DEPARTMENT OF HEALTH & HUMAN SERVICES Public Health Service

Centers for Disease Control and Preve
Atlanta, GA 30333

October 4, 1999

To: State and Territorial Epidemiologists
State and Territorial Public Health Laboratory Directors

From: Foodborne and Diarrheal Diseases Branch, DBMD, NCID, CDC

Subject: *Vibrio* Surveillance System, Summary Data, 1997-1998

Since 1988, CDC has maintained a voluntary *Vibrio* Surveillance System for culture-confirmed *Vibrio* infections in the Gulf Coast states. Using a standardized form, investigators obtain clinical data, information about underlying illness, and epidemiologic data on seafood consumption and exposure to seawater in the week before illness. When a food item is implicated in illness, a traceback investigation is performed by state field investigators or the U.S. Food and Drug Administration (FDA). Surveillance data have been used to identify environmental risk factors, retail food outlets where high-risk exposures occur, and target groups that may benefit from consumer education.

In recent years, additional states have been invited to participate in this system, and surveillance has expanded to include both the East and West coasts. All reported cases are included in the system, whether identified during routine surveillance, as commonly occurs in Gulf Coast states and FoodNet sites, or because of severe illness or a recognized outbreak, as commonly occurs in other locations. Three outbreaks of *V. parahaemolyticus* infections linked to the consumption of raw oysters occurred in 1997 and 1998. The first occurred in July and August 1997, and involved 209 culture-confirmed cases in persons who consumed oysters harvested from the coasts of California, Oregon, Washington, and British Columbia [MMWR Vol. 47 No.22]. In the summer of 1998, 416 persons developed diarrhea after consuming oysters harvested from Galveston Bay, Texas; 110 of these had culture-confirmed *V. parahaemolyticus* infection. Between July and September 1998, 23 culture-confirmed cases of *V. parahaemolyticus* infections were identified among persons who had consumed oysters and clams harvested from Long Island Sound [MMWR Vol. 48 No. 3].

This letter summarizes data on both sporadic and outbreak-associated *Vibrio* infections reported to CDC through the *Vibrio* Surveillance System in 1997 and 1998. A total of 937 cases of culture-confirmed *Vibrio* illnesses were reported to the *Vibrio* Surveillance System in 1997 and 1998, 389 from 5 Gulf Coast states (Alabama, Florida, Louisiana, Mississippi, and Texas) and 548 from 26 other states and one territory (Figure 1). Among those about whom this information was available, 300 (37%) of 809 were hospitalized and 46 (7%) of 707 died. Although *V. parahaemolyticus* was the most frequently reported *Vibrio* species, *V. vulnificus* accounted for 41 (89%) of the 46 reported deaths.

Most of the *Vibrio* infections (858, 92%) could be categorized into one of three well-recognized

syndromes. Six hundred forty-six (75%) were classified as gastroenteritis, defined as an illness with diarrhea, vomiting, or abdominal cramps, no evidence of a wound infection, and *Vibrio* spp. isolated from stool alone. One hundred thirty-five (16%) of illnesses were classified as wound infections, in which the patient incurred a wound before or during exposure to seawater or seafood drippings, and *Vibrio* spp. was subsequently cultured from the blood, wound, or a normally sterile site. Finally, there were 77 (9%) cases of septicemia, characterized by fever or shock in which *Vibrio* spp. was isolated from the blood or normally sterile site, and no evidence of a wound infection (Tables 1 and 2).

As usual, *Vibrio* infections were seasonal; 417 (65%) of gastroenteritis cases occurred between June and August, 87 (64%) of wound infections occurred between May and August, and 72 (94%) of septicemic infections occurred between May and November (Figure 2). Among illnesses with one *Vibrio* species in which the species was determined, *V. parahaemolyticus* accounted for 473 (75%) of the gastrointestinal illnesses, while *V. vulnificus* was isolated in 64 (51%) of wound infections and 62 (82%) of septicemia cases.

Five hundred-sixty nine (92%) of 616 persons with gastroenteritis or septicemia consumed seafood in the 7 days before their illness onset. Of the 278 (49%) of these who consumed a single seafood, 190 (68%) ate oysters, and 173 (97%) of the 179 persons who provided information consumed their oysters raw.

