom 3: _____

Outbreak associated?   Y   N   Died?   Y   N   Hospitalized?   Y   N

Institutional Residence?   None   Nursing Home   Correctional   Residential   Hospital   Psych

Physician Name: _____   Physician Phone: _____

Laboratory Information:

Specimen Collection Date: ____ / ____ / _____   Date Reported To You: ____ / ____ / _____
Name of Test Performed: _____   Results of Test: _____
Name of Laboratory: _____   Laboratory Results Attached? Y   N

Treatment Information:

Date of Treatment: ____ / ____ / _____   Treatment Type and Dosage: _____

Treatment Status: Complete   On-going   Discontinued

Name of person reporting: _____   Phone: _____

Comments: _____

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)   Epidemiology Hotline: 877-427-7317   *(Revised 07/2008)*

Next Step in Reporting

Final Step in Reporting

- Follow-up with health care provider & patient
  - To get more information on how disease was contracted (ex. In case of food borne illness, what you ate and when)

- Close Case

Disease Reporting Project

- Goals of Project

  - Identify barriers to effective disease reporting

  - Identify potential interventions to improve disease reporting

  - Determine how barriers and potential interventions differ by the type of person reporting

Johnson County Disease Stats

- 3144 Diseases Reported in 2011

- Reported Cases- Means any confirmed, probable, or suspect cases reported to JCHDE

- Top 4 Diseases Reported
  - Chlamydia (1058)
  - Latent Tuberculosis (266)
  - Norovirus (220)
  - Hepatitis C virus (220)

Disease Reporting Project

- Iceberg Effect
  - 3,144 / 544,179 = .578% of Johnson County Population

Disease Reporting Project

- Methods
  - Stratified sample by type & Create contact List
    - Physicians – Use www.kcdocs.com
    - Retail clinics – Use Google, Walgreens & CVS Website
    - Labs – Use Google & Phone book
    - Hospital infection control nurses –JCDHE contact list
    - Correctional facility –JCDHE contact list

Disease Reporting Project

- Contact list development

Step 1: Parameters
- Total Number of Physicians = 785
- Confidence Level = 80%
- Precision = ±5%
- Degree of Variability = 50%

Step 2: Sample Size Calculation

$$n0 = \frac{(1.282^2)*(0.5*0.5)}{0.05\text{^}2} = 165 \text{ physicians}$$

Step 3: Finite Sample Size Correction

$$n = 165/(1 + \left(\frac{165-1}{785}\right)$$
$$= 136\ Physicians$$

Step 4: Correction for 90% Response Rate

136 * 1.1 = 150 physicians

Disease Reporting Project

- Contact List

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

Disease Reporting Project

- Methods
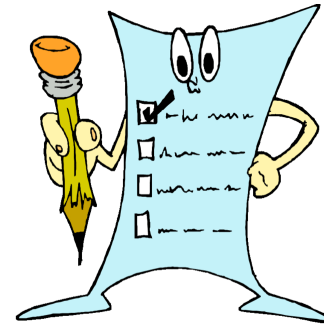
  - Survey-Develop a questionnaire and make an online and paper version

  - Review research papers on disease reporting to help create survey. (example: "Private doctors' practices, knowledge and attitude to reporting of communicable disease: a national survey in Taiwan" by. Hsiu-Fen Tan)

Disease Reporting Project

- Methods

    - Draft Survey Questions
        - Word the one for the labs differently than the others

    - Meet with IT (in order to learn how to put the survey online)

    - Add unique identifiers to keep track of who is answering

    - Pilot Test Survey
        - On JCHDE staff
        - On JCHDE nurses & Lab members

Disease Reporting Project

- Implement Survey
    - Mail out in paper form
        - Return envelope enclosed with disease list
        - Online website option instructions enclosed
        - Give two weeks for response

    - Mail out Postcard reminder

Disease Reporting Project

- Update contact list

- Follow up by phone – two weeks and two rounds of calls

- Close Survey

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Disease Reporting Project

- Statistics
  - Use Stata to calculate frequency tables
    - Proportions (80% CI)
    - Frequency tables (95% CI)

- Record results and present to JCHDE & KSU

Disease Reporting Project

- What we thought going in (Cause of under reporting)
    - Lack of Reporting Procedure Knowledge
    - Too much work and time consuming
    - Based on Literature reviews (don't want to violate patients trust)

Results

- Disposition Codes
  - This helped organize data to look at response rate easier

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.

