National Antimicrobial Resistance Monitoring System (NARMS)
Quarterly Conference Call

Date: **Thursday, March 15, 2007**
Time: 2:00 – 3:00 p.m. (ET)
Toll-free number: 888-790-3051
Passcode: 54867
Leader: Felicita Medalla (fhm1@cdc.gov)

A. Administrative
- Roll call/Introductions

B. NARMS-Related Activities and Special Projects
1. NARMS-PulseNet linking [Kathryn Teates (kws3@cdc.gov)]
2. PFGE testing of NARMS isolates [Susan Van Duyne (mdv9@cdc.gov)]

C. NARMS Routine Surveillance
1. NARMS submission scheme
-New shipping regulations for *E. coli* O157
2. Non-*cholerae Vibrio*
-Submission guidelines
-Testing of non-*cholerae Vibrio* isolates at the *Vibrio* Reference Laboratory
-*V. parahaemolyticus:* antimicrobial susceptibility testing, 2003-2004
3. *Listeria monocytogenes*
-Antimicrobial susceptibility testing, 2000-2005 (ISOPOL XVI poster presentation)
4. Status of 2006 isolate submissions
5. Status of 2004 annual report
-Revised breakpoints for *Campylobacter:* azithromycin, erythromycin, clindamycin, gentamicin, nalidixic acid

D. Outbreak Isolates
-Submission scheme update

E. FY07 ELC Update
-GetSmart on the Farm [Bernadette Hartman (fpf0@cdc.gov)]

F. Status of FWA and IRB

G. Status of Manuscripts

H. Upcoming conference calls, meetings, and abstract deadlines

Next NARMS Quarterly Conference Call:
June 7, 2007 (Thursday), 2:00 – 3:00 pm ET

Meetings	Location	Date	Abstract Submission Deadline
ISOPOL XVI (Listeriosis)	Savannah, GA	March 20-23, 2007	November 2006
EIS	Atlanta, GA	April 16-20, 2007	January 12, 2007
PulseNet	Providence, RI	April 16-19, 2007	TBA
ASM	Toronto, Canada	May 21-25, 2007	January 8, 2007
APHL	Jacksonville, FL	June 3-5, 2007	January 12, 2007
CSTE	Atlantic City, NJ	June 24-28, 2007	December 1, 2006
NFID	Bethesda, MD	June 25-27, 2007	March 2, 2007
AVMA	Washington, DC	July 14-18, 2007	-
ICAAC	Chicago, IL	September 17-20, 2007	May 4, 2007
IDSA	San Diego, CA	October 4-7, 2007	April 16, 2007

ATTACHMENT 1
National Antimicrobial Resistance Monitoring System (NARMS)
Routine Enteric Pathogen Isolate Submission to CDC-NARMS*
Updated March 14, 2007

Pathogen	Isolate Submission Requirement (Sampling scheme)	Isolate Submission Frequency (When to Submit)	Contact Person (Attention to)	Form	Shipping Address (Where to Submit)
Non-Typhi *Salmonella* **	every 20th isolate	Quarterly	Kevin Joyce	NARMS log sheet*	Attention: Kevin Joyce NARMS Laboratory Centers for Disease Control and Prevention Building 17, Room 1227 MS G-29 1600 Clifton Rd., NE Atlanta, GA 30333 Phone number: 404-639-1944
E. coli O157	every 20th				
Shigella	every 20th				
Salmonella Typhi	ALL				
Campylobacter **(FoodNet Sites Only)**	Every 5th, 2nd, or all isolates (varies by state)	Quarterly			
Non-cholerae *Vibrio*	ALL	Quarterly			
*Listeria monocytogenes****	ALL	Immediately upon receipt	Lewis Graves	DASH form	Attention: Lewis Graves *Listeria* Reference Laboratory Centers for Disease Control and Prevention Data & Specimen Handling Sect. (DASH) 1600 Clifton Rd., NE Atlanta, GA 30333 Phone number: 404-639-1430
Vibrio cholerae ****	ALL	Immediately upon receipt	Cheryl Bopp	DASH form	Attention: Cheryl Bopp *Vibrio cholerae* Reference Activity Centers for Disease Control and Prevention Data & Specimen Handling Sect. (DASH) 1600 Clifton Rd., NE Atlanta, GA 30333 Phone number: 404-639-1798

***Use NARMS isolate submission log sheets to submit routine NARMS isolates. A specific log sheet is available for each pathogen. NARMS routine submission is based on the sampling scheme described above.**

**** After the paratyphoid fever study ended on 3/31/2006, NARMS requested sites to continue submitting ALL Paratyphi isolates with collection date until 12/31/2006 using the special Paratyphi log sheet. Paratyphi isolates with collection date of January 2007 or later are included in NARMS routine submission if part of "1 in 20" sampling for non-Typhi *Salmonella*.**

*****Please send ALL *Listeria monocytogenes* isolates immediately upon receipt to Lewis Graves and USE DASH FORM for ALL isolates (one isolate per DASH form). Please provide ALL NARMS requested information on the DASH form.**

******Please send ALL *V. cholerae* isolates immediately upon receipt to Cheryl Bopp and USE DASH FORM for ALL isolates (one isolate per DASH form).**

Vibrio parahaemolyticus Antimicrobial Susceptibility Testing

Nancy Puhr
Cheryl Bopp
Epidemic Investigations Laboratory

Submission Guidelines for Non-cholera *Vibrio* Isolates

- **Problem**: *Vibrio* isolates often remain viable for only a month on a slant
- Please transfer isolates and check for growth before sending
- If shipping is delayed for more than 30 days, please store isolates
  - Frozen at -70°C
  - Or overlay fresh growth with sterile mineral oil
  - Or transfer isolates once a month

Methods

- Antimicrobial susceptibility was determined by E-test (AB-Biodisk, Piscataway, NJ)
- Antimicrobials tested
  - Ampicillin (AM)
  - Cephalothin (CE)
  - Ciprofloxacin (CI)
  - Chloramphenicol (CL)
  - Kanamycin (KM)
  - Nalidixic acid (NA)
  - Streptomycin (SM)
  - Tetracycline (TC)
  - Trimethoprim/sulfamethoxazole (TS)

Antimicrobial Resistance *Vibrio parahaemolyticus,* 2003-2004

- A total of 147 *V. parahaemolyticus* isolates were tested from 2003-2004
- 75/147 (51%) had ampicillin MICs of $\geq$ 32 µg/ml
  - Resistant by Enterobacteriaceae interpretive criteria,
- Resistance to other antimicrobials was not observed

Antimicrobial Susceptibility Testing Results of 243 *Listeria monocytogenes* Isolates from Patients in the USA, 2000-2005

A. M. ThurdeKoos, K. Gay, L. Graves, F. Matcha, R. Broeker, K. Joyce, and T. M. Chiller

Enteric Diseases Epidemiology Branch

Division of Foodborne, Bacterial and Mycotic Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (pending), Centers for Disease Control and Prevention, Atlanta, GA

Abstract (Amended)

- **Background:** *Listeria monocytogenes* can cause systemic illness with high morbidity and mortality. Immunocompromised persons, pregnant women and newborns are especially vulnerable. Treatment with antibiotics is indicated. Increasing antibiotic resistance is a major problem among Gram positive bacteria but little is known about resistance in *L. monocytogenes*.
- **Methods:** From 2000-2005, 2093 *L. monocytogenes* isolates were received at CDC from all states. A total of 243 isolates were selected for testing; 209 isolates of 3 major serotypes (1/2a, 1/2b, and 4b), 32 isolates from other serotypes, and 20 isolates from 2 major outbreaks. Of these 261, 243 isolates were available for testing. Antimicrobial susceptibility was determined by broth microdilution to ampicillin, clindamycin, ciprofloxacin, erythromycin, gentamicin, penicillin, tetracycline, and trimethoprim/sulfamethoxazole. Where no breakpoints specific to *L. monocytogenes* were defined, interpretive criteria in CLSI M45-P were used.
- **Results:** No resistance to ampicillin, gentamicin or trimethoprim/sulfamethoxazole was detected using generic breakpoints. Resistance was detected to erythromycin (0.4%) and tetracycline (1%). One isolate (4b) was resistant to erythromycin. Of the 3 isolates resistant to tetracycline, two were serotype 1/2b and one was 4b.
- **Conclusion:** Using generic breakpoints, we found little resistance to clinically important antibiotics among *L. monocytogenes* isolates during a 6-year period. Common serotypes varied in resistance to tetracycline. Low frequency of erythromycin and tetracycline resistance was found, and has been reported to be related to an intrinsic efflux mechanism. It will be important to periodically monitor antimicrobial susceptibility of *L. monocytogenes* for changes in resistance.

