NARMS Now: Human Data Navigation Guide
Overview

- **NARMS Now: Human Data, an interactive tool from CDC**
  - makes it easy and quick to find out about antibiotic resistance in bacteria isolated from sick people
    - data are available for *Campylobacter*, *E. coli* O157, *Salmonella* and *Shigella*—bacteria transmitted commonly through food
  - allows users to access antibiotic resistance data by bacterial species and serotype, antibiotic, year, and geographic region
  - illustrates how resistance has changed over time
    - data can be viewed on interactive maps, graphs, or tables
  - provides access to the most up-to-date results
Getting Started

With NARMS Now: Human Data, you can access human antibiotic resistance data online at

www.cdc.gov/narmsnow
Searching NARMS Now: Human Data

- Go to www.cdc.gov/narmsnow.
- There you’ll see the search options where you can apply filters based on your interests.

**Search Options**

<table>
<thead>
<tr>
<th>Bacteria</th>
<th>Serotype</th>
<th>Antibiotic</th>
<th>From</th>
<th>To</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Salmonella</em></td>
<td>Typhi</td>
<td><em>Nalidixic Acid</em></td>
<td><em>1996</em></td>
<td><em>2020</em></td>
<td><em>All</em></td>
</tr>
</tbody>
</table>

- **Bacteria**: Choose *Salmonella, Shigella, E. coli O157*, or *Campylobacter*
- **Species or serotype**: Choose the species or serotype
- **Antibiotic**: Choose one or more antibiotics
  - Select “by pattern” to choose common antimicrobial combinations
- **Year range**: Choose the date range
- **Site(s)**: Choose all states or a specific state.
Using the Dashboard

After you define search criteria and click “Search”, the dashboard will show a map, line graph, and quick statistics.
Viewing the Map

- Each state is highlighted in a color based on the percentage of isolates resistant that year.
  - Red is for the states with the highest percentage of resistant isolates while green is for the states with the lowest percentage of resistant isolates.
- States that did not participate in NARMS that year are shaded grey with white hash marks.
- States with no isolates tested that year are white.
- Years where only preliminary data are available are followed by an asterisk.
Using the Map

- Press the button above the map to see data by year.
- Hit the button to stop at a specific year.
- Place cursor over a state to display the percentage of isolates resistant for the selected year.
Viewing the Line Graph

- Place cursor over a data point to see the percentage of isolates resistant for that year.
- Place cursor above and below the data point to see the upper and lower 95% confidence intervals.
- Data in the shaded area to the right of the vertical dashed line represent preliminary years.

* Preliminary data include records from years after 2017, when isolate collection and/or testing is still in progress.
Selecting Multiple Antibiotics

- Select more than one antibiotic in the antibiotic selection list
- In the line graph, you can view the data in two ways:
  - Combination – resistance to both antibiotics is displayed with confidence intervals
  - Individual – resistance to each antibiotic is shown in separate lines. Each antibiotic can be toggled on or off in the key for the line graph.
Selecting Common Antibiotic Patterns

- Check “by pattern” above the antibiotic select list to see selection options for various antibiotic groupings
- You can select different types of patterns:
  - By Pattern – by common multi-drug resistant (MDR) patterns. Cursor over the pattern to see the antibiotics included
  - By Class – by common Antimicrobial classes
  - By Class Count – by CLSI (Clinical and Laboratory Standards Institute) counts
Viewing Resistance by Year for One State

Place cursor along the bar to see the number and percentage of isolates that were susceptible, intermediate, and resistant for each year selected.

2008 Intermediate: 34/58 (58.6%)
Quick stats provide statistics on the number of isolates tested and number of resistant isolates for all selected years.
Select “Tabular” to display the data in a table format.

Dashboard view

Tabular view
Viewing Data Tables

View data from a map or line graph as a table by changing the display.

Resistance By State

<table>
<thead>
<tr>
<th>Year</th>
<th>State</th>
<th>Total tested</th>
<th>Number resistant</th>
<th>% resistant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>California</td>
<td>30</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>1999</td>
<td>Colorado</td>
<td>2</td>
<td>1</td>
<td>50.0</td>
</tr>
<tr>
<td>1999</td>
<td>Connecticut</td>
<td>6</td>
<td>3</td>
<td>50.0</td>
</tr>
<tr>
<td>1999</td>
<td>Florida</td>
<td>19</td>
<td>2</td>
<td>10.5</td>
</tr>
<tr>
<td>1999</td>
<td>Georgia</td>
<td>2</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>1999</td>
<td>Kansas</td>
<td>1</td>
<td>1</td>
<td>100.0</td>
</tr>
<tr>
<td>1999</td>
<td>Maryland</td>
<td>3</td>
<td>2</td>
<td>66.7</td>
</tr>
<tr>
<td>1999</td>
<td>Massachusetts</td>
<td>17</td>
<td>3</td>
<td>17.7</td>
</tr>
<tr>
<td>1999</td>
<td>Minnesota</td>
<td>1</td>
<td>1</td>
<td>100.0</td>
</tr>
<tr>
<td>1999</td>
<td>New Jersey</td>
<td>20</td>
<td>10</td>
<td>43.5</td>
</tr>
<tr>
<td>1999</td>
<td>New York State</td>
<td>46</td>
<td>4</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Resistance by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Total tested</th>
<th>Resistant</th>
<th>% resistant</th>
<th>Lower 95% CI</th>
<th>Upper 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1997</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1998</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1999</td>
<td>165</td>
<td>32</td>
<td>19.4</td>
<td>13.7</td>
<td>26.3</td>
</tr>
<tr>
<td>2000</td>
<td>179</td>
<td>39</td>
<td>21.8</td>
<td>16.0</td>
<td>28.6</td>
</tr>
<tr>
<td>2001</td>
<td>195</td>
<td>59</td>
<td>30.3</td>
<td>23.9</td>
<td>37.2</td>
</tr>
<tr>
<td>2002</td>
<td>197</td>
<td>46</td>
<td>23.4</td>
<td>17.6</td>
<td>29.9</td>
</tr>
<tr>
<td>2003</td>
<td>331</td>
<td>123</td>
<td>37.8</td>
<td>32.5</td>
<td>43.2</td>
</tr>
<tr>
<td>2004</td>
<td>305</td>
<td>127</td>
<td>41.6</td>
<td>36.0</td>
<td>47.4</td>
</tr>
<tr>
<td>2005</td>
<td>318</td>
<td>154</td>
<td>48.4</td>
<td>42.8</td>
<td>54.1</td>
</tr>
<tr>
<td>2006</td>
<td>324</td>
<td>176</td>
<td>54.3</td>
<td>48.7</td>
<td>59.9</td>
</tr>
</tbody>
</table>

* Preliminary data include results from years after 2017 when testing collection and testing is in progress.
Click on the links in the “Download” section to:

- download data related to your search
- download all NARMS human isolate data
- view the data dictionary

Data will be downloaded in a CSV (Comma Separated Values) format which is viewable in Excel.
At the bottom of the page, you’ll find links to helpful resources:

- NARMS Now: Human Data navigation guide
- CDC NARMS website
- NARMS Now: Integrated Data (Humans, Meat, Animals)
- Frequently asked questions about antibiotic resistance and food safety
- CDC NARMS contact information
Questions?

Please contact CDC NARMS at

EntericBacteria@cdc.gov