Results

- ## Response Rate

Category	Eligible, Returned	Eligible, not returned	Ineligible	Unknown Eligibility	Response Rate 1*	Response Rate 2¥
Physicians	74	42	33	1	49.33%	63.25%
Infection Control Specialists	15	2	0	0	88.24%	88.24%
Laboratories	4	3	6	2	26.67%	44.44%
Detention Centers	1	0	0	0	100%	100%
Retail Clinics	3	10	0	0	23.08%	23.08%

Table 3: Response Rate Calculations
* Response Rate 1: The minimum response rate – all potential respondents are included in the denominator.
¥ Response Rate 2: The maximum response rate – all potential respondents that are either ineligible or whose eligibility is unknown have been removed from the denominator.

Results

- Question 1

Questions		Physicians	Hospitals	Retail Clinics	Labs	Jail
		N = 74	N = 15	N = 3	N = 4	N = 1
Q1	Have you ever had a patient with a reportable disease?	87% (82% - 91%)*	100%	100%	100%	100%

Results

- Question 1 takeaways

    - For the most part everyone has ran across a patient suspected with a reportable disease

    - Most of the doctors that reported having never had a patient with a reportable disease were from pulmonary doctors who would rarely if ever come across one

Results

- Question 2

How often do you report diseases?	N = 64	N = 15	N=3	N = 4	N = 1
Always (≈100%)	68% (61 - 76%)	93% (90% - 96%)	33%	100%	100%
Most of the time (≈75%)	19% (13% - 25%)	7% (4% - 10%)	33%	0%	0%%
Some of the time (≈50%)	3% (0% – 6%)	0%	0%	0%	0%
Almost never (≈25%)	3% (0% - 6%)	0%	0%	0%	0%
Never (≈0%)	6% (3% - 10%)	0%	33%	0%	0%

Results

- Question 2 Takeaways
    - 87% of doctors say they report most or all of the time

    - 100% of nurses and jails say they report all or most of the time

    - 66% of retail clinics say they report all or most of the time. Keep in mind that only 3 retail clinics responded

Results

- Question 3

What makes you more likely to report a disease?	N = 64	N = 15	N = 3	N = 4	N = 1
Lab confirmation	84% (79% - 90%)	80% (75% - 85%)	66.7%	100%	100%
Outbreak is occurring	52% (44% - 59%)	60% (54% - 66%)	100%	0%	100%
Highly communicable	58% (50% - 65%)	67% (61% - 72%)	66.7%	0%	0%
Severe in terms of morbidity	53% (45% - 61%)	40% (34% - 46%)	66.7%	0%	0%
Severe in terms of mortality	47% (39% - 55%)	40% (34% - 46%)	66.7%	0%	0%

Results

- Question 3 Takeaways
    - Lab confirmation is the biggest determinant on whether or not someone reports

    - This likely means health care providers aren't usually reporting suspect cases. They are waiting for the labs to come back in

Results

- Question 4

How do you report diseases to the health department?	N = 64	N = 15	N = 3	N = 4	N = 1
By phone to the local health department	44% (36% - 51%)	67% (61% - 72%)	100%	0%	0%
By fax to the local health department	33% (26% - 40%)	93% (90% - 96%)	67%	0%	100%
By phone to the state health department	13% (7% - 18%)	47% (41% - 53%)	100%	75%	0%
By fax to the state health department	20% (14% - 27%)	67% (61% - 72%)	33%	25%	100%

Results

- Question 4 Takeaways
  - In all the groups most health care providers report to the local health department more so by fax than phone.

  - There's a lot of over lap especially with nurses when reporting to the state and local health department.

