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PINELLAS COUNTY HEALTH DEPARTMENT

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## Foodborne Illness Surveillance and Investigation Program 2007 Annual Report

The Pinellas County Health Department has reviewed the information entered into the foodborne database for the calendar year of 2007 and compiled this report in order to look for trends and common elements in both complaints reported and investigations conducted during this time period. Certain tabulated statistics will also be compared with data from 2003 through 2007 to allow for observation of trends over a longer period of time.

A total of 160 foodborne illness related complaints were received in 2007, from a total of 246 individuals, which resulted in 56 investigations at 60 establishments. The remaining 104 complaints did not meet the Division of Environmental Health's definitions of an outbreak or a single laboratory confirmed foodborne illness and therefore were not investigated. In 2007, 35% of complaints received were investigated which corresponds to 52% of the individual complainant's reports investigated.

### **Florida Department of Health Definition of Foodborne Disease Outbreak:**

An incident in which two or more persons have the same disease, have similar symptoms, or excrete the same pathogens, in addition to a time, place, or person association between these persons. A single case of suspected botulism, mushroom poisoning, ciguatera or paralytic shellfish poisoning or a case of disease that can be definitely related to ingestion of a food is considered an incident of foodborne illness.

### **Complaint Data**

The demographic characteristics of individuals who submitted foodborne illness complaints in 2007 have been recorded and summarized as follows. Of total complaints received, 48% of complainants were male and 52% were female. In 2007, the majority of complainants (86%) identified themselves as white, the remaining complainants identified themselves as other (5%), Black (4%), Asian/Pacific Islander (2%), and 3% of complainants race was unknown. Ethnicity is collected as a separate variable for consistency with Merlin data. Most complainants reported being Non-Hispanic (95%), with 2.5% identifying as Hispanic, and 2.5% of complainants ethnicity unknown.

Data on complainant age is reported using the same age cut offs as CDC foodborne reporting, with one exception. An additional category for persons age 65 and above was created due to

the department’s theory that a disproportionate number of calls were received from retired or elderly individuals. However, the age range with the greatest number of complaints is 20-49 year olds (42%), followed by 50-64 year olds (25%), then those 65 years or older (16%). All data on age is summarized in Table 1.

**Table 1: Age of Complainants, Pinellas County, 2007**

Age	Number	Percent
0-4	8	3.3%
5-19	22	8.9%
20-49	104	42.3%
50-64	61	24.8%
65+	39	15.9%
Unknown	12	4.9%
Total	246	100.0%

Location of the residence of each complainant is also recorded and has been summarized in Table 2 below, which shows the breakdown of city of residence of complainants.

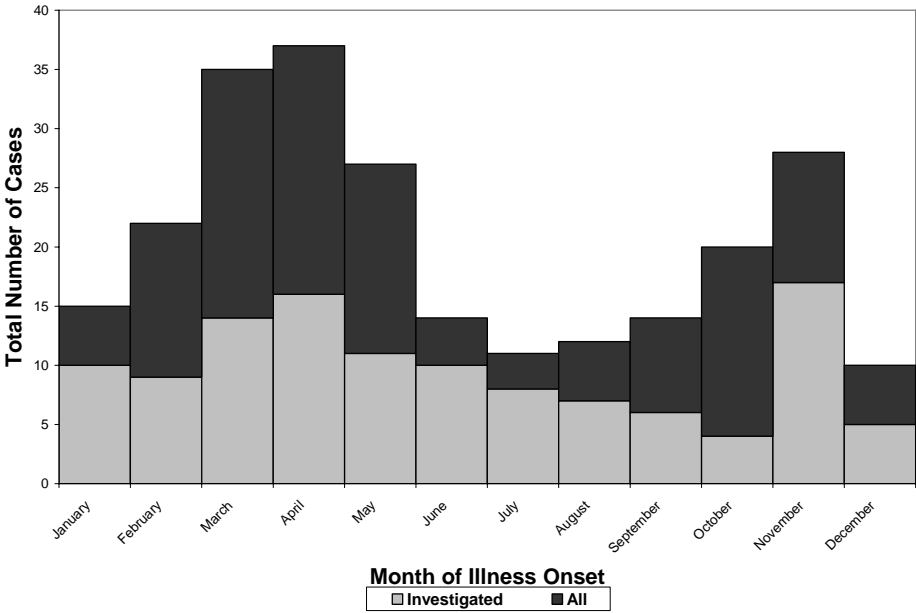
**Table 2: City of residence of complainants, Pinellas County, 2007**