Background

- ***Listeria monocytogenes*** **is among the most frequent causes of death due to foodborne illness in the United States, accounting for more deaths during outbreaks than any other pathogen.**
- **Immunocompromised persons, pregnant women and newborns are especially vulnerable.**

Antimicrobial Therapy

- **Ampicillin or penicillin G combined with an aminoglycoside, such as gentamicin, is the recommended treatment for listeriosis.**
- **Trimethoprim synergized with sulfamethoxazole is a second-choice therapy.**
- **Alternative antimicrobials are indicated for patients with an allergy to, or intolerance of, the drugs of choice.**

Antimicrobial Resistance

- **Increasing antibiotic resistance is a major problem among Gram-positive bacteria but little is known about resistance in *L. monocytogenes*.**
- **Since no known resistance to penicillins has been described, a susceptible-only breakpoint of ≤2 µg/mL was assigned.**
- **A trimethoprim-sulfamethoxazole minimal inhibitory concentration (MIC) of ≥4/76 µg/mL is the only currently available CLSI resistance breakpoint for *Listeria.***

Isolate Collection

- **From 2000-2005, 2093 *Listeria monocytogenes* isolates were received at CDC from the US**
- **10 percent of isolates submitted to CDC from clinical cases were examined**
- **Isolates were predominantly from blood and cerebrospinal fluid**
- **Identification of isolates was confirmed in the CDC reference laboratory by standard methods**

Isolates Selected for Testing

- **Surveillance Isolates (n=223)**
  - **A total of 244 sporadic *L. monocytogenes* isolates were selected for testing after removing known outbreaks**
    - **Including 10% (209/2093) of isolates of the three major serotypes (1/2a, 1/2b, and 4b) and all 35 isolates of other serotypes (1/2c, 3a, 3b, 4a, and 4c)**
    - **Of these 244 isolates, 223 (91%) were available for antimicrobial susceptibility testing**
- **Outbreak Isolates (n=20)**
  - **Ten patient isolates were included from each of two major US multistate listeriosis outbreaks, 1998-99 and 2002**
    - **1998-99 outbreak isolates were of multiple pulsed-field gel electrophoresis (PFGE) patterns. Isolates for testing were randomly selected based on PFGE pattern differences.**
    - **2002 outbreak isolates were of a single PFGE pattern. Isolates for testing were randomly selected.**

Antimicrobial Susceptibility Testing for *Listeria monocytogenes*

***Listeria* susceptibility to the following antibiotics was tested by microbrothdilution using a Sensititre® panel for Gram-positive bacteria, GPN3F (Trek Diagnostics, Cleveland, Ohio):**

Ampicillin
Ceftriaxone
Ciprofloxacin
Clindamycin
Daptomycin
Erythromycin
Gatifloxacin
Gentamicin
Levofloxacin
Linezolid
Oxacillin
Penicillin G
Quinupristin-dalfopristin
Rifampin
Tetracycline
Trimethoprim-sulfamethoxazole
Vancomycin

PCR Testing

- **Crude DNA was prepared by suspending 4 or 5 *L. monocytogenes* colonies in 100 µL of water**
- **PCR reactions contained 1 µL of crude DNA suspension, 0.4 M of each primer and 25 µL of HotStar Taq Master Mix (Qiagen) in a final volume of 50 µL**
- **PCR was carried out in a thermal cycler (MJ Research) programmed with an initial 15-min denaturing step at 95°C, followed by 30 s at 94°C, 30 min at 50°C, and 30 s at 72°C for 35 cycles**

Table 1. PCR Primers

Gene	Primers	Positive Control
ermB[15]	ermB F: ttggaacaggtaaagggcatt ermB R: tttggcgtgtttcattgcttg	UW1965, *E. faecium*
mefA[14]	mef F: agtatcattaatcactagtgc mef R: ttcttctggtactaaaagtgg	CS111, *S. pneumoniae*
tetM[13]	tet M F: gttaaatagtgttcttggag tet M R: ctaagatatggctctaacaa	pJ13, *E. coli*

Distribution of MICs among *Listeria monocytogenes* from humans in the United States, 2000-2005 (n=243)

Antimicrobial	Percent of all isolates with MIC (µg/mL) of: 0.06	0.12	0.25	0.5	1	2	4	8	16	32	64	128
Ampicillin		0.8	7	48.1	41.2	2.9						
Ceftriaxone									0.4	5.8	15.6	78.2
Ciprofloxacin						47.3	52.7					
Clindamycin			0.4	0.4	5.3	53.5	40.3					
Daptomycin							8.6	56	35.4			
Erythromycin			14.4	82.7	2.5			0.4				
Gatifloxacin					81.1	18.9						
Gentamicin						99.6	0.4					
Levofloxacin					2.1	72	25.9					
Linezolid						1.6	20.2	73.7	4.5			
Oxacillin						0.4	15.2	73.7	10.7			
Penicillin G		2.1	47.7	46.9	3.3							
Quinupristin-dalfopristin					4.9	93.4	1.6					
Rifampin				98.8	1.2							
Tetracycline						70.8	28			1.2		
Trimethoprim-sulfamethoxazole				99.6	0.4							
Vancomycin						86.8	13.2					

Notes:

*A single vertical bar indicates the CLSI susceptible breakpoint for each drug

*Double vertical bars indicate the CLSI resistant breakpoint for each drug

*Unshaded areas represent SensiTitre MIC ranges

*Figures above the SensiTitre range were reported as ">" the highest dilution range for that drug

*Figures equal to or lower than the SensiTitre range were reported as the lowest dilution range for that drug

Susceptibility Test Results

- **All 243 *L. monocytogenes* were susceptible to ampicillin and penicillin G with MICs ≤2 µg/mL**
- **All isolates had trimethoprim-sulfamethoxazole MICs below the CLSI resistance breakpoint of 4/76 µg/mL**
- **While CLSI does not have *Listeria* interpretative criteria for gentamicin, the relatively low MICs are consistent with those of other studies**
- **Ciprofloxacin MICs were at or above the highest dilution of the GPN3F panel**
- **Newer fluoroquinolones, such as gatifloxacin and levofloxacin, were relatively more susceptible**
- **Rifampin and vancomycin MICs were at the lower part of each Gram-positive dilution range**
- **99.6% of *L. monocytogenes* had ceftriaxone MICs ≥32 µg/mL**
- **Daptomycin and linezolid MICs would be interpreted as nonsusceptible using the respective CLSI criteria of ≤1and ≤4 µg/mL established for other pathogens**

Erythromycin PCR Results

- **Erythromycin MICs were ≤1 µg/mL for all but one *L. monocytogenes* isolate**
  - **Isolate J3386 (serotype 4b) was isolated in New York during 2005 and had an erythromycin MIC ≥4 µg/mL**
- **Erythromycin resistance determinants, *ermB* and *mefA*, were screened for in J3386 by PCR using previously described primers**
  - ***ermB* was not detected in J3386**
  - ***mefA* was found in J3386**
- **Tetracyline MICs were ≤4 µg/mL for all but three *L. monocytogenes* isolates**
  - **J0064S from Utah in 2000 (serotype 1/2b)**
  - **J3748 from New York in 2000 (serotype 1/2b)**
  - **J2001S from Georgia in 2002 (serotype 4b)**
- **These isolates had tetracycline MICs ≥32 µg/mL and were screened for tetracycline resistance determinants**
  - ***tetM* was detected in strains J0064S, J2001S and J3748**
  - **No additional tetracycline resistance determinants were found**

Discussion

- **The results of this study substantiate the empiric treatment of listeriosis following recommendations in the medical literature without the results of susceptibility testing.**
- **Rifampin and vancomycin MICs were at the lower part of each Gram-positive dilution range, suggesting good *intro vitro* activities for these drugs.**
- **Clindamycin and quinupristin-dalfopristin MIC distributions were somewhat higher than those of other Gram-positive pathogens possibly indicating a lower affinity for the *L. monocytogenes* ribosomal target site.**
- **99.6% of *L. monocytogenes* in this study had ceftriaxone MICs ≥32 µg/mL. These findings are in agreement with other reports of intrinsic cephalosporin resistance.**
- **Daptomycin and linezolid MICs would be interpreted as nonsusceptible using the respective CLSI criteria of ≤1and ≤4 µg/mL established for other pathogens. However, reports of resistance against these newer drugs are rare and wild-type MIC distributions need to be determined.**
- ***L. monocytogenes* isolates containing erythromycin resistance determinant *ermB* have been reported however this was not detected in our isolates.**
- **Erythromycin resistance determinant *mefA* was found in isolate one *L. monocytogenes* isolate.**
- **Tetracycline resistance determinant *tetM* was detected in three *L. monocytogenes* isolates.**
- **No other tetracycline resistance determinants were found in this study.**

Future Studies

- **Our finding of antibiotic resistance determinants among *L. monocytogenes* raises questions about the spread of antimicrobial resistance among foodborne pathogens in the United States beyond the scope of this study.**
- **The temporal, geographical and serotype diversity suggests that *tetM* was acquired by the three tetracycline resistant isolates independently. Additional sequence and transfer experiments are necessary to investigate the dissemination of *tetM* among Gram-positive pathogens.**
- **Finding the erythromycin resistance determinant *mefA* requires further studies to explore the horizontal transmission and evolution.**
- **Continued surveillance of antimicrobial susceptibilities is required to detect emerging resistances however since relatively little resistance is evident, susceptibility testing could be performed on a periodic basis by sampling reference lab collections.**

