Infection Prevention

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Epidemiologist

Disease Surveillance

City of Lubbock Health Department

Disclosure

- No financial disclosures

Objectives

- Describe the functions of the Lubbock Health Department and its programs and departments
- Identify the purpose of a line list and its relevance for outbreaks
- Provide an example for assessing infection control

City of Lubbock Health Department

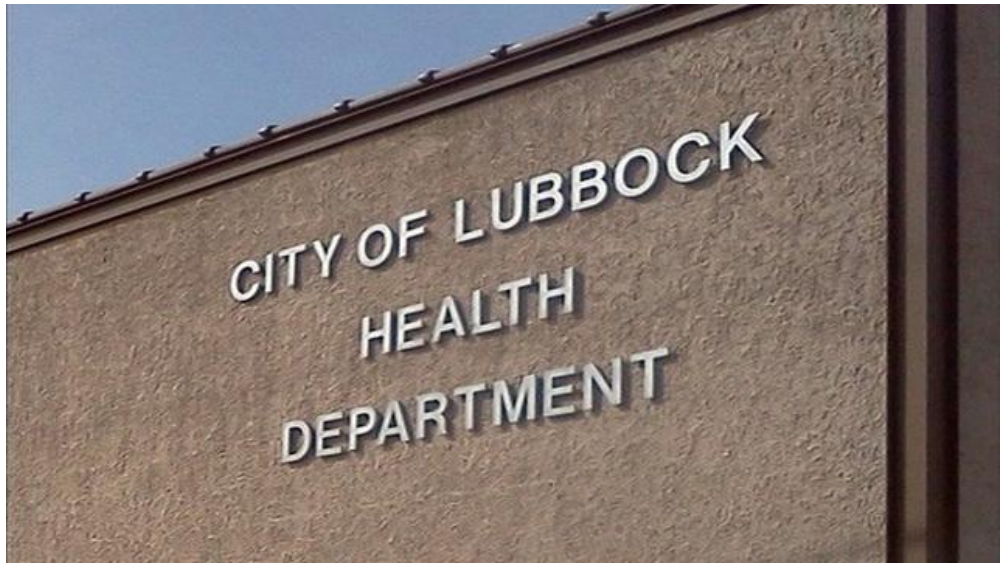
806 18th Street

806-775-2933

- Administration:
  - Dr. Ronald Cook- Medical Director
  - Katherine Wells, MPH- Director of Public Health
  - Kim Swacina, MT (ASCP)- Assistant Director of Public Health

What do you do at the Health Department?

- Immunizations
- Disease Surveillance
- STD Clinic w/in house lab
- Public Health Preparedness
- HIV Outreach*
- LBK Community**



*Began January 1, 2020

**Mid April

Immunizations

- Underinsured Uninsured Children- $14 for one immunization or $20 for two or more
- Medicaid & CHIP Children- Free
- Uninsured Adults- $15
- TB Skin Test-$20
- Flu Shot-$20
- Clinic hours vary

Tips:

- Provide shot record to child or fax to the health department
- Translation may take time
- Summer health fair
  - Free vaccines for all children
  - Usually in the summer before the start of the new school year
  - Look for notices from the health department to notify parents

STD Clinic

- Same location different entrance
- Free condoms!!
- Testing for Chlamydia, Gonorrhea, Syphilis, and HIV
- In house:
  - RPRs and TP-PA: 24-72 hour turn around time (depending on when drawn)
  - Stat: Wet Preps, RPRs, Gonorrheal smears (for males) and Darkfield Microscopy: 30 minutes-1 hour turn around time
  - Exam room HIV screen, confirmatory test can take up to 1 week
- See patients 13 years and up
- **All testing is confidential**

Public Health Preparedness

- Prepare and Respond to Public Health Emergencies
- Work closely with emergency management team
- Capabilities to handle small to large capacity emergencies
  - i.e. pandemic, large outbreaks, natural disasters
- January 2020- City of Lubbock Health Department Public Health Preparedness recognized by NACCHO for meeting comprehensive preparedness benchmarks required by Project Public Health Ready (PPHR)
  - Awarded to less than 20% of local health department nationally

Ready

Prepare. Plan. Stay Informed..