City of Residence	Number	Percent
Clearwater	50	20.3%
Dunedin	5	2.0%
Gulfport	2	0.8%
Kenneth City	1	0.4%
Largo	29	11.8%
Oldsmar	3	1.2%
Palm Harbor/Ozona	8	3.3%
Pinellas Park	15	6.1%
Redington Beach/Shores	1	0.4%
Safety Harbor	3	1.2%
St. Petersburg	48	19.5%
Seminole	9	3.7%
Tarpon Springs	6	2.4%
Treasure Island	3	1.2%
Out of Pinellas County	63	25.6%
Total	246	100.0%

## Illness Data

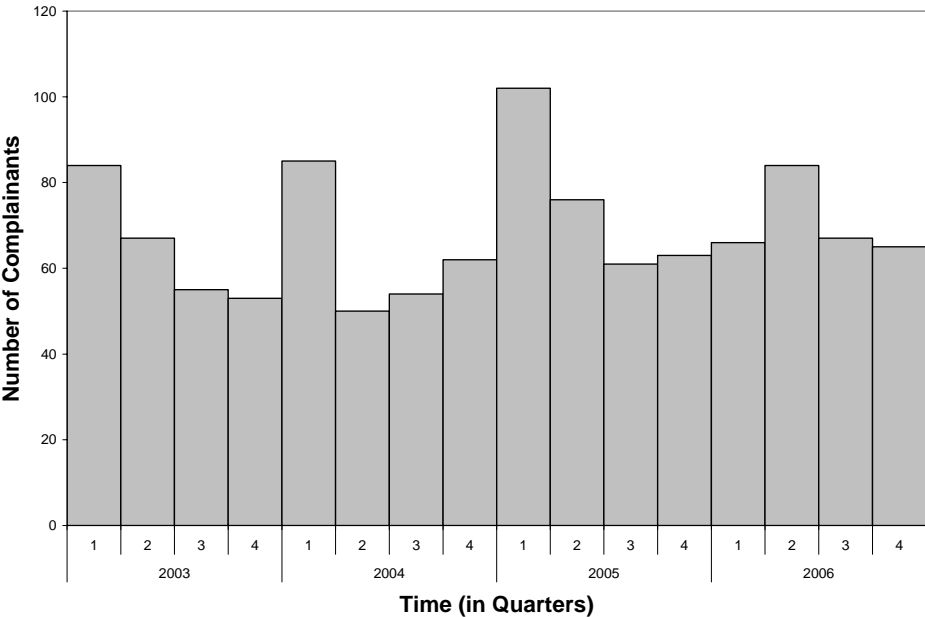
The month of illness onset for reported complaints allows for observations of trends and helps plan for seasonal patterns of outbreaks. Figure 1 displays the number of complainants ill by month. The complainants whose reports were investigated are represented in light grey, and the non-investigated complainants are represented dark grey. The sum of each bar is equal to the total number of complainants in each month. In 2007, the greatest number of complaints were seen in March and April, another smaller peak in complaints occurred in November.

**Figure 1: Total number of complainants by month of illness onset, Pinellas County, 2007**



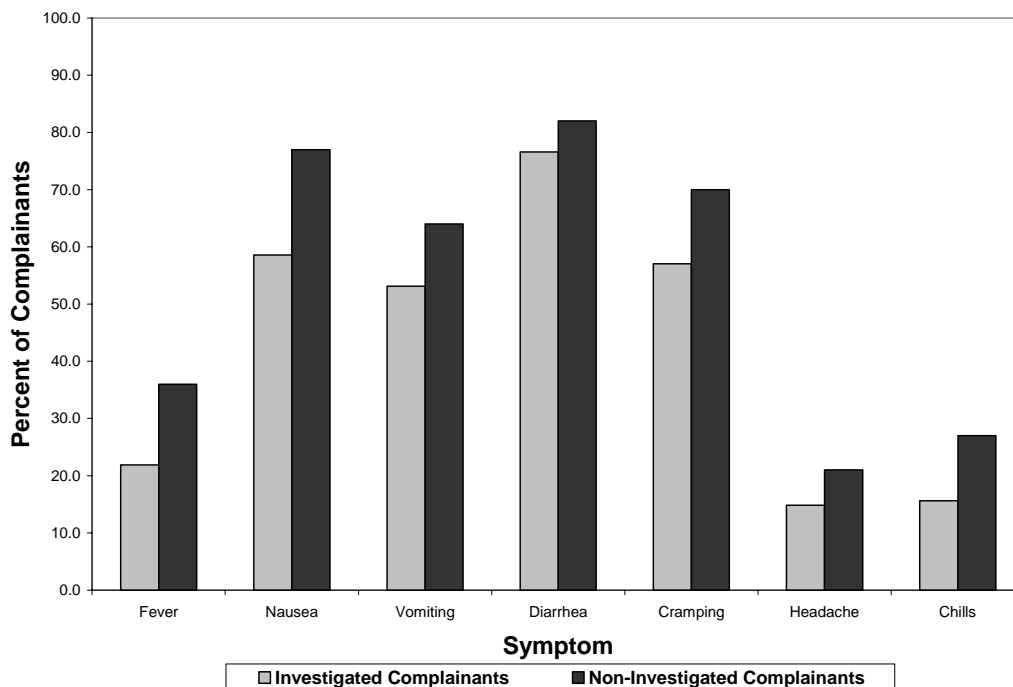
In previous years, fluctuation was observed in both numbers of complaints received and investigated throughout the year. In 2003 through 2005, most complaints were received, during the winter quarter of January through March. In 2006, a smaller peak in complaints was seen in the second quarter (see Figure 2). Foodborne illness is expected to peak in the summer months, however in Pinellas County a pattern of winter and spring complaints has been observed for the past five years. One explanation could be that the spike in winter complaints is due to norovirus, which exhibits winter seasonality. With this theory in mind, more thorough analysis existing data should be pursued.