References

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Non-Typhi *Salmonella* Isolates by Site and Month, 2005
Preliminary data subject to change. Last revised 3-13-2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	1	0	0	0	0	1	1	0	1	0	1	1	**6**
AL	2	1	2	1	3	6	6	8	5	5	4	3	**46**
AR	1	3	2	0	5	7	4	3	6	5	1	3	**40**
AZ	2	2	2	2	2	3	4	7	3	4	3	3	**37**
CA	11	12	9	11	9	14	15	17	14	12	12	9	**145**
CO	2	2	2	2	2	2	4	5	4	2	3	2	**32**
CT	1	2	2	3	3	5	3	4	4	2	2	0	**31**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	0	2	0	0	0	0	0	1	1	2	0	0	**6**
FL	4	1	3	3	4	5	8	7	8	6	2	3	**54**
GA	3	5	4	7	6	10	14	14	14	18	9	5	**109**
HI	2	1	0	1	1	1	2	2	2	2	1	1	**16**
HT	3	1	1	1	4	2	4	2	3	3	2	2	**28**
IA	1	1	1	1	2	1	2	2	3	1	1	2	**18**
ID	0	1	1	0	1	1	1	1	0	1	0	1	**8**
IL	6	4	6	6	6	10	12	13	10	11	8	6	**98**
IN	1	1	2	3	4	3	4	4	5	3	3	2	**35**
KS	0	1	1	1	1	2	2	2	2	1	1	2	**16**
KY	1	0	1	2	1	3	5	5	3	2	1	2	**26**
LA	2	1	1	3	3	2	5	6	2	4	6	1	**36**
LX	4	3	5	3	7	7	7	12	8	9	7	3	**75**
MA	4	2	4	4	5	9	6	9	6	3	3	4	**59**
MD	1	1	2	2	4	2	6	5	4	3	0	2	**32**
ME	1	0	0	1	2	1	1	1	1	1	0	0	**9**
MI	3	2	4	3	4	5	5	1	4	3	5	2	**41**
MN	2	2	3	1	3	3	3	4	2	2	5	3	**33**
MO	4	3	4	3	4	9	6	8	6	6	3	4	**60**
MS	1	0	1	2	1	5	6	4	9	5	3	1	**38**
MT	0	0	0	0	0	1	0	2	0	0	0	3	**6**
NC	4	4	5	5	5	11	13	10	12	12	5	4	**90**
ND	2	0	0	0	0	1	1	0	1	0	0	0	**5**
NE	3	1	0	2	0	0	3	0	2	1	0	1	**13**
NH	0	1	0	1	1	1	0	2	1	0	1	0	**8**
NJ	3	2	1	3	4	4	5	6	12	4	4	3	**51**
NM	1	0	0	2	1	1	2	1	1	1	0	2	**12**
NV	2	1	0	2	0	2	1	1	2	0	2	1	**14**
NY	5	2	4	5	9	10	13	17	10	7	6	11	**99**
NYC	6	5	4	5	5	2	14	7	8	9	5	4	**74**
OH	3	3	3	5	5	14	10	8	6	4	4	6	**71**
OK	1	0	2	3	2	3	2	2	3	2	1	3	**24**
OR	1	2	1	2	3	2	2	3	2	2	1	2	**23**
PA	6	3	5	4	7	9	12	14	13	6	5	6	**90**
RI	0	0	1	0	0	2	1	1	0	1	0	1	**7**
SC	1	2	1	0	1	1	4	7	5	7	1	2	**32**
SD	1	0	1	0	1	1	1	1	1	0	1	0	**8**
TN	2	3	3	3	3	6	5	5	5	0	0	0	**35**
TX	4	2	4	2	6	7	8	6	5	5	3	3	**55**
UT	0	1	1	1	3	1	2	3	1	1	1	1	**16**
VA	5	2	2	5	5	6	10	11	6	5	5	5	**67**
VT	0	0	0	0	1	0	1	1	0	1	0	0	**4**
WA	3	3	4	7	6	4	4	4	5	3	2	1	**46**
WI	4	3	3	4	3	6	4	8	4	3	3	3	**48**
WV	6	3	4	3	4	4	5	5	5	7	3	6	**55**
WY	1	0	0	1	0	1	3	0	1	1	1	0	**9**
Total	**127**	**97**	**112**	**131**	**162**	**219**	**262**	**272**	**241**	**198**	**140**	**135**	**2096**

Non-Typhi *Salmonella* Isolates by Site and Month, 2006
Preliminary data subject to change. Last revised 3-13-2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	1	0	0	1	0	0	0	1	0	0	0	0	**3**
AL	4	1	1	1	0	0	0	0	0	0	0	0	**7**
AR	3	1	0	0	1	2	2	5	7	1	0	0	**22**
AZ	3	1	1	3	3	4	4	6	0	0	0	0	**25**
CA	15	10	16	14	32	30	33	37	38	22	11	0	**258**
CO	10	5	11	10	12	0	0	0	1	0	0	0	**49**
CT	7	11	5	0	0	0	30	7	3	0	0	0	**63**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	1	1	0	0	0	2	2	2	0	3	1	0	**12**
FL	4	1	2	3	1	1	3	3	1	0	0	0	**19**
GA	5	3	3	4	6	11	12	14	16	15	1	0	**90**
HI	2	1	0	3	1	1	1	2	1	1	0	0	**13**
HT	1	2	5	2	2	5	5	6	5	1	0	0	**34**
IA	1	0	2	2	1	0	0	0	0	0	0	0	**6**
ID	0	1	0	0	1	2	0	1	1	0	0	0	**6**
IL	6	4	7	6	9	10	10	5	2	0	0	0	**59**
IN	2	1	3	2	4	3	8	12	7	3	3	1	**49**
KS	0	2	0	2	1	2	1	2	2	0	0	0	**12**
KY	3	1	1	2	2	4	4	3	3	0	0	0	**23**
LA	3	5	7	5	6	3	0	0	0	0	0	0	**29**
LX	4	3	1	0	1	2	13	9	3	0	0	0	**36**
MA	3	4	2	5	4	6	10	6	0	0	0	0	**40**
MD	2	2	2	12	8	11	14	9	0	0	0	0	**60**
ME	1	0	0	0	0	0	0	0	0	0	0	0	**1**
MI	0	0	1	2	6	5	0	0	0	0	0	0	**14**
MN	10	8	7	3	9	21	21	24	22	5	0	0	**130**
MO	6	6	3	5	5	6	6	8	5	3	0	0	**53**
MS	2	1	2	1	2	2	7	5	2	0	0	0	**24**
MT	0	0	0	1	0	1	2	0	0	0	0	0	**4**
NC	3	3	3	4	5	9	9	16	7	0	0	0	**59**
ND	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NE	2	0	2	1	0	3	0	0	0	0	0	0	**8**
NH	1	1	0	0	1	1	1	0	0	0	0	0	**5**
NJ	3	4	10	5	4	0	0	0	0	0	0	0	**26**
NM	3	3	3	2	3	6	7	7	6	3	1	0	**44**
NV	1	0	1	0	1	2	0	1	1	2	0	0	**9**
NY	26	14	22	21	27	33	49	51	22	0	0	0	**265**
NYC	5	3	3	8	6	8	9	8	0	0	0	0	**50**
OH	2	2	4	3	0	0	0	0	0	0	0	0	**11**
OK	1	1	1	2	3	3	4	3	4	0	0	0	**22**
OR	2	2	1	2	2	2	3	4	3	0	0	0	**21**
PA	7	4	5	4	7	8	16	12	8	0	0	0	**71**
RI	0	0	1	0	1	0	0	0	0	0	0	0	**2**
SC	6	0	2	0	0	0	0	0	0	0	0	0	**8**
SD	1	0	1	0	2	1	0	2	1	0	1	0	**9**
TN	8	2	4	5	5	8	12	12	11	0	0	0	**67**
TX	3	2	3	7	7	8	5	6	5	0	0	0	**46**
UT	0	1	2	0	0	0	0	0	0	0	0	0	**3**
VA	3	3	4	2	5	5	0	0	0	0	0	0	**22**
VT	1	0	0	0	0	0	1	0	1	1	0	0	**4**
WA	4	1	2	3	3	3	3	0	0	0	0	0	**19**
WI	3	2	5	2	4	4	5	7	6	0	0	0	**38**
WV	3	4	4	4	5	2	0	0	0	0	0	0	**22**
WY	1	1	0	1	0	1	1	0	0	0	0	0	**5**
Total	**188**	**128**	**165**	**165**	**208**	**241**	**313**	**296**	**194**	**60**	**18**	**1**	**1977**