Disease Surveillance

- Investigate all reportable conditions and outbreaks
- Includes community acquired and hospital acquired infections
- Tiffany Torres, MPH- 806-775-2990
- Norma Pope, RN- 806-775-2915
- Sally Brewer, RN- 806-775-2916

Disease Surveillance- 806-775-2935

TEXAS Health and Human Services | Texas Department of State Health Services

Texas Notifiable Conditions - 2020

Access List Online

Report all Confirmed and Suspected cases

24/7 Number for Immediately Reportable – 1-800-705-8868

Contact Information

Unless noted by*, report to your local or regional health department using number above or find contact information at *http://www.dshs.texas.gov/idcu/investigation/conditions/contacts/*

A – L	When to Report	L – Y	When to Report
*Acquired immune deficiency syndrome (AIDS) [1]	Within 1 week	Legionellosis [2]	Within 1 week
Amebiasis[2]	Within 1 week	Leishmaniasis [2]	Within 1 week
Amebic meningitis and encephalitis [2]	Within 1 week	Listeriosis [2, 3]	Within 1 week
Anaplasmosis [2]	Within 1 week	Lyme disease [2]	Within 1 week
Anthrax [2, 3]	**Call Immediately**	Malaria [2]	Within 1 week
Arboviral infections [2, 4, 5]	Within 1 week	**Measles (rubeola)** [2]	**Call Immediately**
*Asbestosis[6]	Within 1 week	**Meningococcal infection, invasive (*Neisseria meningitidis*)** [2, 3]	**Call Immediately**
Ascariasis [2]	Within 1 week	**Multidrug-resistant *Acinetobacter* (MDR-A)** [2, 7]	**Within 1 work day**
Babesiosis [2]	Within 1 week	**Mumps** [2]	**Within 1 work day**
Botulism (adult and infant) [2, 3, 8]	**Call Immediately**[8]	Paragonimiasis [2]	Within 1 week
Brucellosis [2, 3]	**Within 1 work day**	**Pertussis** [2]	**Within 1 work day**
Campylobacteriosis [2]	Within 1 week	*Pesticide poisoning, acute occupational[9]	Within 1 week
*Cancer[10]	See rules[10]	**Plague (*Yersinia pestis*)** [2, 3]	**Call Immediately**
Carbapenem-resistant *Enterobacteriaceae* (CRE) [2, 11]	**Within 1 work day**	**Poliomyelitis, acute paralytic** [2]	**Call Immediately**
Chagas disease [2, 5]	Within 1 week	**Poliovirus infection, non-paralytic** [2]	**Within 1 work day**
*Chancroid [1]	Within 1 week	Prion disease such as Creutzfeldt-Jakob disease (CJD)[2, 12]	Within 1 week
*Chickenpox (varicella)[13]	Within 1 week	**Q fever** [2]	**Within 1 work day**
**Chlamydia trachomatis* infection[1]	Within 1 week	**Rabies, human** [2]	**Call Immediately**
*Contaminated sharps injury[14]	Within 1 month	**Rubella (including congenital)** [2]	**Within 1 work day**
***Controlled substance overdose**[15]	**Report Immediately**	Salmonellosis, including typhoid fever [2, 3]	Within 1 week
Coronavirus, novel [2, 16]	**Call Immediately**	Shiga toxin-producing *Escherichia coli* [2, 3]	Within 1 week
Cryptosporidiosis [2]	Within 1 week	Shigellosis [2]	Within 1 week
Cyclosporiasis [2]	Within 1 week	*Silicosis[17]	Within 1 week
Cysticercosis [2]	Within 1 week	**Smallpox** [2]	**Call Immediately**
Diphtheria [2, 3]	**Call Immediately**	*Spinal cord injury[18]	Within 10 work days
*Drowning/near drowning[18]	Within 10 work days	Spotted fever group rickettsioses [2]	Within 1 week
Echinococcosis [2]	Within 1 week	Streptococcal disease (groups A[2], B[2], *S. pneumo.* [2, 3]), invasive	Within 1 week
Ehrlichiosis [2]	Within 1 week	***Syphilis – primary and secondary stages*** [1, 19]	**Within 1 work day**
Fascioliasis [2]	Within 1 week	*Syphilis – all other stages[1, 19]	Within 1 week
*Gonorrhea[1]	Within 1 week	*Taenia solium* and undifferentiated *Taenia* infection[2]	Within 1 week
Haemophilus influenzae, invasive [2, 3]	Within 1 week	Tetanus [2]	Within 1 week
Hansen's disease (leprosy) [20]	Within 1 week	*Traumatic brain injury [18]	Within 10 work days
Hantavirus infection [2]	Within 1 week	Trichinosis [2]	Within 1 week
Hemolytic uremic syndrome (HUS) [2]	Within 1 week	Trichuriasis [2]	Within 1 week
Hepatitis A [2]	**Within 1 work day**	**Tuberculosis (*Mycobacterium tuberculosis* complex)** [3, 21]	**Within 1 work day**
Hepatitis B, C, and E (acute) [2]	Within 1 week	Tuberculosis infection[22]	Within 1 week
Hepatitis B infection identified prenatally or at delivery (mother) [2]	Within 1 week	**Tularemia** [2, 3]	**Call Immediately**
Hepatitis B, perinatal (HBsAg+ < 24 months old) (child) [2]	**Within 1 work day**	Typhus [2]	Within 1 week
Hookworm (ancylostomiasis) [2]	Within 1 week	**Vancomycin-intermediate *Staph aureus* (VISA)** [2, 3]	**Call Immediately**
Human immunodeficiency virus (HIV), acute infection [1, 23]	**Within 1 work day**	**Vancomycin-resistant *Staph aureus* (VRSA)** [2, 3]	**Call Immediately**
*Human immunodeficiency virus (HIV), non-acute infection [1, 23]	Within 1 week	***Vibrio* infection, including cholera** [2, 3]	**Within 1 work day**
Influenza-associated pediatric mortality [2]	**Within 1 work day**	**Viral hemorrhagic fever (including Ebola)** [2]	**Call Immediately**
Influenza, novel [2]	**Call Immediately**	**Yellow fever** [2]	**Call Immediately**
Lead, child blood, any level & adult blood, any level [24]	**Call/Fax Immediately**	Yersiniosis [2]	Within 1 week

