Indiana University-Student Epidemiology Response Team (IU-SERT)
WHAT IS IU-SERT?

Person becomes ill

Clinical information
Clinical specimen
Morbidity report
Lab

State Department of Health Laboratories

State Health Department

Local Health Department

IU-SERT

Case Investigation, Health Education

State Department of Health

Centers for Disease Control and Prevention

World Health Organization

PulseNet
HOW WAS IU-SERT CREATED?

- The ISDH and the Indiana University Richard M. Fairbanks School of Public Health (RMFSPH) collaborated to develop a team of public health graduate students to investigate cases and outbreaks of salmonellosis.

- IU-SERT was designed to improve Indiana’s ability to investigate clusters/outbreaks of salmonellosis by obtaining more timely and complete case investigation data.
Enteric team at ISDH starts case investigations using lab or morbidity reports

IU-SERT completes interview with patient

IU-SERT updates exposure information into NBS

IU-SERT adds cases into tracking system and updates lab information in surveillance system

IU-SERT contacts provider for clinical information if missing from morbidity report

IU-SERT attempts to call patient three times, then mails a letter

IU-SERT submits case as loss to follow up after two weeks
FELLOW RESPONSIBILITIES

- Train new IU-SERT interns
- Optimize IU-SERT workflow
- Evaluate IU-SERT program
- Support enteric epidemiologists
Enteric epidemiologists are notified of a cluster or outbreak of cases.

IU-SERT enters cases into a line list on tracking spreadsheet.

IU-SERT enters exposure information into Epi Info and provides enteric epi with exposure line list.

IU-SERT assists with completion of supplemental questionnaires as needed.
ISDH was notified of four cases of salmonellosis associated with school X. Public health officials at the county identified five additional probable cases of ill school attendees.
SUMMER 2019 OUTBREAK OF SALMONELLA TYPHIMURIUM IN SCHOOL X

Foods Eaten at Lunch at School X

This survey was created by the Indiana State Department of Health in partnership with the County Health Department.

Thank you for taking the time to complete this survey. The questions below will ask what your child had for lunch in the past several weeks. Please answer them to the best of your ability. It may be helpful to complete the survey with your child, since they might have a better idea of what they ate at school.

Any information you provide will be helpful in our investigation. Choose the option that best describes whether or not your child ate that food item on a particular day from the options: Yes, Maybe, No, or Don’t Know.

All the information you provide will remain confidential. You don’t have to answer any questions you don’t want to, but your answers may help us figure out what made your child ill and prevent others from getting sick.

Note: You only need to complete the survey for days up to and including the day where your child started to experience symptoms. For example, if your child started having diarrhea on August 13th, you only need to complete the survey for the days up to and including August 13th. You may leave the rest of the days below blank.

Thank you very much for your time!

Patient Information:

What is your child's name? *(must provide value)

What is your child's date of birth? (MM/DD/YYYY) *(must provide value)

What grade is your child in?

Foods Eaten at School on Tuesday, August 13th

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>Maybe</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warrior Burger</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baked Beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choice Fruit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot Dog</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soup of the Week</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salad Bar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ate Food from Home</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How is IU-SERT serving Indiana Counties?

- Reducing burden of high volume case investigations
- Tracking clusters SERT conditions
- Providing assistance to non-SERT counties during outbreak situations

Percent of Salmonellosis and STEC Cases Completed by Year and IU-SERT Status

- SERT
- LHD

<table>
<thead>
<tr>
<th>Year</th>
<th>SERT</th>
<th>LHD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>15.91%</td>
<td>84.09%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2016</td>
<td>29.46%</td>
<td>70.54%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2017</td>
<td>42.67%</td>
<td>57.33%</td>
<td>100.00%</td>
</tr>
<tr>
<td>2018</td>
<td>43.31%</td>
<td>56.69%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>
QUicker RESPONSES TO CASE INVESTIGATIONS
FEWER CASES LEFT UNINVESTIGATED
REDUCED BURDEN/INVESTIGATION WORKLOAD FOR LHDS
IU-SERT EVALUATION

QUICKER RESPONSES TO CASE INVESTIGATIONS

Case Investigations with Completed Patient Interview

<table>
<thead>
<tr>
<th>SERT Status</th>
<th>Mean Investigation Time</th>
<th>Median Investigation Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-SERT</td>
<td>7.4 days</td>
<td>3 days</td>
</tr>
<tr>
<td>SERT</td>
<td>6.1 days</td>
<td>2 days</td>
</tr>
</tbody>
</table>

P-value = 0.0034

Case Investigations with or without Completed Patient Interview

<table>
<thead>
<tr>
<th>SERT Status</th>
<th>Mean Investigation Time</th>
<th>Median Investigation Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-SERT</td>
<td>11.7 days</td>
<td>4 days</td>
</tr>
<tr>
<td>SERT</td>
<td>9.1 days</td>
<td>4 days</td>
</tr>
</tbody>
</table>

P-value < 0.0001
In the four year study period, 220 cases (9.21%) were closed as not investigated for LHD investigations, versus just four cases (0.33%) for SERT.

P-value < 0.0001
The average case investigation takes about 2 hours to complete.

Outbreak cases take additional time to investigate.

In four years, we provided counties with 2,420 hours of case investigation assistance.
WHAT IS NEXT FOR IU-SERT?

- Evaluating intern and LHD experiences with IU-SERT
- Piloting CareWeb use for clinical information
- Analyzing effectiveness of text messaging services to contact patients
- Testing use of Accruent to look up patient contact information
EXPANSION OF IU-SERT

15 Counties → 59 Counties
IU-SERT Interns → IU-SERT Fellow & IU-SERT Interns
One Condition → Six Conditions*
Thank You!

2015

2019

East Chicago & Gary

LaPorte
St Joseph
Elkhart
Marshall
Kosciusko
Whitley
Allen

Lake
Knox
Cass
Vigo
Jasper
Clay
White
Rush
Pike
Parke
Clark
Greene
LaPorte
Ripley
Grant
Perry
Posey
Gibson
Noble
Wells
Adams

Allen
Jay
Lake
Knox
Cass
Vigo
Jasper
Clay
White
Rush
Pike
Parke
Clark
Greene
LaPorte
Ripley
Grant
Perry
Posey
Gibson
Noble
Wells
Adams

SERT
Non-SERT