_S._ Typhi Isolates by Site and Month, 2005

Preliminary data subject to change. Last revised 3-13-2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	0	0	0	0	0	1	0	0	0	0	0	0	**1**
AL	0	0	0	0	0	1	0	0	1	0	0	0	**2**
AR	0	0	0	0	0	0	0	0	0	0	0	0	**0**
AZ	1	0	0	1	1	0	1	0	0	0	0	0	**4**
CA	7	4	2	4	5	5	3	3	11	2	2	7	**55**
CO	0	0	0	0	0	1	1	1	2	0	2	0	**7**
CT	0	1	0	0	2	2	2	1	2	0	1	0	**11**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	0	1	0	0	0	0	0	1	0	0	0	0	**2**
FL	1	1	1	0	0	0	2	7	0	0	0	0	**12**
GA	0	1	1	0	0	0	0	0	1	0	3	2	**8**
HI	2	3	0	0	0	2	0	1	3	3	0	0	**14**
HT	0	0	0	0	0	1	0	3	1	0	0	1	**6**
IA	0	1	0	0	0	0	0	1	0	0	0	0	**2**
ID	0	0	0	0	0	0	0	0	0	0	0	0	**0**
IL	2	3	1	1	0	3	2	7	6	2	0	1	**28**
IN	0	0	0	0	1	0	0	1	1	0	0	1	**4**
KS	0	0	0	0	0	0	0	0	0	0	0	0	**0**
KY	1	0	0	0	2	0	1	0	0	0	0	1	**5**
LA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
LX	0	5	4	1	3	6	1	4	6	5	0	3	**38**
MA	0	0	0	5	2	2	1	1	3	1	2	0	**17**
MD	0	0	0	0	2	0	10	5	9	2	0	0	**28**
ME	2	0	0	0	1	0	0	0	0	0	0	0	**3**
MI	0	0	1	0	2	1	0	0	1	1	0	0	**6**
MN	0	1	0	0	1	1	0	1	0	2	1	0	**7**
MO	0	0	0	0	0	0	0	0	0	1	0	0	**1**
MS	0	0	0	0	0	0	3	0	0	0	0	0	**3**
MT	0	0	0	0	0	0	0	0	1	0	0	0	**1**
NC	0	0	0	1	0	0	0	1	3	0	0	0	**5**
ND	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NE	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NH	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NJ	1	2	2	1	3	4	1	2	4	5	1	2	**28**
NM	0	0	0	0	0	0	0	0	1	0	0	0	**1**
NV	0	0	0	1	0	0	0	0	0	0	0	0	**1**
NY	1	0	2	1	2	1	2	1	0	1	0	0	**11**
NYC	1	1	1	4	4	1	1	3	6	4	4	4	**34**
OH	0	0	0	0	0	0	1	0	1	0	0	0	**2**
OK	0	0	0	0	0	0	0	0	0	1	0	0	**1**
OR	1	0	0	1	0	0	0	0	1	0	0	1	**4**
PA	3	0	1	0	0	0	0	0	1	0	0	1	**6**
RI	0	0	0	0	2	0	0	0	0	0	0	0	**2**
SC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
SD	0	0	0	0	0	0	0	0	0	0	0	0	**0**
TN	2	0	0	0	0	0	0	0	0	0	1	0	**3**
TX	5	1	0	4	2	2	1	5	2	0	1	1	**24**
UT	0	0	1	0	0	0	0	0	0	0	0	0	**1**
VA	0	0	4	0	2	0	4	2	3	3	0	1	**19**
VT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WA	0	0	1	1	0	2	0	0	0	0	0	1	**5**
WI	0	0	0	0	1	2	0	1	0	0	0	0	**4**
WV	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WY	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**30**	**25**	**22**	**26**	**38**	**38**	**37**	**52**	**70**	**33**	**18**	**27**	**416**

***S.* Typhi Isolates by Site and Month, 2006** Preliminary data subject to change. Last revised 3-13-2007													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	0	0	0	0	0	0	0	0	0	0	0	0	**0**
AL	0	0	0	1	0	0	0	0	0	0	0	0	**1**
AR	0	0	0	0	0	0	0	0	0	1	0	0	**1**
AZ	0	1	1	0	0	1	0	1	0	0	0	0	**4**
CA	4	14	5	4	5	7	6	8	5	2	1	0	**61**
CO	1	0	0	0	2	0	0	6	0	1	0	0	**10**
CT	0	1	0	0	0	0	0	0	0	0	0	0	**1**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	0	0	0	0	0	0	0	0	0	0	0	0	**0**
FL	3	2	0	3	0	0	1	0	0	0	0	0	**9**
GA	1	0	0	0	2	0	1	0	0	0	0	0	**4**
HI	3	0	1	0	0	0	0	0	0	0	0	0	**4**
HT	2	1	1	0	1	1	0	3	0	0	0	0	**9**
IA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
ID	0	0	0	0	0	2	0	0	0	0	0	0	**2**
IL	0	3	2	1	1	2	4	1	0	0	0	0	**14**
IN	1	0	0	0	3	0	0	0	0	0	0	0	**4**
KS	0	0	0	0	0	0	0	0	0	0	0	0	**0**
KY	0	2	0	0	1	0	0	0	0	0	0	0	**3**
LA	0	2	0	0	3	3	0	0	0	0	0	0	**8**
LX	2	4	0	0	0	0	2	2	4	0	0	0	**14**
MA	0	0	1	1	2	1	1	0	0	0	0	0	**6**
MD	0	2	5	0	0	4	4	0	1	0	0	0	**16**
ME	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MI	0	0	0	2	0	0	0	0	0	0	0	0	**2**
MN	0	0	0	0	0	0	4	0	0	0	0	0	**4**
MO	0	1	0	0	0	0	0	1	1	0	0	0	**3**
MS	0	1	1	0	0	0	2	0	0	0	0	0	**4**
MT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NC	1	0	0	0	1	1	1	0	1	0	0	0	**5**
ND	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NE	1	0	0	0	0	0	0	0	0	0	0	0	**1**
NH	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NJ	6	4	2	0	4	0	0	0	0	0	0	0	**16**
NM	0	0	0	0	0	0	1	0	0	0	0	0	**1**
NV	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NY	1	2	0	0	0	1	2	1	3	0	0	0	**10**
NYC	10	4	3	5	8	2	9	5	0	0	0	0	**46**
OH	0	3	0	0	0	1	0	0	0	0	0	0	**4**
OK	0	0	0	0	0	0	0	0	0	0	0	0	**0**
OR	0	1	1	0	0	0	0	0	1	0	0	0	**3**
PA	1	0	1	0	2	3	0	0	0	0	0	0	**7**
RI	0	2	0	1	0	0	0	0	0	0	0	0	**3**
SC	0	0	0	0	0	0	0	1	0	0	0	0	**1**
SD	0	0	0	1	0	0	0	0	0	0	0	0	**1**
TN	1	1	0	0	0	0	0	0	0	0	0	0	**2**
TX	3	0	0	0	2	1	2	0	1	0	0	0	**9**
UT	1	0	0	0	0	0	0	0	0	1	0	0	**2**
VA	0	2	1	0	4	2	0	0	0	0	0	0	**9**
VT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WA	0	0	0	1	0	0	0	0	0	0	0	0	**1**
WI	0	2	1	0	1	2	0	0	0	0	0	0	**6**
WV	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WY	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**42**	**55**	**26**	**20**	**42**	**34**	**40**	**29**	**17**	**5**	**1**	**0**	**311**

***Shigella* Isolates by Site and Month, 2005** Preliminary data subject to change. Last revised 3-13-2007													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	1	0	0	0	0	0	0	0	0	0	0	0	**1**
AL	1	1	2	2	2	1	0	1	1	1	0	1	**13**
AR	0	0	0	0	0	0	0	0	0	0	0	1	**1**
AZ	1	1	0	1	1	1	0	3	4	5	3	1	**21**
CA	0	0	0	0	0	0	1	0	0	0	1	0	**2**
CO	1	0	1	0	1	0	0	1	2	1	1	1	**9**
CT	1	0	0	0	0	1	0	0	1	0	0	0	**3**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	1	0	0	0	0	0	0	0	0	0	0	0	**1**
FL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
GA	1	1	2	1	2	2	1	2	4	5	4	1	**26**
HI	1	0	0	0	0	0	0	1	0	0	0	0	**2**
HT	0	0	0	0	0	0	0	0	0	0	1	0	**1**
IA	1	0	0	0	0	0	1	0	0	1	0	0	**3**
ID	1	0	0	0	0	0	0	0	0	0	0	0	**1**
IL	0	1	1	1	1	1	2	4	4	1	3	2	**21**
IN	0	0	0	0	0	0	0	1	0	1	0	0	**2**
KS	0	1	0	0	0	1	1	2	1	0	1	1	**8**
KY	0	0	1	1	1	3	2	1	2	0	2	1	**14**
LA	0	0	0	0	0	0	0	1	0	1	0	0	**2**
LX	1	1	0	0	1	0	2	1	2	1	1	1	**11**
MA	1	1	0	0	1	1	1	1	1	1	1	1	**10**
MD	1	0	1	0	1	0	1	3	1	2	0	1	**11**
ME	0	0	1	0	0	0	0	0	0	0	0	0	**1**
MI	1	1	1	1	1	0	0	0	1	1	1	0	**8**
MN	1	0	0	1	0	0	1	0	1	0	0	1	**5**
MO	1	1	1	2	4	8	7	6	7	4	5	3	**49**
MS	0	0	0	0	1	0	0	0	0	0	1	0	**2**
MT	0	0	0	0	0	1	0	0	0	0	0	0	**1**
NC	0	0	1	0	1	0	1	0	1	0	1	1	**6**
ND	2	1	0	0	0	1	0	0	2	0	0	0	**6**
NE	2	0	0	2	0	0	2	0	0	2	0	1	**9**
NH	1	0	0	0	0	0	0	0	0	0	0	0	**1**
NJ	2	1	1	1	1	1	2	1	1	1	1	1	**14**
NM	1	0	1	0	0	1	0	1	1	1	1	1	**8**
NV	0	0	1	1	0	0	0	0	1	0	1	0	**4**
NY	0	1	2	1	1	1	1	1	0	1	1	1	**11**
NYC	2	1	1	2	1	2	4	1	3	1	0	2	**20**
OH	1	0	0	0	0	1	1	1	0	0	0	1	**5**
OK	2	2	3	3	4	4	2	3	2	3	1	2	**31**
OR	1	1	0	0	0	0	2	1	0	1	0	0	**6**
PA	1	0	0	0	1	0	2	1	1	0	0	0	**6**
RI	0	0	0	0	0	0	0	0	1	0	0	0	**1**
SC	0	0	1	0	0	0	1	0	0	1	0	0	**3**
SD	0	0	0	0	0	0	0	0	1	1	1	0	**3**
TN	3	4	4	4	3	2	2	1	0	2	1	0	**26**
TX	1	1	1	0	3	2	0	2	0	3	1	0	**14**
UT	0	0	0	0	1	0	0	0	0	1	0	0	**2**
VA	1	0	0	0	1	1	0	2	0	0	1	1	**7**
VT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WA	2	0	1	2	1	0	2	1	0	2	0	1	**12**
WI	1	1	1	2	1	2	1	1	0	1	1	0	**12**
WV	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WY	0	0	0	0	0	0	1	0	0	1	0	0	**2**
Total	**39**	**22**	**29**	**28**	**36**	**38**	**44**	**45**	**46**	**47**	**36**	**28**	**438**