In addition to specified reportable conditions, **any outbreak, exotic disease, or unusual group expression of disease that may be of public health concern should be reported by the most expeditious means available. This includes any case of a select agent** [25]
See select agent list at *https://www.selectagents.gov/selectagentsandtoxinslist.html*

***See condition-specific footnotes for reporting contact information**

E59-11364 (Rev. 1/10/20) Expires 1/31/21 – Go to http://www.dshs.texas.gov/idcu/investigation/conditions/ or call your local or regional health department for updates.

Epi 101

Why epidemiology?

- Epidemiology is the study that deals with incidence, distribution and control of diseases
- Determine source and cause of reportable diseases and outbreaks
- Helps give evidence
- Useful tools:
  - Line list
  - Frequency tables
  - Epi Curve

Line List

- Collect and organize information
- Help track potential outbreaks or increases in conditions
- Common items: basic demographics (including classroom, population characteristics) symptoms, symptom onset and duration
- Discrete date- Y or N, M or F,
- Can give as much or as little detail into a confirmed or possible outbreak
  - Tip: Include as much information as possible

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	A
1	Pt ID	Age	Ethnicity	Race	Species/Genus	Date Received	Date of Report	Lab Confir	Epi Linked	Confirmed	Probable	Died	Hospitaliz	ER visit	Healthcar	Onset of Illr	Illness End I	Vomiting	Fever	Non-Bloo	Bloody Di	Nausea	A
2	17276	5	U	U	UNDETERMINED	11/4/2019	11/4/2019	Y	N	Y	N	N	N	N	Y	10/24/2019	10/27/2019	Y	Y	N	Y	Y	Y
3	20240	5	U	U	UNDETERMINED	9/19/2019	9/19/2019	Y	N	N	Y	N	N	N	Y	9/3/2019	9/22/2019	Y	Y	Y	N	N	N
4	24721	2	U	U	UNDETERMINED	12/12/2019	12/11/2019	Y	N	N	Y	N	N	N	Y	12/7/2019	12/11/2019	N	Y	Y	N	N	Y
5	31339	4	U	W	UNDETERMINED	10/15/2019	10/15/2019	Y	N	N	Y	N	N	Y	N	10/14/2019	10/17/2019	N	Y	N	Y	N	Y
6	31464	2	U	U	SONNEI, GROUP I	11/1/2019	10/30/2019	Y	N	Y	N	N	N	N	Y	10/21/2019	11/1/2019	N	N	Y	N	N	N
7	31383	5	H	U	UNDETERMINED	10/22/2019	10/22/2019	Y	N	N	Y	N	N	N	Y	10/21/2019		Y	Y	Y	N	N	Y
8	31619	17	U	U	SONNEI	11/18/2019	11/18/2019	Y	N	Y	N	N	Y	Y	N	11/11/2019		N	Y	N	Y	Y	Y
9	31382	40	N	B	SONNEI	10/22/2019	10/22/2019	Y	N	Y	N	N	N	Y	N	10/15/2019	10/19/2019	N	Y	Y	N	N	Y