  - Form confusion about what forms to complete.
    - This was stated by one of the respondents

Results

- Question 5

What barriers are there to reporting diseases?	N = 64	N = 15	N = 3	N = 4	N = 1
Don't want to violate patient's trust	8% (4% - 12%)	7% (4% - 10%)	100%	0%	0%
Too much work	16% (10% - 21%)	7% (4% - 10%)	100%	0%	0%
Too time consuming	22% (15% - 28%)	20% (15% - 25%)	33%	50%	100%
Do not know what diseases to report	23% (17% - 30%)	7% (4% - 10%)	33%	0%	0%
Do not know when to report diseases	13% (7% - 18%)	0%	33%	0%	0%
No reward or penalty for reporting	0%	0%	0%	0%	0%
I thought it was someone else's responsibility	8% (4% - 12%)	0%	33%	0%	0%

Results

- Question 5 Takeaways
  - The biggest barrier is the disease reporting process is too time consuming.
    - This could be because of multiple phone calls to finish case reports (based on comments)
  - The doctors had one other barrier and that was them not knowing what diseases to report
    - Main reason is most doctors say they don't report. (the nurse or lab does it for them)
    - The Disease list could be more user friendly

Results

- Question 6

Is the current reporting system convenient?	49% (41% - 57%)	73% (68% - 79%)	67%	50%	0%
% denotes yes answers					

Results

- Question 6 Takeaways
    - There's room for improvement across the board.
    - Biggest compliant from phone surveys was being on hold too long and having to play phone tag
    - Web based reporting could take pressure off the amount of phone calls

Results

- Question 7

How would you prefer to report diseases?	N = 74	N = 15	N = 3	N = 4	N = 1
Phone	43% (36% - 50%)	20% (15% - 25%)	100%	25%	0%
Fax	54% (47% - 61%)	67% (61% - 72%)	67%	50%	0%
Email	12% (8% - 17%)	27% (21% - 32%)	67%	25%	0%
Submit report via a web form	35% (28% - 42%)	53% (47% - 59%)	33%	25%	100%

Results

- Question 7 Takeaways
  - Fax seems to be the most popular way to report across the board, followed closely by phone.
    - This was expected because it is the current system and what they are use too
  - There's a strong interest in web form reporting especially with hospital infection control nurses
    - The biggest reason why some doctors were against this was because some of them don't have internet access at the office. Going into the future this problem will continue to lessen.

Results

- Question 8

What would increase the likelihood that you would report?	N = 74	N = 15	N = 3	N = 4	N = 1
Multiple reporting avenues	37% (30% - 43%)	20% (15% - 25%)	67%	25%	100%
Simplify the reporting procedure	49% (41% - 56%)	53% (47% - 59%)	100%	25%	0%
Incentive for reporting	10% (5% - 14%)	7% (4% - 10%)	100%	0%	0%
Penalty for not reporting	5% (2% - 9%)	0%	0%	0%	0%
Education about disease reporting	32% (26% - 39%)	100%	100%	0%	0%
Feedback about disease reporting	31% (24% - 38%)	7% (4% - 10%)	67%	25%	0%

Results

- Question 8 Takeaways
  - Doctors:
    - They want a simpler reporting procedure and more reporting avenues. (web form can take care of both
    - They also want education and feedback on reporting (this can be done by improving the disease list, adding emails we got to the newsletter and putting a message board on the web form)
  - Infection Control Nurses:
    - They want a simplified procedure and education on disease reporting.
  - Retail:
    - They want a simplified procedure, education on disease reporting and incentive for reporting (letting them know it's the law).
  - Labs:
    - Data didn't help too much. They have the same issues as everyone else.
  - Jail:
    - They want multiple reporting avenues (this is were web form comes into play)

Results

- Question 9

How would you like to receive information from JCDHE?	N = 74	N = 15	N = 3	N = 4	N = 1
Email	24% (18% - 31%)	26% (21% - 32%)	67%	0%	0%
JCDHE website	30% (23% - 36%)	13% (9% - 18%)	100%	25%	0%
Social media	5% (2% - 9%)	33% (28% - 39%)	67%	0%	100%
Mail	43% (36% - 50%)	33% (28% - 39%)	100%	25%	0%
Fax	39% (32% - 46%)	20% (15% - 25%)	33%	25%	0%
Presentations	4% (1% - 7%)	20% (15% - 25%)	67%	0%	0%
Meetings	4% (1% - 7%)	47% (41% - 53%)	33%	0%	0%

Results

- Question 9 Takeaways
  - Standard mail is the best way to get information across to everyone
  - Nurse would love an education meeting on disease reporting (maybe set up a monthly one for them to attend)
  - For urgent information fax is better than email
  - For all other news the JCDHE website is best