***Shigella* Isolates by Site and Month, 2006** Preliminary data subject to change. Last revised 3-13-2007													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	0	0	1	0	0	0	0	0	0	0	0	0	**1**
AL	1	1	1	0	0	0	0	0	0	0	0	0	**3**
AR	1	0	0	0	0	0	0	2	0	1	0	0	**4**
AZ	1	2	1	0	2	3	3	4	0	0	0	0	**16**
CA	0	0	0	0	1	0	0	1	0	0	0	0	**2**
CO	1	0	1	0	1	1	0	2	2	1	0	0	**9**
CT	1	0	0	0	1	0	0	1	0	0	0	0	**3**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	0	0	0	0	0	1	0	0	0	0	0	0	**1**
FL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
GA	2	3	2	2	3	3	3	6	5	11	1	0	**41**
HI	1	0	0	0	0	1	0	0	0	1	0	0	**3**
HT	0	0	1	1	0	1	2	3	2	1	0	0	**11**
IA	1	0	0	0	0	0	0	0	0	0	0	0	**1**
ID	0	0	0	0	0	0	1	0	0	0	0	0	**1**
IL	1	1	2	1	1	2	2	2	0	0	0	0	**12**
IN	0	0	0	0	1	0	0	0	1	0	0	0	**2**
KS	0	0	0	0	1	0	0	1	1	0	0	0	**3**
KY	1	1	0	2	1	1	1	0	0	0	0	0	**7**
LA	0	1	0	0	2	0	0	0	0	0	0	0	**3**
LX	1	0	0	0	0	0	1	2	0	0	0	0	**4**
MA	0	1	1	0	1	0	1	1	0	0	0	0	**5**
MD	1	1	1	0	0	1	0	2	0	2	0	0	**8**
ME	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MI	0	0	1	0	1	0	0	0	0	0	0	0	**2**
MN	1	0	0	1	1	1	1	2	2	3	0	0	**12**
MO	3	3	2	4	6	4	1	2	2	2	0	0	**29**
MS	1	0	0	0	0	0	0	0	0	0	0	0	**1**
MT	0	0	0	1	0	0	0	0	0	0	0	0	**1**
NC	0	0	1	0	0	0	0	0	0	0	0	0	**1**
ND	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NE	1	0	1	1	0	0	2	0	0	0	0	0	**5**
NH	0	1	0	0	0	0	0	0	0	0	0	0	**1**
NJ	2	1	1	1	2	0	0	0	0	0	0	0	**7**
NM	0	1	0	0	1	0	1	2	2	1	0	0	**8**
NV	1	1	0	0	0	1	0	1	1	0	0	0	**5**
NY	1	2	0	0	1	1	0	1	1	0	0	0	**7**
NYC	2	0	1	2	1	1	3	0	0	0	0	0	**10**
OH	0	0	1	0	0	0	0	0	0	0	0	0	**1**
OK	0	0	1	0	1	1	0	2	0	0	0	0	**5**
OR	1	1	0	1	0	0	0	1	1	0	0	0	**5**
PA	0	0	0	1	0	1	0	1	0	0	0	0	**3**
RI	1	0	0	0	0	0	0	0	0	0	0	0	**1**
SC	0	1	1	0	0	0	0	0	0	0	0	0	**2**
SD	1	0	0	1	0	2	3	1	1	2	1	0	**12**
TN	0	0	1	0	1	1	0	1	0	1	0	0	**5**
TX	1	0	1	0	1	0	1	2	0	0	0	0	**6**
UT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
VA	0	0	0	1	0	0	0	0	0	0	0	0	**1**
VT	0	0	0	0	1	0	0	0	0	0	0	0	**1**
WA	1	1	0	1	0	0	1	0	0	0	0	0	**4**
WI	0	0	1	1	1	1	1	2	2	0	0	0	**9**
WV	0	1	0	0	0	1	1	0	0	0	0	0	**3**
WY	0	0	0	0	2	0	0	1	2	0	0	0	**5**
Total	**30**	**24**	**24**	**22**	**35**	**29**	**29**	**46**	**25**	**26**	**2**	**0**	**292**

E. coli Isolates by Site and Month, 2005

Preliminary data subject to change. Last revised 3-13-2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	0	1	0	0	0	0	0	0	0	0	0	0	**1**
AL	1	0	0	0	0	0	1	0	0	0	0	0	**2**
AR	1	0	1	1	1	0	1	0	0	0	1	0	**6**
AZ	1	0	0	0	0	0	0	0	0	1	0	0	**2**
CA	0	0	1	0	0	1	2	0	1	2	1	0	**8**
CO	1	0	0	0	0	1	0	1	1	0	1	0	**5**
CT	0	0	0	0	0	0	1	0	1	0	0	0	**2**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	0	0	0	0	0	0	1	1	0	0	0	0	**2**
FL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
GA	3	1	1	0	1	3	2	6	5	6	1	0	**29**
HI	1	0	0	0	0	0	0	0	0	0	0	0	**1**
HT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
IA	1	0	0	0	0	0	1	0	0	1	0	0	**3**
ID	0	0	0	0	0	0	0	0	0	1	0	0	**1**
IL	0	1	0	0	0	0	2	2	1	0	2	0	**8**
IN	0	0	0	0	1	0	0	1	0	1	0	0	**3**
KS	0	1	0	0	0	0	0	0	0	1	0	0	**2**
KY	1	0	0	0	0	0	0	1	0	1	0	0	**3**
LA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
LX	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MA	0	0	0	0	0	0	1	0	1	0	0	0	**2**
MD	0	0	1	1	2	5	3	4	5	3	5	0	**29**
ME	0	0	0	1	0	0	0	1	0	0	0	0	**2**
MI	0	0	0	0	0	1	0	1	0	0	1	0	**3**
MN	1	0	0	0	0	0	1	1	2	1	0	0	**6**
MO	1	1	0	1	0	1	1	0	1	0	1	0	**7**
MS	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MT	0	0	0	0	0	0	0	1	0	0	0	0	**1**
NC	1	0	0	0	0	0	0	0	0	0	0	1	**2**
ND	0	0	0	0	0	0	0	0	1	0	0	0	**1**
NE	0	1	0	1	0	0	1	0	0	0	1	0	**4**
NH	0	0	1	0	0	0	0	0	0	0	0	0	**1**
NJ	2	1	1	1	1	1	1	1	1	1	1	1	**13**
NM	0	0	0	0	1	0	0	0	0	0	0	0	**1**
NV	0	0	1	1	0	0	0	0	1	0	0	1	**4**
NY	0	0	1	0	0	2	1	1	1	1	0	0	**7**
NYC	1	0	0	0	0	0	0	2	3	0	0	0	**6**
OH	1	0	1	0	0	1	0	1	2	0	1	0	**7**
OK	0	0	0	0	1	0	1	0	0	0	0	1	**3**
OR	0	0	1	0	0	1	0	1	1	0	0	1	**5**
PA	1	0	0	0	0	1	0	1	0	1	0	0	**4**
RI	0	0	0	0	0	0	0	0	0	0	0	0	**0**
SC	0	0	1	0	0	0	0	0	0	0	0	0	**1**
SD	1	0	0	0	0	0	0	0	0	1	0	0	**2**
TN	0	0	0	0	0	0	1	0	1	0	0	0	**2**
TX	0	0	0	0	0	0	0	0	0	0	0	0	**0**
UT	0	0	0	0	0	0	1	0	1	1	0	0	**3**
VA	0	1	0	1	0	0	0	1	0	0	1	0	**4**
VT	0	0	0	0	0	0	0	0	1	0	0	0	**1**
WA	2	0	0	0	0	1	1	1	2	1	0	1	**9**
WI	1	0	0	0	0	1	0	1	1	1	0	0	**5**
WV	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WY	0	0	0	0	0	0	1	0	0	0	1	0	**2**
Total	**22**	**8**	**11**	**8**	**8**	**20**	**25**	**30**	**34**	**25**	**18**	**6**	**215**