We encourage rapid reporting of *Vibrio* infections, particularly those linked to seafood, to facilitate timely tracebacks by state shellfish sanitation specialists. Enclosed is a copy of the form participating states use to report *Vibrio* illnesses. If your state would like to report cases of *Vibrio* infection to this surveillance system, please send completed forms to:

Mary C. Evans, M.P.H.
Foodborne and Diarrheal Diseases Branch, DBMD, NCID
Centers for Disease Control and Prevention
1600 Clifton Rd., Mailstop A-38
Atlanta, GA 30333

Patricia M. Griffin, M.D.
Chief
Foodborne Diseases Epidemiology Section
Foodborne and Diarrheal Diseases Branch
Division of Bacterial and Mycotic Diseases
National Center for Infectious Diseases

Robert V. Tauxe, M.D., M.P.H.
Chief
Foodborne and Diarrheal Diseases Branch
Division of Bacterial and Mycotic Diseases
National Center for Infectious Diseases

cc: Director, Epidemiology Program Office
Director, Public Health Program Office
Regional Offices
Director or Regional Operations, PHPPO
Deputy/Associate Directors, NCID
Division/Program/Office Directors, NCID
CDC/W
NCID
Gulf Coast *Vibrio* surveillance coordinators
FoodNet coordinators
FDA

Table 1: *Vibrio* Infections reported to CDC, by Syndrome and Complications, 1997

Vibrio Species	Total # (%)	Syndrome				Complications	
		Gastroenteritis # (%)	Septicemia # (%)	Wound Infection # (%)	Other* # (%)	Hospitalized # (%)	Deaths # (%)
Alginolyticus	7	2 (29)	0	2 (29)	3 (42)	2/6 (33)	0
Cholerae O1	6	6 (100)	0	0	0	2/6 (33)	0
Cholerae non-O1 non-O139	30	18 (60)	4 (13)	1 (3)	7 (24)	12/26 (46)	1/23 (4)
Damsela	5	1 (20)	0	2 (40)	2 (40)	2/4 (50)	0
Fluvialis	17	9 (53)	0	5 (29)	3 (18)	7/13 (53)	0
Hollisae	9	8 (89)	0	0	1 (11)	2/7 (29)	0
Mimicus	11	9 (82)	0	0	2 (18)	3/9 (33)	0
Parahaemolyticus	229	205 (90)	3 (1)	13 (6)	8 (3)	27/206 (13)	2/134 (1)
Vulnificus	58	2 (3)	22 (38)	30 (52)	4 (7)	50/54 (93)	21/51 (41)
Species not identified	12	6 (50)	1 (8)	3 (25)	2 (17)	6/12 (50)	0
Multiple species	2	2 (100)	0	0	0	1/2 (50)	0
Total	**386**	**268 (69)**	**30 (8)**	**56 (15)**	**32 (8)**	**114/345 (33)**	**24/259 (9)**

* Includes eye, otitis, peritonitis, pneumonia, urine, and unknown.