10	31470	17	H	W	UNDETERMINED	11/1/2019	10/31/2019	Y	N	N	Y	N	N	N	Y	10/21/2019	11/1/2019	N	N	N	Y	N	N
11	31638	37	N	W	UNDETERMINED	11/19/2019	11/19/2019	Y	N	N	Y	N	N	N	Y	11/13/2019	11/20/2019	N	N	Y	N	N	N
12	31351	4	U	U	UNDETERMINED	10/17/2109	10/17/2019	Y	N	N	Y	N	N	N	Y	10/16/2019		Y	Y	Y	N	N	N
13	31680	3	U	U	UNDETERMINED	11/25/2019	11/22/2019	Y	N	N	Y	N	N	N	Y	11/14/2019	12/7/2019	N	N	Y	N	N	Y
14	31541	5	U	U	UNDETERMINED	11/11/2019	11/11/2019	Y	N	N	Y	N	N	Y	N	11/8/2019	11/12/2019	Y	Y	Y	N	N	Y
15	31217	56	H	W	SONNEI, GROUP I	10/1/2019	10/1/2019	Y	N	Y	N	N	N	N	Y	9/18/2019		N	Y	Y	N	Y	Y
16	8083	61	H	W	SONNEI	10/14/2019	10/14/2019	Y	N	Y	N	N	N	Y	N	10/7/2019	10/15/2019	N	N	Y	N	N	Y
17	31702	3	U	U	UNDETERMINED	11/27/2019	11/27/2019	Y	N	N	Y	N	N	N	Y	11/24/2019		Y	N	Y	N	N	Y
18	31413	5	U	U	UNDETERMINED	10/28/2019	10/27/2019	Y	N	N	Y	N	N	Y	N	10/25/2019		N	Y	N	Y	N	Y
19	31718	2	H	W	SONNEI	11/27/2019	11/27/2019	Y	N	Y	N	N	N	Y	N	11/18/2019	11/22/2019	N	Y	N	Y	N	Y
20	30960	3	U	U	UNDETERMINED	9/10/2019	9/9/2019	Y	N	N	Y	N	N	N	Y	9/8/2019	9/11/2019	N	Y	Y	N	N	N
21	31550	4	U	W	SONNEI, GROUP I	11/12/2019	11/5/2019	Y	N	Y	N	N	N	N	Y	11/1/2019	11/12/2019	N	N	Y	N	N	N
22	31365	3	U	U	SONNEI	10/18/2019	10/18/2019	Y	N	Y	N	N	N	N	Y	10/10/2019	10/15/2019	Y	Y	N	Y	N	Y
23	17749	33	U	U	UNDETERMINED	10/15/2019	10/15/2019	Y	N	N	Y	N	N	N	Y	UNKNOWN	UNKNOWN	-	-	-	-	-	-
24	31444	4	U	U	UNDETERMINED	10/30/2019	10/29/2019	Y	N	N	Y	N	N	N	Y	10/28/2019	10/31/2019	N	Y	N	Y	N	Y
25	31376	42	U	U	UNDETERMINED	10/21/2019	10/19/2019	Y	N	N	Y	N	N	N	Y	10/8/2019	10/20/2019	N	Y	Y	N	N	Y
26	31346	4	N	W	SONNEI	10/16/2019	10/15/2019	Y	N	Y	N	N	N	N	Y	10/13/2019		N	Y	Y	N	N	Y
27	31527	37	U	U	UNDETERMINED	11/18/2019	11/7/2019	Y	N	N	Y	N	N	N	Y	11/3/2019	11/9/2019	N	Y	N	Y	N	Y
28	31122	5	U	U	UNDETERMINED	9/23/2019	9/21/2019	Y	N	N	Y	N	N	N	Y	9/12/2019	9/20/2019	-	-	-	-	-	-
29	30958	3	U	U	UNDETERMINED	9/10/2019	9/8/2019	Y	N	N	Y	N	N	N	Y	9/8/2019	9/11/2019	Y	Y	N	Y	N	N
30	30959	3	U	U	UNDETERMINED	9/10/2019	9/9/2019	Y	Y	N	Y	N	N	N	Y	9/8/2019		N	N	Y	N	N	Y
31	30887	5	U	U	UNDETERMINED	8/30/2019	8/31/2019	Y	Y	N	Y	N	N	N	Y	8/26/2019		N	Y	N	Y	N	N
32	31521	7	U	U	SONNEI	11/7/2019	11/7/2019	Y	N	Y	N	N	N	N	Y	11/2/2019	11/6/2019	N	Y	Y	N	N	N
33	31472	5	U	U	SONNEI	11/1/2019	11/1/2019	Y	N	Y	N	N	N	N	Y	10/27/2019	11/1/2019	Y	Y	Y	N	N	Y
34	31769	1	H	U	SONNEI, GROUP I	12/6/2019	12/6/2019	Y	N	N	Y	N	N	N	Y	11/29/2019	12/7/2019	N	Y	N	Y	N	N