***E. coli* Isolates by Site and Month, 2006** Preliminary data subject to change. Last revised 3-13-2007													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	0	0	1	0	0	0	0	0	0	0	0	0	**1**
AL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
AR	0	0	0	0	0	0	0	0	0	0	0	0	**0**
AZ	0	0	0	0	0	0	0	1	0	0	0	0	**1**
CA	0	1	1	0	0	3	2	6	8	3	2	0	**26**
CO	1	0	0	0	0	1	1	1	0	1	0	0	**5**
CT	1	0	0	0	0	0	0	0	1	0	0	0	**2**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	0	0	0	1	0	0	0	0	0	0	0	0	**1**
FL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
GA	0	4	2	1	4	2	5	1	8	3	0	0	**30**
HI	0	1	0	0	0	0	0	0	0	0	0	0	**1**
HT	0	0	0	0	0	0	1	0	0	0	0	0	**1**
IA	1	0	0	0	0	0	0	0	0	0	0	0	**1**
ID	0	0	0	0	0	0	0	1	0	1	0	0	**2**
IL	0	1	0	1	1	4	0	0	0	0	0	0	**7**
IN	0	0	0	0	0	0	1	0	1	0	0	0	**2**
KS	0	0	0	0	0	0	0	0	0	0	0	0	**0**
KY	1	0	0	0	0	1	1	0	1	0	0	0	**4**
LA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
LX	0	0	0	0	0	0	0	1	0	0	0	0	**1**
MA	0	0	0	0	0	1	0	1	0	0	0	0	**2**
MD	0	1	1	1	1	3	4	7	7	0	0	0	**25**
ME	1	0	0	0	0	0	0	0	0	0	0	0	**1**
MI	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MN	1	0	0	1	0	1	4	7	2	0	0	0	**16**
MO	1	0	0	0	1	1	0	1	1	0	0	0	**5**
MS	0	0	1	0	0	0	0	0	0	0	0	0	**1**
MT	0	0	0	0	0	0	0	1	0	0	0	0	**1**
NC	1	0	0	0	0	0	0	0	1	0	0	0	**2**
ND	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NE	0	1	1	0	0	0	1	0	0	0	0	0	**3**
NH	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NJ	1	1	1	1	1	0	0	0	0	0	0	0	**5**
NM	0	1	0	0	0	0	0	0	1	0	0	0	**2**
NV	1	0	1	0	0	1	0	0	1	0	0	0	**4**
NY	1	0	0	0	1	1	3	11	11	0	0	0	**28**
NYC	0	2	1	0	1	0	1	0	0	0	0	0	**5**
OH	0	0	0	0	0	0	0	0	0	0	0	0	**0**
OK	0	0	1	0	0	0	1	0	0	0	0	0	**2**
OR	5	1	5	0	0	1	0	0	0	0	0	0	**12**
PA	0	0	0	0	0	0	1	0	1	0	0	0	**2**
RI	1	0	0	0	0	0	0	0	0	0	0	0	**1**
SC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
SD	0	0	1	0	0	0	0	1	0	0	1	0	**3**
TN	0	0	0	0	0	3	17	7	9	0	0	0	**36**
TX	0	0	0	0	0	0	0	1	0	0	0	0	**1**
UT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
VA	1	0	1	1	0	0	0	0	0	0	0	0	**3**
VT	0	0	0	0	0	1	0	0	0	0	0	0	**1**
WA	0	0	0	1	0	1	1	0	0	0	0	0	**3**
WI	0	0	0	0	1	0	1	2	3	0	0	0	**7**
WV	1	0	0	0	0	1	3	0	0	0	0	0	**5**
WY	0	0	0	0	0	1	0	1	1	0	0	0	**3**
Total	**19**	**14**	**18**	**8**	**11**	**27**	**48**	**51**	**57**	**8**	**3**	**0**	**264**

Vibrio Isolates by Site and Month, 2005

Preliminary data subject to change. Last revised 3-13-2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	0	0	0	0	0	0	0	0	0	0	0	0	**0**
AL	0	0	0	1	1	0	1	1	1	1	1	0	**7**
AR	0	0	0	0	0	0	0	0	0	0	0	0	**0**
AZ	0	0	0	0	2	2	1	1	3	2	2	0	**13**
CA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
CO	0	0	1	1	1	0	1	3	0	1	1	0	**9**
CT	0	0	0	1	0	0	0	1	1	0	0	0	**3**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	0	0	0	0	0	0	0	0	0	0	0	0	**0**
FL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
GA	0	1	0	2	1	0	0	0	4	1	0	0	**9**
HI	2	0	1	2	1	3	2	3	1	1	0	4	**20**
HT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
IA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
ID	0	0	0	0	0	0	0	0	0	0	0	0	**0**
IL	0	0	0	0	0	1	0	2	2	0	1	0	**6**
IN	0	0	0	0	0	0	0	0	0	0	0	0	**0**
KS	0	0	0	0	0	0	0	0	0	0	0	0	**0**
KY	0	0	0	0	0	0	0	0	0	0	0	0	**0**
LA	0	1	4	0	4	2	0	0	0	0	0	0	**11**
LX	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MA	0	0	1	0	0	0	2	1	1	0	0	0	**5**
MD	0	0	0	0	1	2	4	1	5	3	0	0	**16**
ME	0	0	0	0	0	0	0	1	0	0	0	0	**1**
MI	0	0	0	0	1	0	0	0	0	0	0	0	**1**
MN	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MO	0	0	0	0	0	0	1	1	0	0	0	0	**2**
MS	0	0	0	0	1	0	2	10	2	0	0	0	**15**
MT	0	0	0	0	0	0	0	1	0	0	0	0	**1**
NC	1	0	0	1	0	3	5	2	2	1	0	0	**15**
ND	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NE	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NH	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NJ	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NM	0	0	0	0	0	0	0	0	0	1	0	0	**1**
NV	0	0	0	0	0	0	0	0	0	0	0	1	**1**
NY	0	0	0	0	1	0	1	3	1	0	1	1	**8**
NYC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
OH	0	0	0	0	0	0	0	0	0	0	0	0	**0**
OK	0	0	0	0	1	0	0	0	1	0	0	0	**2**
OR	0	0	0	0	0	1	1	2	2	0	2	0	**8**
PA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
RI	0	0	0	0	0	0	0	0	3	1	0	0	**4**
SC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
SD	0	0	0	0	0	0	0	0	0	0	0	0	**0**
TN	0	0	0	0	0	0	0	0	3	0	0	0	**3**
TX	0	0	0	0	0	2	1	0	2	0	0	0	**5**
UT	0	0	0	0	0	0	0	0	0	0	1	0	**1**
VA	0	0	0	0	1	1	5	11	1	1	1	0	**21**
VT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WI	0	0	0	0	0	0	0	0	1	0	0	0	**1**
WV	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WY	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**3**	**2**	**7**	**8**	**16**	**17**	**27**	**44**	**36**	**13**	**10**	**6**	**189**