Results

- Question 10

How long have you been in practice?	N = 74	N = 15	N = 3	N = 4	N = 1
1 - 2 years	7% (3% - 11%)	7% (4% - 10%)	33%	25%	0%
3 - 5 years	8% (4% - 12%)	20% (15% - 25%)	0%	0%	100%
6 - 10 years	11% (6% - 15%)	7% (4% - 10%)	0%	0%	0%
More than 10 years	74% (68% - 80%)	67% (61% - 72%)	67%	75%	0%

Results

- Question 10 takeaways
  - We didn't have a base line of healthcare providers experience, so we couldn't make inferences about change in perception.
  - A lot of nurses did the surveys for their doctors, so we don't know if they answered as themselves or for the doctors.
  - Best thing we can take away is Johnson is full of experienced health care providers.

Closer Look At The Physicians

Physician Characteristics N = 64	Report All or most of the Time Proportion (95% Confidence Interval)
Makes you more likely to report diseases?	
Lab confirmation	
Yes	81% (70% - 89%)
No	6% (2% - 16%)
Outbreak is occurring	
Yes	44% (33% - 57%)
No	43% (31% - 55%)
Disease is highly communicable	
Yes	49% (37% - 61%)
No	38% (27% - 50%)
Disease is severe (morbidity)	
Yes	44% (33% - 57%)
No	43% (31% - 55%)
Disease is severe (mortality)	
Yes	41% (30% - 54%)
No	46% (34% - 58%)

Closer Look At The Physicians

Physician Characteristics N = 64	Report All or most of the Time Proportion (95% Confidence Interval)
What barriers are there to reporting diseases?	
Violating patient's trust	
Yes	8% (3% - 18%)
No	79% (68% - 88%)
Too much work	
Yes	14% (8% - 25%)
No	73% (61% - 82%)
Too time Consuming	
Yes	19% (11% - 30%)
No	68% (56% - 78%)
Do not know what diseases to report	
Yes	17% (10% - 29%)
No	70% (58% - 80%)
Do not know when to report diseases	
Yes	11% (5% - 21%)
No	76% (64% - 85%)
I thought it was someone else's responsibility	
Yes	5% (2% - 14%)
No	83% (71% - 90%)

Closer Look At The Physicians

- Biggest takeaway form the closer look

  - Physicians are very dependent on the lab

  - There's a need to push them to report suspect cases and not just lab confirmed ones

  - We have a disconnect when trying to get information to the doctors. We need to do a better job

Recommendations

- Web based reporting

- Disease list alterations, categorical instead of alphabetical (vaccine-preventable, emerging infectious disease, foodborne disease, STD's, and Aerosol&Droplet transmitted) it's more user friendly KS reportable diseases.pdf

- Make our information more prominent on disease list (KDHE's information is on it)

- Make and keep and updated address book of physicians

Disease Reporting Project

- Goals of Project

  - Identify barriers to effective disease reporting
    - **(Lack of knowledge of reportable disease and process in reporting, not easy to do)**
  - Identify potential interventions to improve disease reporting
    - **(Web-based reporting, make disease list user friendly,)**

  - Determine how barriers and potential interventions differ by the type of person reporting
    - **(Nurses main problem is the amount of time it takes and with doctors it's a lack of knowledge of the whole system)**

Problems Encountered

- Health department has no contact information for Physicians
- Kcdocs was out dated (used NPI to correct)
- Johnson County is on the state line (doctors move back and forth)
- Survey Faxes not coming all the way through
- Healthcare providers not understanding the skips in question
- Use a different survey site next time
- Getting to the right person on phone calls and getting them returned

Personal Thoughts During The Internship

- In the real world everything doesn't work perfectly (don't have all the information you need)

- Surprised by the lack of knowledge of the reportable disease process from healthcare providers

- The system needs a structure change, it shouldn't be every county but regional (To make up for poor counties

- Only two – three people do most of the reporting for the county

Personal Thoughts During The Internship

- The State and Counties need a system change. There's too much overlap and too many cases going unnoticed
- Finally, you can't have people who don't know about public health(i.e. Congressmen) making the decisions or it doesn't run effectively

Questions?

- Contact information
    - Email: ahshaa@ksu.edu
    - Phone: 913-568-3009