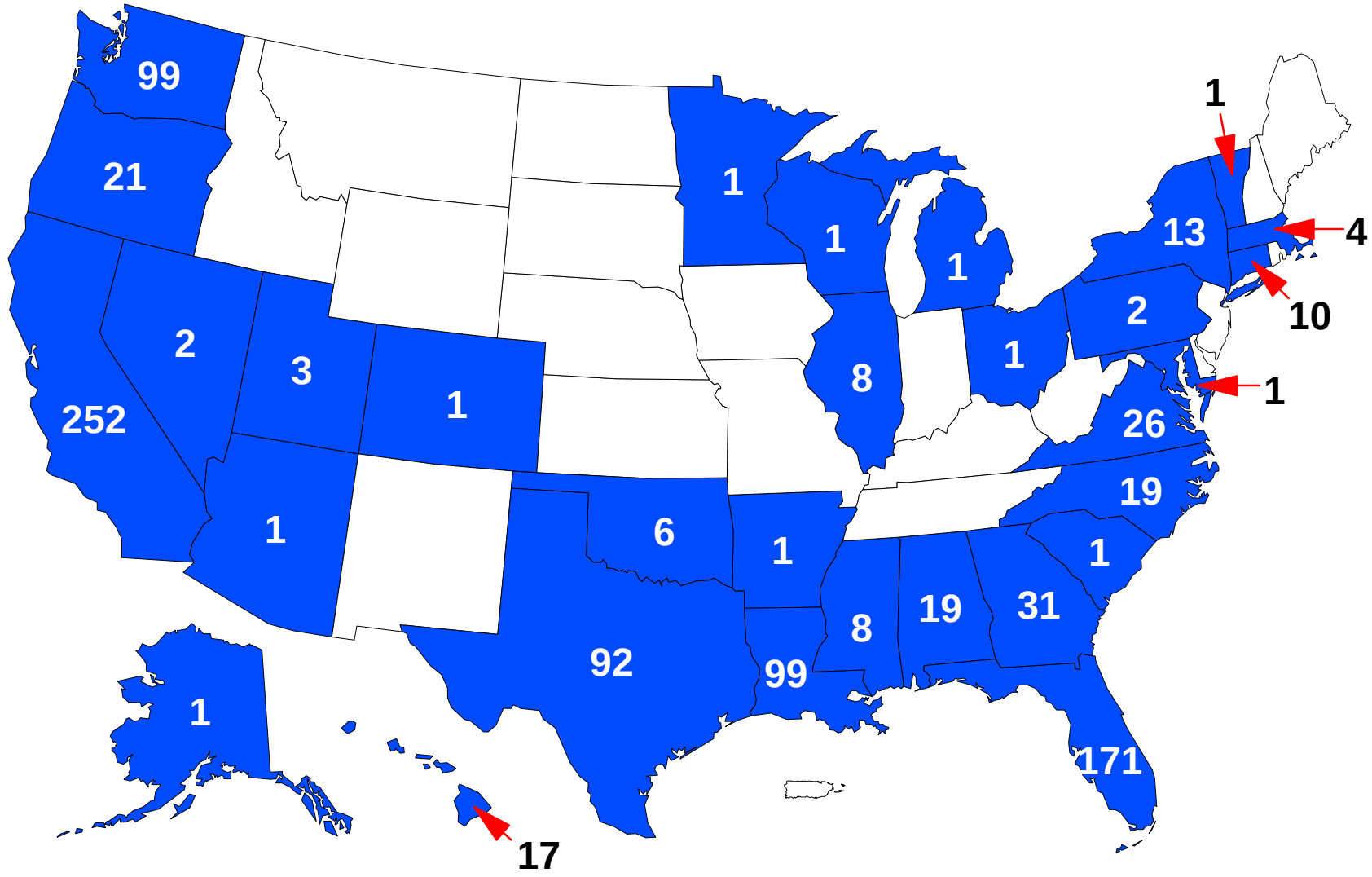
Table 2: *Vibrio* infections reported to CDC, by Syndrome and Complications, 1998

Vibrio Species	Total # (%)	Syndrome				Complications	
		Gastroenteritis # (%)	Septicemia # (%)	Wound Infection # (%)	Other* # (%)	Hospitalized # (%)	Deaths # (%)
Alginolyticus	23	2 (9)	1 (4)	8 (35)	12 (52)	4/22 (18)	0
Cholerae O1	18	18 (100)	0	0	0	7/16 (44)	0
Cholerae non-O1 non-O139	51	40 (78)	2 (4)	4 (8)	5 (10)	20/45 (44)	0
Damsela	3	0	0	3 (100)	0	3 (100)	0
Fluvialis	27	16 (59)	0	5 (19)	6 (22)	8/22 (36)	0
Hollisae	11	11 (100)	0	0	0	3/8 (38)	0
Mimicus	10	10 (100)	0	0	0	3/7 (43)	0
Parahaemolyticus	307	268 (87)	4 (1)	19 (6)	16 (6)	56/246 (23)	2/244 (1)
Vulnificus	83	4 (5)	40 (48)	34 (41)	5 (6)	74/78 (95)	20/71 (28)
Species not identified	13	8 (62)	0	2 (15)	3 (23)	7/12 (58)	0
Multiple species	5	1 (20)	0	4 (80)	0	1/5 (20)	0
Total	**551**	**378 (68)**	**47 (9)**	**79 (14)**	**47 (9)**	**186/464 (40)**	**22/448 (5)**

* Includes: eye, otitis, peritonitis, pneumonia, urine, and unknown.

Figure 1: States that reported *Vibrio* infections to the *Vibrio* Surveillance System, 1997-1998 (N=937)*

(numbers by each state indicate number of illnesses)



*Guam: 24

Figure 2: Seasonality of *Vibrio* infections, 1997-1998 (N=858)