Example

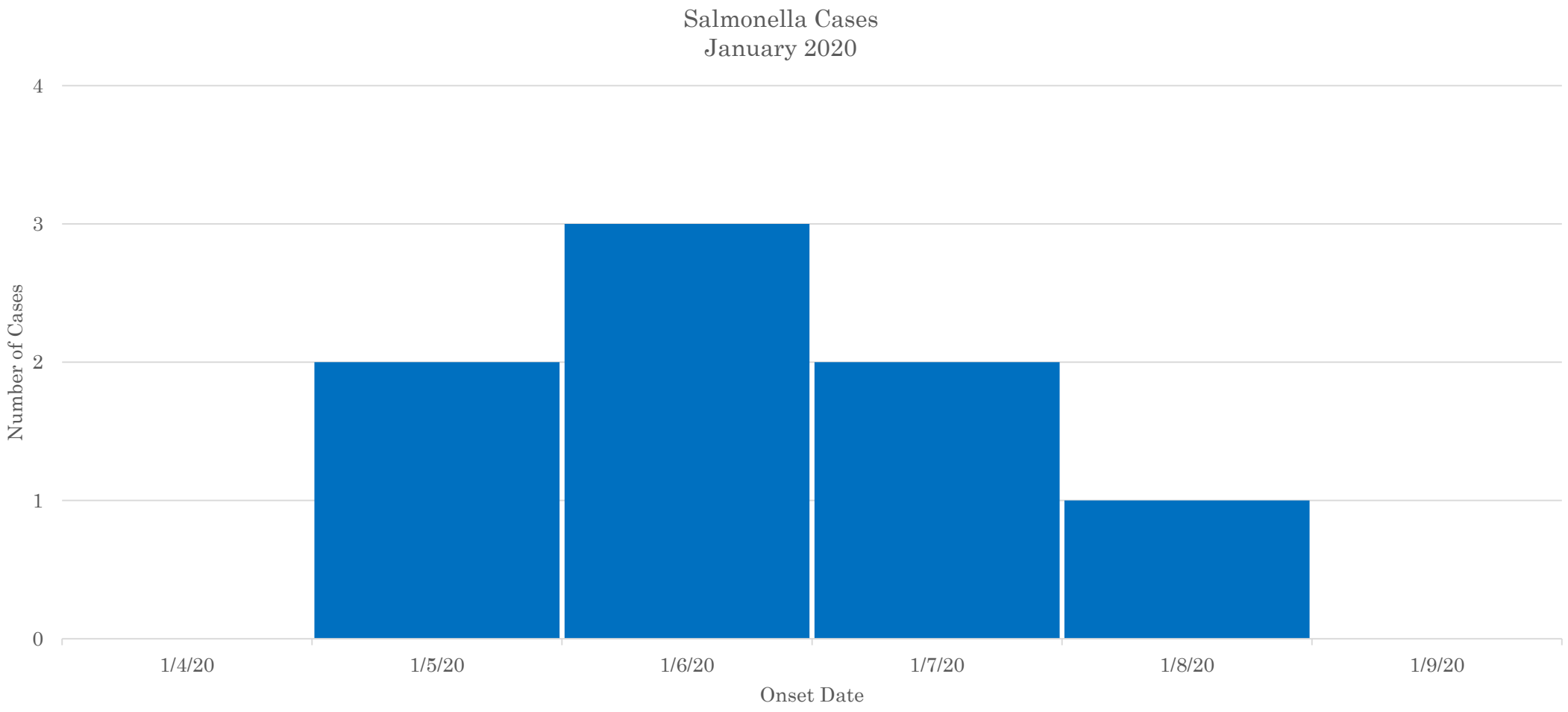
- You receive a call from the City of Lubbock Health Department about a confirmed case (Dr. diagnosed) of Salmonella in a student
- You also notice an increase in call-ins of sick kids with diarrhea and vomiting symptoms
- Call ins are out of school for several days with the same symptoms
- Sick kids appear to be around the same age group