**Figure 2: Total number of foodborne complainants by quarter, Pinellas County, 2003-2006**



Symptoms reported vary little by investigation status of complainants. All complainants are asked whether they have experienced the following symptoms: fever, nausea, vomiting, diarrhea, cramping, headache, and chills. Of these symptoms, diarrhea was the most prevalent, occurring in 77% of investigated and 73% of total complainants. Following diarrhea in order of highest prevalence were nausea, cramping, vomiting, fever, chills and headache (see Figure 3). All symptoms were reported slightly more often among complainants whose complaints were determined not to constitute a foodborne illness incident.

**Figure 3: Percent of complainants reporting symptoms, investigated complainants and non-investigated complainants, Pinellas County, 2007**



Only 62 complainants (25%) visited any type of health provider in 2007 (see Table 3), and 39 complainants (16%) had any type of specimen collected by a medical provider. Stool samples were collected from 25 complainants (10%), which are generally needed to confirm the type of pathogen present. Table 4 summarizes all specimens collected from complainants.

**Table 3: Healthcare accessed by foodborne illness complainants, Pinellas County, 2007**

Healthcare	Number	Percent
Doctor	33	13.4%
Hospital	36	14.6%
Any Provider (Doctor and/or Hospital)	62	25.2%

**Table 4: Specimens collected from complainants, investigated and non-investigated, Pinellas County, 2007**

Specimen Collected	Non-investigated Complainants		Investigated Complainants		All Complainants	
	Number	Percent	Number	Percent	Number	Percent
Stool	7	2.8	18	7.3	25	10.2
Blood	7	2.8	7	2.8	14	5.7
Urine	3	1.2	2	0.8	5	2.0
Any specimen	14	5.7	25	10.2	39	15.9

The pathogen was confirmed in 30 cases, or 12.2% of all complainants. *Salmonella* was the most common confirmed pathogen, with 17 confirmed cases. A complete list of confirmed pathogens is displayed in Table 5. The low rate of laboratory confirmation is related to the low rate of specimen collection.

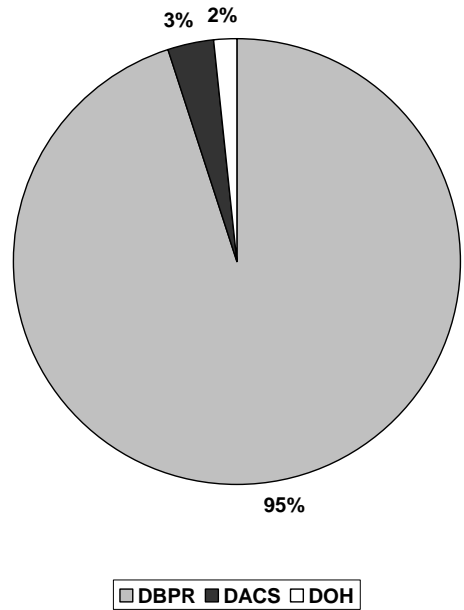
**Table 5: Laboratory confirmed pathogens in complainants, Pinellas County, 2007**

Confirmed Agent	Number	Percent
Salmonella	17	6.9%
Campylobacter	5	2.0%
Vibrio	2	0.8%
E. coli	2	0.8%
Gastroenteritis	2	0.8%
Hepatitis A	1	0.4%
Cryptosporidia	1	0.4%
Total	30	12.2%

## Investigation and Establishment Data

The majority of the establishments investigated in 2007 are regulated by the Department of Business and Professional Regulation's Division of Hotels and Restaurants (DBPR) (95%). Only 3% are regulated by the Department of Agriculture and Consumer Services (DACS), and 2% are regulated by the Department of Health (DOH) (see Figure 4). The distribution of regulatory authorities is consistent with previous years.

