Multistate Outbreaks of Human *Salmonella* Infections linked to Backyard Poultry, 2019

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USAHA Committee on Diseases of Poultry and Other Avian Species  
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Salmonellosis Outbreaks and Outbreak-Associated Illnesses Linked to Live Poultry—United States, 1990–2019
Salmonellosis outbreaks continue to be linked to contact with backyard poultry

- The outbreaks in 2019 represent the largest recorded number of people to become sick with *Salmonella* after contact with backyard poultry.

- **1,134 people infected** with the outbreak strains of *Salmonella* were reported from 49 states and the District of Columbia.
People Infected with the Outbreak Strains of *Salmonella* by State of Residence, 2019 (n=1134)
What is missing?

- Denominator data
  - How many people own or are exposed to backyard poultry?
Of 988 ill people with information available, 212 (21%) were children younger than 5 years.
13 Multistate *Salmonella* Illness Outbreaks Linked to Live Poultry Contact in 2019

- 13 multistate outbreaks of *Salmonella* serogroup B, C and D infections
- Serotypes Agona, Alachua, Altona, Anatum, Braenderup, Enteritidis, Infantis, Manhattan, Montevideo, Muenchen, Newport, and Oranienburg
- 1,134 people infected with the outbreak strains of *Salmonella* were reported from 49 states and the District of Columbia
392 (63%) of 619 ill people reported contact with chicks or ducklings.
Overview of Demographic Characteristics and Outcomes for 2019 Outbreaks

<table>
<thead>
<tr>
<th>Demographics</th>
<th>n (%)</th>
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<tbody>
<tr>
<td>Age range (median), (n=988)</td>
<td>&lt;1 to 99 (34)</td>
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<tr>
<td>Age categories in years (n=1101)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>212 (21%)</td>
</tr>
<tr>
<td>5 to 17</td>
<td>129 (13%)</td>
</tr>
<tr>
<td>18 to 59</td>
<td>450 (46%)</td>
</tr>
<tr>
<td>≥60</td>
<td>197 (20%)</td>
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<tr>
<td>Sex (n=1070)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Female</td>
<td>600 (56%)</td>
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<table>
<thead>
<tr>
<th>Outcomes</th>
<th>n (%)</th>
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<td>Hospitalization (n=740)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>219 (30%)</td>
</tr>
<tr>
<td>Died (n=742)</td>
<td></td>
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<tr>
<td>Yes</td>
<td>2 (&lt;1%)</td>
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Types of Live Poultry Contact Reported by Ill People in 2019 (n=266)

- Touched Poultry: 60%
- Touched Cages: 52%
- Fed Poultry: 52%
- Cleaned Cages: 34%
- Gathered Eggs: 24%
- Snuggled Poultry: 14%
- Kissed Poultry: 7%
Poultry Ownership in 2019

81% (180/221) of ill people reported owning live poultry

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<tr>
<th>Reported time Owning Poultry (n=248)</th>
<th>n (%)</th>
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<tbody>
<tr>
<td>Less than 6 months</td>
<td>76 (42%)</td>
</tr>
<tr>
<td>6 months to &lt;1 year</td>
<td>10 (6%)</td>
</tr>
<tr>
<td>1 year to &lt;5 years</td>
<td>41 (23%)</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>53 (29%)</td>
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</tbody>
</table>
Reasons for Purchasing Poultry Reported by Ill People

- Eggs: 60%
- Hobby: 48%
- Meat: 13%
- Other Reason: 8%
- Shows or Fairs: 5%
Handling Behaviors

- **Hand Washing**
  - 84% (164/195) of people reported they wash their hands ‘always’ or ‘almost always’ after handling live poultry
  - 83% (161/193) of people reported they wash their hands ‘always’ or ‘almost always’ after touching cages where live poultry are kept
Handling Behaviors Continued

- **Environmental**
  - 33% (67/202) of people reported they keep their birds indoors
  - 56% (104/187) of people reported they wear the same shoes in their chicken coop/cage and inside their home
Awareness

- **Salmonella Awareness**
  - 67% (126/189) of people reported they were aware of the connection between *Salmonella* and live poultry
Occupational Exposure

Ill people have potential occupational exposure

• Meaning they reported contact with live poultry at work, such as at a feed store

• Some only have contact with live poultry at work and no other location, such as at home
Why are outbreaks getting larger? What are we doing for prevention?
Laboratory Results Example, 2019

Key:
- US human isolates 2019
- US human isolates 2018
- US animal isolates 2018 and 2019
- US food (chicken) isolates 2019

Closely related*

* determined using cgMLST analysis
HEALTHY FAMILIES AND FLOCKS

Live poultry, such as chickens, ducks, geese, and turkeys, often carry harmful germs such as Salmonella. While it usually doesn’t make the birds sick, Salmonella can cause serious illness when it is passed to people.

HANDBRINGING PROTECTS YOU FROM GERMS

• Always wash your hands with soap and water right after touching live poultry or anything in the area where they live and roam.
• Adults should supervise handwashing for young children.
• Use hand sanitizer if soap and water are not readily available.

HANDLE BIRDS SAFELY

• Children younger than 5 years, adults older than 65 years, and people with weakened immune systems should not handle or touch chicks, ducklings, or other live poultry.
• Do not bring chicks, ducklings and other live poultry to schools, childcare centers, or nursing homes.
• Do not snuggle or kiss the birds, touch your mouth, or eat or drink around live poultry.

SAFELY CLEAN COOPS

• Clean any equipment used to care for live poultry outside, such as cages or feed or water containers.
• Set aside a pair of shoes to wear while taking care of poultry and keep those shoes outside of the house.

POULTRY BELONG OUTSIDE