Vibrio Isolates by Site and Month, 2006

Preliminary data subject to change. Last revised 3-13-2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
AK	0	0	0	0	0	0	2	1	0	0	0	0	**3**
AL	0	0	0	1	0	0	0	0	0	0	0	0	**1**
AR	0	0	0	0	0	0	0	0	0	0	0	0	**0**
AZ	0	0	1	0	0	3	7	0	0	0	0	0	**11**
CA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
CO	0	0	0	0	0	0	2	1	1	0	0	0	**4**
CT	0	0	0	0	1	1	7	5	1	0	0	0	**15**
DC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
DE	0	0	0	0	0	0	0	0	0	0	0	0	**0**
FL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
GA	0	1	0	2	0	2	1	0	2	2	1	0	**11**
HI	1	0	1	3	1	4	2	0	0	0	0	0	**12**
HT	0	0	0	0	0	0	0	0	3	0	0	0	**3**
IA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
ID	0	0	0	0	0	0	0	0	0	0	0	0	**0**
IL	0	0	3	0	0	0	0	0	0	0	0	0	**3**
IN	0	0	0	0	0	0	0	0	0	0	0	0	**0**
KS	0	0	0	0	0	0	0	0	0	0	0	0	**0**
KY	0	0	0	0	0	0	0	0	0	0	0	0	**0**
LA	0	0	0	0	0	0	3	4	9	2	2	1	**21**
LX	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MA	0	0	1	0	0	0	0	0	0	0	0	0	**1**
MD	0	0	0	1	2	4	5	6	1	0	0	0	**19**
ME	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MI	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MN	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MO	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MS	0	0	0	0	1	1	0	2	1	0	1	0	**6**
MT	0	0	1	0	0	0	0	0	0	0	0	0	**1**
NC	0	0	0	0	1	1	0	1	1	0	0	0	**4**
ND	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NE	0	0	0	0	1	0	0	0	0	0	0	0	**1**
NH	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NJ	0	0	0	0	0	0	0	0	0	0	0	0	**0**
NM	0	0	0	0	0	0	0	1	0	0	0	0	**1**
NV	0	0	0	0	0	0	0	0	0	1	0	0	**1**
NY	1	0	1	1	2	7	5	14	2	0	0	0	**33**
NYC	0	0	0	0	0	0	1	0	0	0	0	0	**1**
OH	0	0	0	0	0	0	0	0	0	0	0	0	**0**
OK	0	0	0	0	0	0	0	0	0	0	0	0	**0**
OR	0	0	0	0	0	1	10	0	0	0	0	0	**11**
PA	0	0	0	0	0	0	1	2	0	0	0	0	**3**
RI	0	0	0	0	0	0	0	0	0	0	0	0	**0**
SC	0	0	0	0	0	0	0	0	0	0	0	0	**0**
SD	0	0	0	0	0	0	0	0	0	0	0	0	**0**
TN	0	0	0	0	1	1	2	2	0	1	0	0	**7**
TX	0	0	0	2	0	0	3	2	0	0	0	0	**7**
UT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
VA	0	0	0	0	0	3	0	0	0	0	0	0	**3**
VT	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WA	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WI	0	1	0	0	0	0	0	0	0	0	0	0	**1**
WV	0	0	0	0	0	0	0	0	0	0	0	0	**0**
WY	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**2**	**2**	**8**	**10**	**10**	**28**	**51**	**41**	**21**	**6**	**4**	**1**	**184**

***Campylobacter* Isolates by Site and Month, 2005** Preliminary data subject to change. Last revised 3-13-2007													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
CA	19	5	8	8	9	8	4	6	3	9	0	0	**79**
CO	3	3	7	8	9	15	19	12	11	10	4	3	**104**
CT	7	4	3	6	3	6	7	9	3	3	6	1	**58**
GA	9	6	11	8	20	21	27	25	15	0	0	0	**142**
MD	5	4	1	6	9	5	12	5	6	3	0	0	**56**
MN	9	8	3	12	10	19	21	21	12	13	11	5	**144**
NM	2	2	2	0	5	5	11	4	2	5	3	1	**42**
NY	4	6	9	11	8	13	17	17	11	9	10	7	**122**
OR	9	3	7	11	15	13	12	13	9	6	0	5	**103**
TN	6	5	0	3	6	9	8	0	0	0	0	0	**37**
Total	**73**	**46**	**51**	**73**	**94**	**114**	**138**	**112**	**72**	**58**	**34**	**22**	**887**

Revised NARMS Breakpoints for *Campylobacter* (Updated March 2007)

Antimicrobial agent	Revised MIC breakpoints (µg/mL)			CLSI breakpoints	Old R breakpoint
	S	I	R		
Azithromycin	≤2	4	≥8		2
Chloramphenicol	≤8	16	≥32		32**
Ciprofloxacin	≤1	2	≥4	CLSI M45*	4**
Clindamycin	≤2	4	≥8		4
Erythromycin	≤8	16	≥32	CLSI M45*	8
Gentamicin	≤2	4	≥8		16
Nalidixic acid	≤16	32	≥64		32
Tetracycline	≤4	8	≥16	CLSI M45*	16**

*Clinical and Laboratory Standards Institute (CLSI). Methods for Antimicrobial Dilution and Disk Susceptibility Testing of Infrequently Isolated or Fastidious Bacteria; Approved Guideline. CLSI Document M45-A. Clinical and Laboratory Standards Institute, Wayne, Pennsylvania, 2006.

**No change in MIC breakpoints

ATTACHMENT 3

OUTBREAK Isolates for Submission to CDC Enteric Diseases Laboratory Branch
(Use DASH Forms; please include the State Health Department Number)

FoodNet Sites (CA, CO, CT, GA, MD, MN, NM, NY, OR, and TN)*

Pathogen	Test Performed	Isolate Submission Guidelines	Contact Person	Where to Submit
Salmonella Enteritidis	Phage typing and Susceptibility testing	CDC asks that sites **automatically** send three isolates from outbreaks with three or more laboratory-confirmed cases.**	Cheryl Bopp	Centers for Disease Control and Prevention Data & Specimen Handling Section (DASH) 1600 Clifton Road, NE Atlanta, GA 30333 Lab Contact Phone Number: 404-639-3334 (for shipping purposes)
Salmonella Newport	Susceptibility testing			
Salmonella Typhimurium	Susceptibility testing			
All other non-Typhi *Salmonella*	Susceptibility testing			
Non-O157 Shiga toxin-producing *E. coli*	Susceptibility testing			
Campylobacter	Susceptibility testing		Collette Fitzgerald	
E. coli O157***	Susceptibility testing and Toxin typing	CDC may contact sites to request isolates from an outbreak.	Cheryl Bopp	
Shigella	Susceptibility testing			

****** For multi-state outbreaks, CDC needs only three isolates from the entire outbreak. Once three isolates are received from any FoodNet site, the OIC will contact the other FoodNet sites to notify that outbreak isolates are no longer needed.
******* During the ongoing FoodNet *E. coli* O157 Cohort Study, all *E. coli* O157 isolates should be routinely submitted to CDC.

Non-FoodNet Sites*

Pathogen	Test Performed	Isolate Submission Guidelines	Contact Person	Where to Submit
Salmonella Enteritidis	Phage typing and Susceptibility testing	CDC will request three isolates from outbreaks with three or more laboratory-confirmed cases. CDC will contact sites for such requests.	Cheryl Bopp	Centers for Disease Control and Prevention Data & Specimen Handling Section (DASH) 1600 Clifton Road, NE Atlanta, GA 30333 Lab Contact Phone Number: 404-639-3334 (for shipping purposes)
Salmonella Newport	Susceptibility testing			
Salmonella Typhimurium	Susceptibility testing			
Non-O157 Shiga toxin-producing *E. coli*	Susceptibility testing			
All other non-Typhi *Salmonella*	Susceptibility testing	CDC may contact sites to request isolates from an outbreak.		
E. coli O157	Toxin typing			
Shigella	Susceptibility testing			
Campylobacter	Susceptibility testing		Collette Fitzgerald	

*** NATIONWIDE:** Please send ALL *Listeria monocytogenes* isolates immediately upon receipt to Lewis Graves and send all *Vibrio cholerae* isolates immediately upon receipt to Cheryl Bopp. Please USE DASH FORM for ALL *L. monocytogenes* and *V. cholerae* isolates. All *Salmonella* Typhi isolates are submitted routinely to CDC through NARMS.

Status of FWA and IRB Approval for Protocol 3138 (as of 3/12/2007)
Interviews of persons from which enteric bacterial isolates have been cultured with uncommon antimicrobial resistance patterns

State	FWA	State IRB Approval	Deferral to CDC IRB*	IRB Approval -Expiring Date
AK	Yes			
AL	Yes			
AR	Yes			
AZ	Yes			
CA	Yes	Yes		10/5/2007
CO	Yes		Yes	
CT	Yes	Yes		11/12/2007
DC	Yes			
DE	Yes		Yes	
FL	Yes		Yes	
GA	Yes	Yes		10/1/2007
HI	Yes	Yes		5/14/2007
HT	Yes			
IA	Yes		Yes	
ID	No			
IL	Yes			
IN	Yes		Yes	
KS	Yes		Yes	
KY	Yes		Yes	
LA	Yes		Yes	
LX	Yes			
MA	Yes	Yes		11/21/2007
MD	Yes**			
ME	Yes		Yes	
MI	Yes	Yes		12/16/2007
MN	Yes		Yes	
MO	Yes		Yes	
MS	Yes			
MT	Yes		Yes	
NC	Yes			
ND	Yes		Yes	
NE	Yes		Yes	
NH	Yes			
NJ	Yes			
NM	Yes	Yes		1/28/2008
NV	Yes**			
NY	Yes	Yes***		
NYC	Yes	Yes		5/11/2007
OH	Yes			
OK	Yes			
OR	Yes	Yes		3/8/2007
PA	Yes		Yes	
RI	Yes			
SC	Yes			
SD	Yes		Yes	
TN	Yes		Yes	
TX	Yes			
UT	Yes			
VA	Yes	Yes		4/4/2007
VT	Yes		Yes	
WA	Yes		Yes	
WI	Yes			
WV	Yes			
WY	Yes			
Total (Yes)	53	11	19	