**Figure 4: Regulatory Authority of Investigated Establishments, Pinellas County, 2007**



Every investigation focuses on the food item or items most likely to have caused the illness. Chicken was the most commonly investigated food (39%), followed closely by beef and/or pork (34%). Other food items investigated in order of frequency were salad, fish, dairy, other items, other shellfish, and oysters (see Table 6).

**Table 6: Implicated food items investigated, Pinellas County, 2007**

Implicated Foods	Number	Percent
Chicken	23	39.0%
Beef, Pork	20	33.9%
Salad	8	13.6%
Fish	7	11.9%
Dairy	5	8.5%
Other	5	8.5%
Other Shellfish	4	6.8%
Oyster	4	6.8%

Note: An investigation may have more than one implicated food, such that items do not add to 100%.

Table 7 lists the number of implicated establishments found in each municipality within Pinellas County.

**Table 7: Location of investigated establishments, Pinellas County, 2007**

<b>Restaurant Location</b>	<b>Number</b>	<b>Percent</b>
Clearwater	14	23.7%
Dunedin	2	3.4%
Indian Rocks Beach/ Indian Shores	3	5.1%
Largo	7	11.9%
Palm Harbor/Ozona	1	1.7%
Pinellas Park	3	5.1%
St. Pete Beach	3	5.1%
St. Petersburg	20	33.9%
Seminole	3	5.1%
South Pasadena	1	1.7%
Tarpon Springs	2	3.4%
Total	59	100%

Note: Any municipality that is not listed did not contain any implicated establishments in 2007.

The most commonly written up food handling and food preparation notes inadequate hand washing station, lack of hand washing, improper glove use and personnel hygiene violations (see Table 8).

**Table 8: Most common food handling/prep notes, Pinellas County, 2007**

<b>Food Handling/Prep Notes</b>	<b>Number</b>	<b>Percent</b>
Inadequate hand washing station	11	18.6%
No hand washing observed	10	16.9%
Improper glove use	3	5.1%
Personal hygiene violations	7	11.9%

In addition to noting violations, the investigators also follow the implicated food through its storage, preparation, and serving at the establishment and develop a flow chart of this information. From the flow chart, they are able to identify critical control points (CCPs), or steps in the food preparation process where a control can be applied and is essential to prevent or eliminate a hazard (or reduce it to an acceptable level). The most commonly identified CCPs involve inadequate food temperatures in storage, holding and cooking as well as the time in which food spends at unsafe temperatures, such as when food is thawing or chilling. Two additional categories of CCPs were identified this year, inadequate documentation of food temperature or date labeling, and cross contamination. Specific numbers of such observations can be seen in Table 9. Lack of checking final cooked product temperatures has been the most commonly observed critical control point for the past three years.

**Table 9: Most common critical control points, Pinellas County, 2007**

<b>Critical Control Points</b>	<b>Number</b>	<b>Percent</b>
Final cooking temperature	16	27.1%
Lack of documentation (temperatures, date labeling)	10	16.9%
Cross contamination	9	15.3%
Holding temperature	3	5.1%
Improper thaw/rapid chill	3	5.1%
Other (equipment, holding time, etc)	3	5.1%
Storage temperature	2	3.4%
Improper rapid heat	1	1.7%

### **Updates for 2007 and Future Plans**

In 2007, a global distribution list was instituted to ensure that all relevant people were notified immediately each time a new foodborne complaint was added to the database. After a complaint is received, it is entered into the database and all relevant parties are notified by email to review the new complaint in the database. A process for electronic submission, and initialing of foodborne investigations was also instituted. Managers now scan foodborne investigations after reviewing them for completeness to the Foodborne Coordinator. After the Foodborne Coordinator enters the investigation into the database, a PDF copy is e-mailed to the inspector for review and initials.

A new spreadsheet was developed to analyze the yearly foodborne complaint data was developed in 2007. The new spreadsheet automatically calculates and assembles all the tables and graphs for the annual report. The new spreadsheet provides a comprehensive approach to data management, and is more efficient than previous methods of data analysis employed by the Foodborne Program. A new variable reported in part due to the ease of analyzing data using this new method was age of complainants.

Members of Public Health Preparedness and Epidemiology met to brainstorm ideas for how to improve the Foodborne Database for the integrated Foodborne/ Epidemiology database. Several ideas to increase efficiency in collecting, recording and interpreting data were noted. Due to personnel changes in the IT department, the joint Foodborne/Epidemiology database project has been delayed until further notice.