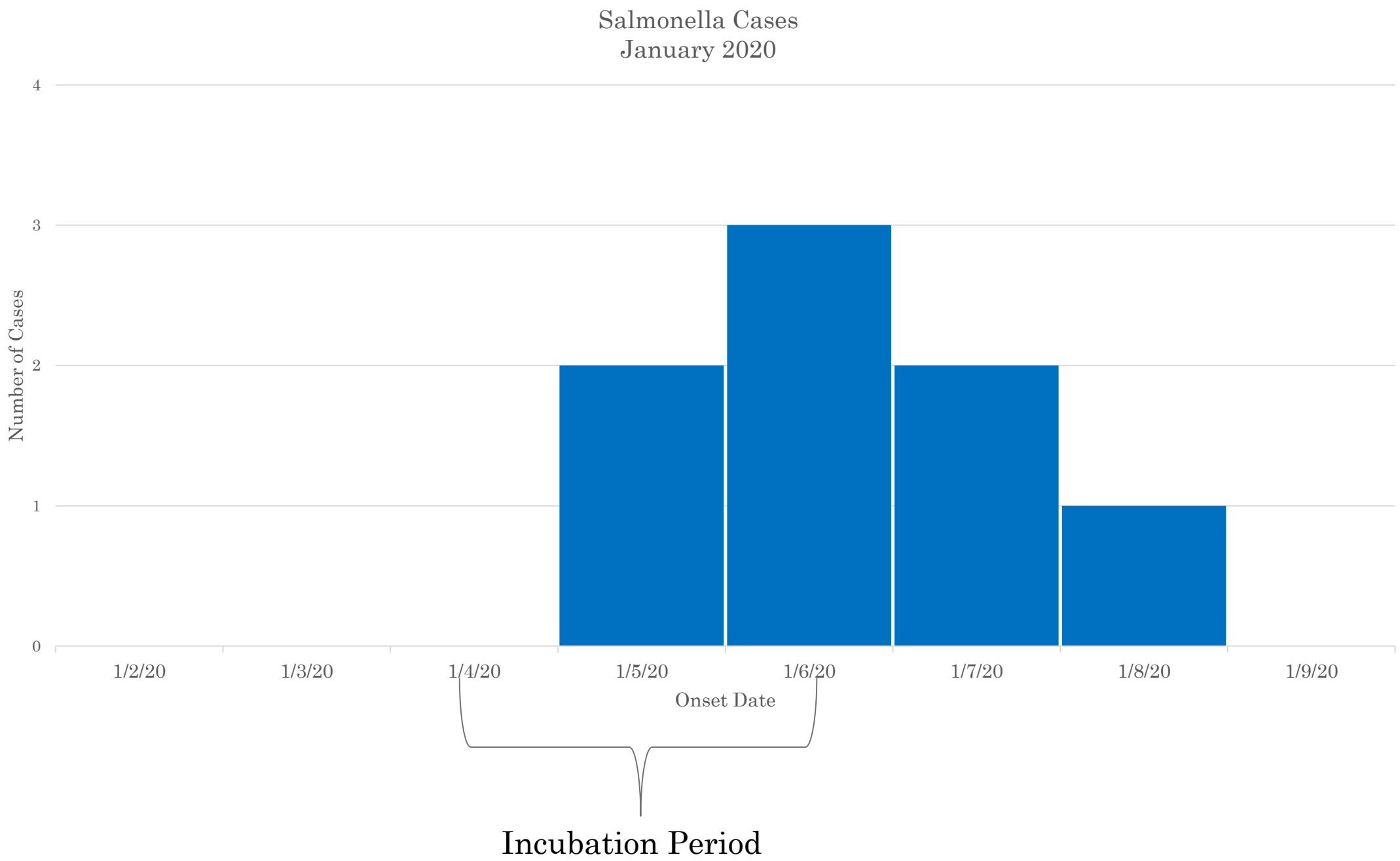
Pt ID	Age	Gender	Symptom Onset	Duration (days)	Vomiting	Fever	Class
12345	6	M	1/6/2020	3	Y	Y	Minnie Mouse
98765	5	F	1/8/2020	4	Y	N	Daffy Duck
32568	6	F	1/7/2020	3	N	Y	Daffy Duck
12816	5	M	1/5/2020	4	Y	Y	Minnie Mouse
25825	6	F	1/6/2020	5	Y	N	Minnie Mouse
38538	5	M	1/7/2020	3	N	Y	Bugs Bunny
18482	6	M	1/7/2020	5	Y	Y	Daffy Duck
82786	5	M	1/7/2020	3	Y	Y	Minnie Mouse

Frequency Chart

- Tally it up!
- Calculate totals of the data you want to analyze
- Graph on a bar or line graph (preferably bar)

Onset Date	Total Count
1/4/2020	0
1/5/2020	2
1/6/2020	2
1/7/2020	3
1/8/2020	1
1/9/2020	0


Salmonella Cases
January 2020
4
3
2
1
0
Number of Cases
1/4/20
1/5/20
1/6/20
1/7/20
1/8/20
1/9/20
Onset Date


Salmonella Cases
January 2020
Number of Cases
4
3
2
1
0
1/2/20
1/3/20
1/4/20
1/5/20
1/6/20
1/7/20
1/8/20
1/9/20
Onset Date
Incubation Period

Conclusion

- You recall Minnie Mouse's class took a field trip to the petting zoo on January 4th
- Daffy Duck and Minnie Mouse's have a shared bathroom
- Salmonella can be caused by eating contaminated food or handling infected animals and their environment
- Potential source of exposure is the animals from the petting zoo with transmission in the bathroom from sick kids
- Prevention: HANDWASHING!