***Sites have deferred to CDC IRB for local approval of the protocol.**

****Working witjh state contact to obtain deferal/IRB approval**

*****State IRB has granted exempt status**

Updated:3/12/07

Status of Active Manuscripts

PRELIMINARY INFORMATION: SUBJECT TO CHANGE: NOT FOR DISTRIBUTION

#	Lead investigator (1st author)	Co-authors	Proposal/Publication	Abstract	Status	Date of last correspondence	Comments
1	**Aarestrup FM**	**Hendriksen RS, Lockett J, Gay K, White DG, Hasman H, Sørensen G, Bangtrakulnonth A, Pornreongwong S, Pulsrikarn C, Angulo FJ, Gerner-Smidt P**	**International Spread of Multidrug-resistant *Salmonella* Schwarzengrund in Food Products**		**6**		**EID-will be published, May 2007; 13(5)**
2	Carattoli A	Miriagou V, Bertini A, Loli A, Colinon C, Villa L, Whichard JM and G M Rossolini	Replicon typing of plasmids encoding resistance to newer β-lactams.		7		EID July 2006; 12(7): 1145-114
3	Collignon P	Angulo FJ	Fluoroquinolone-resistant *Escherichia coli* : Food for thought [commentary]		7		JID July 2006;194(1): 8-1
4	Donabedian SM	Perri MB, Vager D, Hershberger E, Malani P, Simjee S, Chow J, Vergis EN, Muder RR, Gay K, Angulo FJ, Bartlett P, Zervos MJ	Quinupristin-Dalfopristin resistance in *Enterococcus faecium* Isolated from humans, farm animals and grocery store meat in the United States		7		JCM Sept 2006; 44(9): 3361-336
5	Gay K	Robicsek A, Strahilevitz J, Park CH, Jacoby G, Barrett TJ, Medalla F, Chiller TM, Hooper DC	Plasmid-mediated Quinolone Resistance in Non-Typhi Serotypes of Salmonella enterica	ICAAC 2005	7		CID August 2006; 43(3): 297-30
6	Holzbauer S	Chiller T	Antimicrobial resistance in bacteria of animal origin (book review)		7		EID July 2006; 12(7): 1180-118
7	**Nelson, JM**	Chiller TM, Powers JH, and Angulo FJ	**Fluoroquinolone-Resistant *Campylobacter* Species and the Withdrawal of Fluoroquinolones from Use in Poultry: A Public Health Success Story**		**6**	**1/5/2007**	**CID April 2007; 44(7): 977-980**
8	Qin X	Razia Y, Johnson JR, Stapp JR, Boster DR, Tsosie T, Smith DL, Braden CR, Gay K, Angulo FJ, Tarr PI	Ciprofloxacin-resistant Gram-negative bacilli in the fecal microflora of children		6		AAC Oct 2006; 50(10): 3325-
9	Sivapalasingam S	Angulo FJ	A high prevalence of antimicrobial resistance among *Shigella* isolates in the United States, NARMS, 1999-200	IDSA 2001	7		AAC Jan 2006; 50 (1): 49-5
10	Stevenson J	Gay K, Barrett TJ, Medalla F, Chiller TM, Angulo FJ	Increase in quinolone resistance among non-Typhi *Salmonella* in the United States, 1996-2002	NFID 2003	6		AAC Jan 2007; 51 (1): 195-19
11	Varma J	Marcus R, Stenzel SA, Hanna SS, Gettner S, Anderson BJ, Hayes T, Shiferaw B, Crume TL, Joyce K, Fullerton KE, Voetsch AC, Angulo FJ	Highly resistant Salmonella Newport-MDRAmpC transmitted through the domestic US food supply: a FoodNet case-control study of sporadic Salmonella Newport infections, 2002-2003		7		JID July 2006;194(2): 222-3
12	Whichard JM	Gay K, Stevenson JE, Joyce K, Omondi M, Medalla F, Jacoby GA, Barrett TJ	Concurrent quinolone and extended-spectrum cephalosporin resistance among human *Salmonella* isolates: results of 2002 NARMS monitoring		5	10/2/2006	Resubmitted-EID
13	Crump JA	Kretsinger K, Gay K, Joyce KW, Vugia DJ, Megginson M, Segler SD, Hurd S, Luedemar J, Shferaw B, Hanna SS, Angulo FJ, Moore M, and the EIP FoodNet/NARMS Working Group	FoodNet/NARMS Retrospective Cohort Study: Clinical Consequences of Typhoid Fever due to S. Typhi with Decreased Susceptibility to Fluoroquinolones		4	7/13/2006	CDC clearance
14	Gay K	Matcha F, Graves L, ThurdeKoos AM, Chiller TM	Antimicicrobial susceptibilities of *Listeria monocytogenes* from humans in the United States, 2000-200		3		Revising/incorporating co-author comments
15	Szabo D	Hansen D, Kruger T, Bonomo RA, Carattoli A, Casellas JM, Ko WC, Bates J, Keddy K, Usera M, Goossens H, Carlos CC, Hart CA, Whichard J, Barrett TJ, Angulo F, McGeer A, Low D, Paterson DL.	Beta-lactamase production ny non-Typhoidal *Salmonella* in humans.		3	1/12/2007	Revising draft/incorporating author comments
16	Szabo D	Hansen D, Kruger T, Yilmaz M, Carattoli A, Casellas JM, Ko WC, Bates J, Keddy K, Usera M, Goossens H, Carlos CC, Whichard J, Barrett TJ, Angulo F, Bonomo RA, Hart CA, Jamieson F, McGeer A, Low D, Paterson DL	Multiple Antibiotic Resistance in Non-Typhoidal *Salmonella* : A Study in Twelve Countries		3	1/12/2007	Revising draft/incorporating author comments
17	Whichard JM	Gay K., White DG, Chiller TM	Surveillance for antimicrobial resistance among foodborne bacteria: the U.S. approach (chapter of book titled "Infectious Disease Surveillance")		3	12/5/2006	CDC clearance
18	Whichard JM	Medalla F, Hoekstra RM, Joyce K, Chiller T, Barrett TJ	Antimicrobial resistance predictors for multidrug-resistant *Salmonella* in the United States: human isolates, 1996-200		3		Received comments from all co-authors and revising draft; will re-run analysis for human data to include 2004
19	Lynch M	Blanton E, Bulens S, Polyak C, Stevenson J, Medalla F, Barrett T, Mintz E	Multidrug resistance among *Salmonella* Typhi isolates in the United States, 1999-200		2		Draft being reviewed by co-authors
20	Ailes E	Nelson JM, Henao O, Voetsch AC, Hoekstra M, Angulo FJ (complete list of authors TBD)	Trends in the Incidence of *Campylobacter* Infections, FoodNet 1996-2003		1		Writing
21	**Parsons M**	**Stevenson J, Whichard J, Barrett TJ**	**Assessing the emergence of a multi-drug resistant *Salmonella* serotype Newport using PFGE and plasmid profiling (1996-2000)**	**ICAAC2002**	**2**	**2/20/2007**	**Draft received by co-authors on 2/20/07 for review**
22	Chiller T	Angulo FJ	Sensititre review of human enterococci data	IDSA 2002	1	3/16/2005	Reanalysis/Writing
23	**Greene SK**	**Stuart AM, Medalla FM, Whichard JM, Hoekstra RM, Chiller T.**	**Regional distribution of highly resistant Salmonella Newport-MDRAmpC and Salmonella Typhimurium-ACSSuT in the United States, 2003-2005**		**1**	**2/13/2007**	**Writing/preliminary analysis**
24	Gupta S	Omondi M, Whichard JM, Medalla F, and PulseNet and serotyping lab co-authors	Enhanced paratyphoid fever surveillance in the United States, 2005-2006		1		Writing/preliminary analysis
25	Medalla F	Gay K, Whichard JM, Lyskowicz E, Joyce K, Hoekstra RM, Chiller TM	Quinolone resistance in *Salmonella* Enteritidis, NARMS, 1996-200		1		Writing/preliminary analysis
26	ThurdeKoos AM	Gay K, Perri M, Joyce K, Donabedian S, Zervos M, and Chiller TM	Vancomycin-resistant enterococci (VRE) carriage in the community: Is this a new reservoir for infection?	NFID 2005	1	1/30/2007	Writing
27	Whichard JM	Carattoli A, Gottleib S, Morabito S, Hyytia-Trees E, Connor R, Bird MM, Wheeler D, Ribot EM, Baker NL, Griffin PM, Barrett TJ	Emergence of plasmid-mediated blaCMY genes and multidrug resistance among *Escherichia coli* O157:H7: results of NARMS monitoring 2000-2001		1	5/12/2005	Writing/confirming results
28	Whichard JM	Theriot CM, Baker NL, Varma JK, VanDuyne S, Barrett TJ	blaCMY-mediated third generation cephalosporin resistance among *Salmonella* enterica serotype Newport strains: Results of FoodNet case-control Study		1	5/12/2005	Awaiting PFGE analysis

0=Analysis, 1=Writing, 2=Draft being reviewed by co-authors, 3=Incorporating comments,4=NCID/CDC clearance, 5=At journal, 6=Published 7=On website