Attack Rate

- Proportion of people who will be ill after exposure or the risk of getting a disease during a specified period
- Help identify the source or exposure that contributes to illness
- Number of ill cases divided by total population
- The higher the attack rate the more likely it is the source of illness

Foodborne Illness Outbreak

			Foods Eaten			
Pt ID	Symptom Onset	Duration (days)	Potato Salad	Chicken	Ill	Not Ill
12345	1/6/2020	3	Y	N	Y	N
98765	1/8/2020	4	N	Y	N	Y
32568	1/7/2020	3	Y	N	Y	N
12816	1/5/2020	4	Y	N	N	Y
25825	1/6/2020	5	N	N	N	N
38538	1/7/2020	3	Y	N	Y	N
18482	1/7/2020	5	N	Y	Y	N
82786	1/7/2020	3	Y	Y	N	Y

			Foods Eaten			
Pt ID	Symptom Onset	Duration (days)	Potato Salad	Chicken	Ill	Not Ill
12345	1/6/2020	3	Y	N	Y	N
98765	1/8/2020	4	N	Y	N	Y
32568	1/7/2020	3	Y	N	Y	N
12816	1/5/2020	4	Y	N	N	Y
25825	1/6/2020	5	N	N	N	N
38538	1/7/2020	3	Y	N	Y	N
18482	1/7/2020	5	N	Y	Y	N
82786	1/7/2020	3	Y	Y	N	Y

	Sick	Not Sick
Potato Salad	3	2
Chicken		

			Foods Eaten			
Pt ID	Symptom Onset	Duration (days)	Potato Salad	Chicken	Ill	Not Ill
12345	1/6/2020	3	Y	N	Y	N
98765	1/8/2020	4	N	Y	N	Y
32568	1/7/2020	3	Y	N	Y	N
12816	1/5/2020	4	Y	N	N	Y
25825	1/6/2020	5	N	N	N	N
38538	1/7/2020	3	Y	N	Y	N
18482	1/7/2020	5	N	Y	Y	N
82786	1/7/2020	3	Y	Y	N	Y

Conclusion:

	Sick	Not Sick	Attack Rate
Potato Salad	3	2	37.5% (3÷8x100)
Chicken	1	2	12.5% (1÷8x100)

Likely source is the potato salad

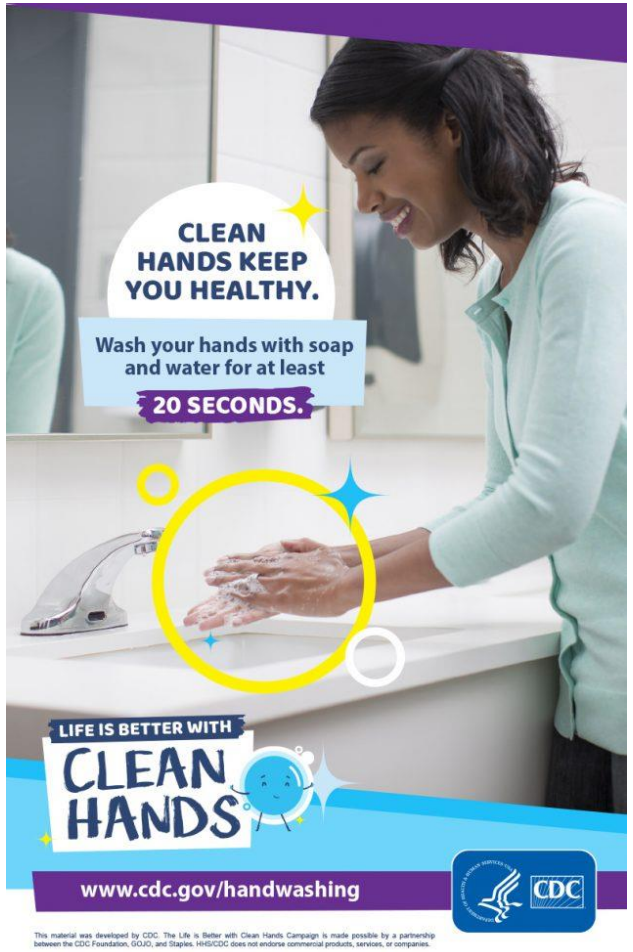
Prevention: Follow proper preparation and storage recommendation

Infection Control

Hand Washing and Environmental Cleaning

Tips

- Perform hand hygiene
  - Hand washing with soap and water for 20 seconds (sing happy birthday twice)
  - Alcohol based hand rub with at least 70% alcohol
- Proper cough etiquette
  - Cover your cough
- Follow exclusion criteria
- https://www.cdc.gov/handwashing



Environmental Cleaning Assessment

- Evaluate surface contamination
- Ensure all products are EPA approved
- Use tools to track cleanliness of areas and shared spaces
  - Audits
  - Workflows, checklists

Glo Germ

- Visual tool for proper hand hygiene
- Used as an audit tool to identify gaps in disinfection and sanitation
  - Liquid Tide© for environmental cleaning

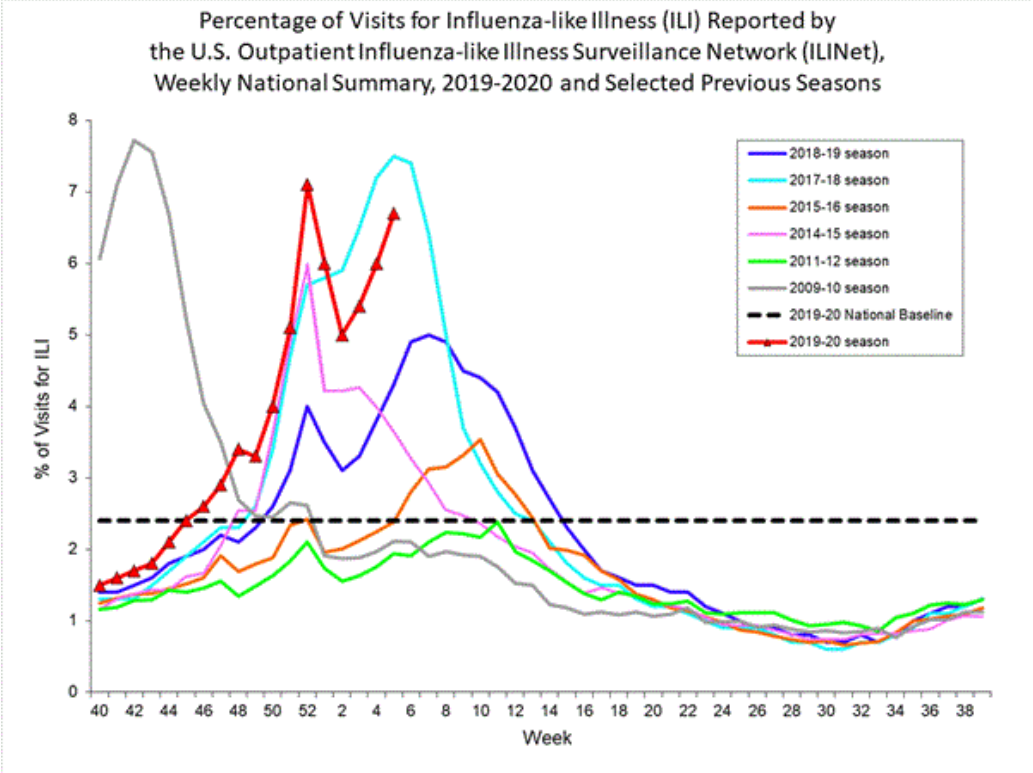
Public Health Awareness

- National Healthy Schools Day*
  - April 7th
- World Hand Hygiene Day
  - May 5th
- Global Hand Washing Day
  - October 15th
- International Infection Prevention Week
  - October 16th- October 22nd
- National Hand Washing Awareness Week
  - December 6th-December 12th
- National Public Health Week*
  - April 6th-April 12th

*Non-infection control

Flu Update- As of February 1st

	Seasonal Totals (Sept. 29th- Feb. 1st)
Positive Flu Tests	129,997 (17.6%)
Influenza A	52,928 (40.7%)
Influenza B	77,069 (59.3%)
Influenza Associated Pediatric Mortality	78

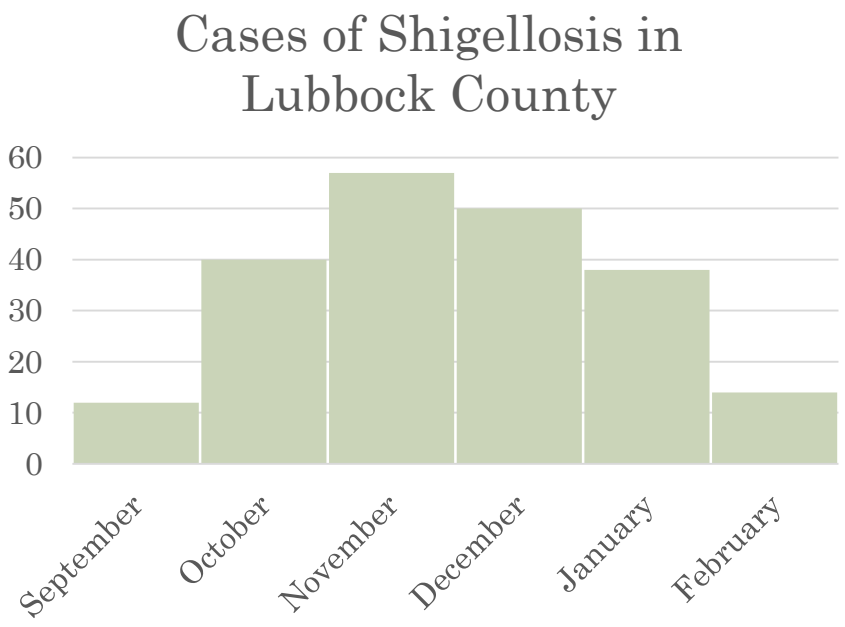


Shigellosis- ~~Wrap up~~ Update

- As of February 12th, 211 cases*
- Average age: 12 (<1 year-76 years)

Month	Number of Cases
September	12
October	40
November	57
December	50
January*	38
February*	14

*Preliminary



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Questions?